

Shared Operational Picture Exchange Services (SOPES) Information Exchange Data Model (IEDM)

Version 1.0 - Beta 1

OMG Document Number: dtc/2009-11-01
Standard document URL: <http://www.omg.org/spec/SOPES/1.0>
Associated Schema Files*: <http://www.omg.org/spec/SOPES/20090801>
<http://www.omg.org/spec/SOPES/20090802>

* original file(s): c4i/2009-08-12 (PSMs and XSDs), c4i/2009-08-14 (EAP)

This OMG document replaces the submission document (c4i/2009-08-03, Alpha). It is an OMG Adopted Beta Specification and is currently in the finalization phase. Comments on the content of this document are welcome, and should be directed to issues@omg.org by February 22, 2010.

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Preface

About the Object Management Group

OMG

Founded in 1989, the Object Management Group, Inc. (OMG) is an open membership, not-for-profit computer industry standards consortium that produces and maintains computer industry specifications for interoperable, portable, and reusable enterprise applications in distributed, heterogeneous environments. Membership includes Information Technology vendors, end users, government agencies, and academia.

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Intended Audience

This specification will be of interest to stakeholders, developers and members of communities with shared requirements to coordinate, collaborate, execute combined, coalition or multi-agency operations, and in doing so, share information related to situational awareness and collaborative planning, and operational command and control. Their interest will be in the extensive vocabulary provided by the SOPES IEDM and the JC3IEDM's ability to integrate and store that information.

The primary audience for the specification is product developers for emergency and crisis management (ECM) systems, which include situational awareness, collaborative planning, and operational command and control. This is an acknowledgement that development capacity for many ECM organizations is extremely limited and they require commercial-off-the-shelf (COTS), including open-source solutions, in order to expand or enhance communications and interoperability. This is different from the traditional approach prevalent in many military communities that tend to focus on custom integration for their solutions; but this too is changing rapidly, and can benefit from open standards.

After the product developers, the next audience is the integrators. Within this community, the specification targets the analysts, engineers and developers responsible for delivering interoperable joint, coalition and multi-agency consultation, command and control (C3) systems and services; or for gateways between the military and other participating organizations and agencies. In these domains, integration around a single product or technology is not practical, as many of the periphery organizations have established investments that they are not willing to alter.

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About this Specification

Overview

This Shared Operational Picture Exchange Services (SOPES) Information Exchange Data Model specification is in response to OMG's request for a standard Data Model, Business Rules and Semantics for consultation, command, and control (C3) for crisis response operations. The SOPES IEDM is intended to enhance information sharing and operational effectiveness of collaboration, command and control systems operating in military and crisis response coalition and multi-agency operations.

Relationship to MIP

At the issuance of this specification, there is no formal relationship between the C4I DTF and the MIP. The JC3IEDM was submitted to the DTF, after coordination with the MIP community, under a task funded by the United States (US) Department of Defence (DOD). It was accepted by the team as a normative element of this specification. The objective of the specification effort was a publicly accepted specification that yields multiple commercial off the shelf (COTS) ECM systems and applications integrating JC3IEDM semantics as part of their Application Program Interfaces (APIs).

Specification Focus

The SOPES IEDM specification formalizes a platform independent set of data patterns for the construction, parsing and processing of JC3IEDM semantics for situational awareness and collaborative planning. The data patterns apply directly to a set of transactions for the MIP Joint Consultation, Command and Control Information Exchange Data Model (JC3IEDM: version 3.1c ratified December 2007). The specification provides this set of data patterns as building blocks for the exchange of information that is applicable to a wide range of operational communities, including:

- First Responders (e.g., Police, Fire Department and Emergency Medical Personnel);
- Government Agencies (Federal, Provincial/State, and Municipal);
- Non-Governmental Organizations (NGOs);
- Other Government Department (OGD);
- Private Volunteer Organizations (PVOs);
- Para-military and security agencies; and
- Military (Joint, land, maritime, air, space and coalition).

These communities have comparable requirements for shared situational awareness, and collaborative planning. Their operations are increasingly crossing organizational, agency and national boundaries. The participating organizations are required to collaborate on asymmetric realtime operations such as: Crisis Response, Disaster Recovery, Humanitarian Aid, Sustainment and Support Operations, Public Health and Safety, Stability Operations and Homeland Security. The scope, complexity and frequency of these operations are presenting significant communication challenges. The SOPES specification provides a core set of information patterns that have the potential to bridge evolving community semantics and ontologies.

Why the JC3IEDM

Over a near twenty year history, the Multilateral Interoperability Programme (now 27 nations) has evolved the JC3IEDM from army centric data replication capability, under the Army Tactical Command and Control System Study (ATCCIS), to a generalized set of information semantics that has the potential to support a wide range of operational domains in the areas of emergency and crisis management (ECM). The JC3IEDM provides a rich set vocabulary for consultation, command and control that establishes a foundation upon which cross-domain information sharing can be evolved. It is this rich set of semantics that the OMG seeks to leverage as part of its SOPES initiative. The OMG is taking the JC3IEDM back to its origin, that of a Generic Hub (GH) for operational and tactical situational awareness and collaborative planning across heterogeneous organizations and agencies. The history of JC3IEDM is provided on the MIP web-site (<http://www.mip-site.com>).

JC3IEDM does not present a 100% solution to the information sharing needs of the ECM community, but it does provide a substantial underpinning to the integration of data comprising a core set of semantics for the ECM community. The JC3IEDM continues to evolve as it moves into MIP Block 4 Design, and the SOPES IEDM will continue to be uplifted to reflect increased capabilities for the underlying model.

Informal discussions with the MIP member nations exposed a natural desire to share MIP technology and lessons-learned from its it rich history of accomplishment. It is felt that the JC3IEDM could enable and support the requirements of a broader community such as the emergency and crisis management. Even if not internalized by ECM systems, the JC3IEDM provides a standard multinational command and control (C2) interface specification that the ECM community see during ECM operations. In return, MIP enabled organizations could interoperate with a broader community without major changes to its internal processes and structures. The OMG C4I DTF represents an opportunity for the MIP and ECM communities to leverage each others' activities in a neutral forum.

For broad-based interoperability to evolve in the near and medium term, it is crucial that communities leverage practices, products and technologies that have proven to be effective and have community acceptance. The JC3IEDM represents one of these specifications.

ECM Community Semantics

Based on the large number of community efforts to develop semantic exchange models, the scope and urgency of the need is clear. The OMG realizes that message semantics are the purview of the individual communities. However, the OMG does see a role in the specification of the more technical aspects of information sharing and those areas not being actively addressed by the community. This model of collaboration is working well with the healthcare community, in specific with HL7.

These ECM community efforts have demonstrated some interoperability; but these efforts are not realizing the expectations of the communities and stakeholders. Issues such as information assurance, information protection, security and privacy are hindering progress in many areas. It is these areas of information interoperability that the OMG is seeking to address.

The foundation of information interoperability is the capacity of each partner to: interpret, process, store and report received information; and to assure that the correct meaning is inferred and maintained by its information systems. The producer of the information must understand how to assemble, structure and format the information (e.g., the message) in a manner that effectively conveys meaning and enables automated processing; while protecting sensitive, private and classified information. There needs to be the capability to specify the policies and rules for constructing and marshaling the datasets comprising an exchange message (in this document referred to as a "semantic"). This specification describes a generic UML representation for expressing these policies (Annex A).

SOPES IEDM

The SOPES IEDM specifies a set of data patterns describing the policies for constructing and processing the data comprising a community semantic - in terms of a common set of JC3IEDM transactions. The SOPES IEDM builds on the ATCCIS and MIP efforts to address the limitations of traditional formatted messaging approaches that did not support data integrations and the growing needs of decision makers for quality information in a form that could be processed by information and decision support systems. These formatted messages included:

- ADatP-3 - Allied Data Publication No 3 - Message Text Formatting System;
- OTHGold - Over-The-Horizon-Gold message format to the common operational picture (COP);
- USMTF - Uniform Services Message Text Format;
- VMF - Variable Message Format;
- CMF - Common Message Format; and
- Others.

The principle challenges associated with properly using these formatted messages lay in: 1) inconsistent implementation of rules for preparing the data to be exchanged; 2) inconsistent implementation of rules for processing the data when it is received, and 3) widely varying community message styles. Consistent implementation of message exchange and processing rules may have as much to do with conveyance of meaning as the semantics and structure and syntax of the messages.

To address these challenges in the early 1990s the ATCCIS and then MIP efforts undertook the development of a data exchange mechanism (DEM); initially called the ATCCIS Replication Mechanism (ARM). The mechanism controlled the data replication process between JC3IEDM enabled systems or nodes (similar to other data replication architectures, e.g., "COP Sync" used in the US Global Command and Control System). It is through the Data Exchange Mechanism (DEM) specification that the MIP community governs the semantics of information exchange. Multiple information exchange options now exist that did not exist when the ARM and DEM were first conceived. A number of communities are interested in exploiting the JC3IEDM with the capabilities provided by the latest open standards for Service Oriented

Architecture (SOA), Web Services, Web Portal and/or Data-Distribution Service for Real-Time Systems (DDS). For these communities to leverage JC3IEDM using multiple/alternative platform specific dissemination platforms requires the separation of the business rules from the DEM in a platform independent manner; which is the target of this specification.

Reusable Information Patterns

The SOPES IEDM differs from the JC3IEDM because it focuses on the use and exchange of information rather than the storage schema. It provides a generic set of reusable information patterns that support both situational awareness and collaborative planning for a broad cross section of the ECM community. The set of 180+ patterns are divided into sixteen packages, including:

- Actions;
- Capabilities;
- Context;
- Control Features;
- Facilities;
- Geographical Features;
- Holdings;
- Locations;
- Materiel;
- Meteorological Features;
- Object Item;
- Object Type;
- Organization;
- Personnel;
- Plans and Orders; and
- Reporting.

The patterns are derived from the JC3IEDM and allow individual communities to select and use a subset of patterns to address their specific operational needs. The pattern based approach also simplifies their applications by focusing on only those parts of the a rich model that provides value to them. The patterns allow communities to implement object based solutions independent of the relational nature of the JC3IEDM, while maintaining the inherent semantics of that model.

Benefit to MIP

The MIP community is expected to benefit from the generalization, abstraction and formalization of JC3IEDM semantics as part of an open commercial specification through:

- The use of the JC3IEDM semantics within the information systems organizations engaged in targeted operational areas (e.g., OGDs, NGOs, and PV);
- The use of the JC3IEDM in the national domains during homeland security, public safety and aid-to-civil-power operations;
- The expression of a reusable set of information patterns (building blocks) aligned to most architectural frameworks (e.g., Public Safety Architectural Framework and Zachman);

- The alignment to model driven architecture (MDA) practices;
- The development of multiple cost-effective commercial off the shelf (COTS) implementations available to military and non-military agencies; and
- The alignment with evolving information distribution technologies such web services, SOA and DDS.

The current MIP implementation relies on continual community interpretation of the shared physical schema to design and develop the information exchange patterns for the construction of messages and to the consistent marshalling of messages to a JC3IEDM instance. This MIP approach has demonstrated a sophisticated information sharing capability, but also shows several procedural limitations, including:

- The need for high levels of collaboration and testing between community participants.
- The impracticality of growing the MIP community to include a large number of OGDs, NGOs, PVOs, First Responder, etc. organizations;
- The tight alignment of the JC3IEDM with MIP's Data Exchange Mechanism (DEM) as the only supported mechanism that integrates the business rules challenges the JC3IEDM's integration into national information sharing infrastructures; and
- The high life-cycle costs and complexity make it prohibitive for smaller organizations and agencies.

The SOPES, Information Exchange Framework (IEF) and Emergency, Crisis and Major Event Management (ECMEM) initiatives can provide assistance to a broader community. Open commercial specifications, such as SOPES, will provide insight into domain independent approaches and provide the potential for implementation of open-source, shareware and COTS implementations, thereby facilitating the adoption of JC3IEDM semantics and reducing dependencies of the approach on the DEM. This will facilitate the use of JC3IEDM semantics in the broader community, and further mitigate the procedural limitations inherent in current MIP approaches.

Benefit to other Communities

The MIP community has similar legislative and regulatory requirements to share information as do the ECM organizations targeted by the SOPES initiative. Over two decades of design, implementation, testing and demonstration the JC3IEDM has evolved a rich vocabulary covering a broad spectrum of situation awareness and collaborative planning domains. This testing and demonstration program has proven the capacity of open standards and information modeling to address a wide range of operations requirements - many reaching far beyond the military requirement. This proven track record and acceptance of such a large community are achievements that most interoperability initiatives cannot claim. The JC3IEDM semantics represent a foundation upon which information sharing solutions can be evolved.

The twenty-seven (27) nations, forming the MIP community, have expended significant operational, management and development resources to the development of the JC3IEDM. This level of expenditure is far beyond the capacity of most organizations being targeted by this specification. The knowledge and lessons learned by the MIP community are available to be exploited by the broader ECM community. Through this specification the OMG is offering a vehicle to exploit this significant knowledge base.

The reality of the new millennium is that, increasingly, military and non-military organizations are jointly involved in operations such as peacekeeping, humanitarian aid, reconstruction operations, security, public safety and aid-to-civil power operations. Stakeholders in these operations are seeking interoperable information systems as a resource multiplier in an environment of scarce resources. Domain specific specifications will not address this broad requirement; nor address the current requirement to integrate all partner communities into one proprietary solution.

Way forward

The OMG C4I DTF seeks to expand its work with other taskforce and standards bodies to align a set of open standards and publicly accepted specifications that yield multiple commercial and open-source implementations. The platform independent model (PIM), presented in UML, expresses the transactional semantics of the underlying JC3IEDM schema in a manner that promotes the development of multiple platform specific model (PSM) transformations useful for implementers including Java, C++, and the consistent expression of policy/rules in a variety of formal languages (e.g., SWRL), XSD/XML, and Web Ontology Language (OWL). Using the construction and processing patterns expressed in the UML model, the communities can develop semantics and implementations tailored to their operational needs; assured that exchanged information meets the core semantics of a common data model (JC3IEDM).

Through subsequent revisions the SOPES IEDM will continue to leverage the MIP effort and advance interoperability both within and among heterogeneous operational domains.

The C4I DTF is currently working on Middleware and Related Service (MARS) Platform Taskforce (PTF) under the Information Exchange Framework (IEF) working group (WG) to develop specifications for other interoperability requirements. The IEF WG is seeking to align or develop a set of specifications for cross-domain secure policy based information exchange (/sharing) environments. Additional information can be found at the MARS WIKI: <http://www.omgwiki.org/mars/doku.php?id=ief>.

1 Scope

Following 9/11, the Object Management Group's (OMG) Consultation, Command, Control, Communications, and Intelligence (C4I) Domain Taskforce (DTF) initiated the Shared Operational Picture Exchange Services (SOPES), to publish a series of publicly accepted specifications that would enable emergency and crisis management (ECM) organizations to develop or acquire interoperability solutions. During the early stages of this undertaking, it became apparent that there was a much broader community that could realize benefit from the SOPES specifications; these communities included the Non-Governmental Organizations (NGOs), Private Volunteer Organizations (PVOs), and Other Government Departments (OGDs) and the military.

Through the SOPES effort, the DTF seeks to advance and promote specifications that will provide affordable information interoperability solutions. These solutions would be integrated into commercially available products and not require the current amounts of custom development and integration prevalent in the military systems, and in interoperability solutions generally. The taskforce also realized that SOPES mirrors the efforts of several other community consortia, as well as several other OMG domain and platform taskforces. The SOPES initiative intends to, where applicable, adopt and integrate community accepted specifications and standards.

One such standards effort is the Multinational Interoperability Programme (MIP), which for more than 20 years has been developing, testing and demonstrating interoperability solutions within in a community that now numbers 27 nations. Its efforts have pioneered significant advancements in the exchange and integration of situation and planning information. The DTF sought to exploit the MIP capability to integrate information from multiple national systems into a shared operating picture through the development and adoption of the Joint Consultation, Command and Control Information Exchange Data Model (JC3IEDM).

Having reviewed the MIP community accepted specifications; the authors came to appreciate that the open, multinational, standardized command and control semantics of the JC3IEDM could form a normative specification for operational situational awareness reporting as well as response and collaborative planning suitable for a broad range of crisis, emergency and major event management communities. It could integrate and store information from a wide range of sources and enable the implementation of a shared operating picture. Using the JC3IEDM as a foundation, the team undertook the development of a transactional model to standardize the business rules (interface) for the use of the JC3IEDM and provide a set of information building blocks (architectural components) upon which ECM communities could align their messaging semantics. The MIP community was engaged and has been supportive of the SOPES process, objectives, standards definition, and leveraging of the JC3IEDM.

The Shared Operational Picture Exchange Services (SOPES) initiative reflects an increasing community focus on delivery of flexible and adaptive information sharing capabilities to address a wide range of asymmetric real-world situations and events. Communities are seeking advanced, effects-based operations, network enabled capability, and network-centric operations. This is forcing organizations to investigate advancements in information systems that assure timely, quality, accurate information to decision makers, while effectively protecting sensitive or classified information from malicious or inadvertent release. Delivered communities of Interest (COI) systems need to provide seamless integration with multi-agency operational networks; provide integrated strategic, operational and tactical pictures that capture knowledge and enhance situational awareness (SA); and support collaborative planning and decision-making. Although much of this capability will be transparent to the end-user, it will contribute significantly to the effective allocation and use of scarce resources before, during and after ECM operations.

The objective combined SOPES + IEF capability will be the specification an architecture-driven, policy-enforced Information environment that enables shared situational awareness and empowering decision support through an interoperable operating environment. The resulting specifications will enable ECM alerting, response, consultation,

collaboration, command, control and communications capability which are expected to evolve over time and adapt to community information and knowledge sharing needs. The specifications will enable individual communities and/or organizations to tailor solutions to their own legislated mandate, policies and practices.

2 Conformance Criteria

2.1 Required Compliance

A SOPES IEDM-compliant service is required to implement information transactional semantics as expressed in the XML Schema Definitions (XSD) provided for in Annex E - for the following packages:

- Type 1- OO XSD: is an Object Oriented XSD which allows for the selective use of the watchpoint transactionals; and
- Type 2- Minimal XSD which requires the integration of the business logic specified in the transactional models into the end-node logic and the processing of leaf-node XMI documents.

Compliant environments will demonstrate the capacity: to aggregate data into SOPES IEDM compliant transactions (as specified in either TYPE 1 or Type 2 XSDs); and on receipt of a transactional data set marshal the data into the data store in accordance the SOPES specified Rules.

2.2 Optional Compliance Points

A SOPES IEDM-compliant implementation that supports processing of MIP specifies Protocol data units (PDU) and the test cases provided for the MIP Test Reference System (MTRS) at <https://trac.fkie.fgan.de/MTRS>. Compliant environment must demonstrate an equivalent capability as that illustrated in section 1.19.2.

MIP PDU Grammar can be found in MTIDP-AnnexA-MIP_DEM_Specification-DNK-SEAWG-3.8.pdf.

3 Normative References

The following MIP documents are foundational to the SOPES IEDM; the following are the normative MIP documents:

- Multilateral Interoperability Programme's Joint Consultation, Command and Control Information Exchange Data Model (JC3IEDM) V3.1c. (Note: at the time of submission MIP JC3IEDM version 3.1e is being published and renumbered as version 3.0.2 (reflecting a new MIP numbering scheme). The differences between version 3.1c and 3.1e are considered minor in the context of the SOPES IEDM specification. Looking forward, the MIP is currently assessing a transition to a UML PIM as its normative reference. Future revisions of the SOPES specification will adopt the latest version of JC3IEDM and will transition to a MIP provided PIM when officially published.
- Multilateral Interoperability Programme's Joint Consultation, MIP Information Resource Dictionary (MIRD).

3.1 MIP JC3IEDM References

The following references, which can be found at <http://www.mip-site.org/>, form the document set for the JC3IEDM version - "UK-DMWG-Edition_3.1c":

- JC3IEDM-Overview
- JC3IEDM-Main

- JC3IEDM-Annex A-Glossary
- JC3IEDM-Annex B-Entities
- JC3IEDM-Annex C-Attributes
- JC3IEDM-Annex D-Relationships
- JC3IEDM-Annex E-Domain values
- JC3IEDM-Annex F-Other domains
- JC3IEDM-Annex G1-BRs-Text-UK
- JC3IEDM-Annex G2-BRs-Coded
- JC3IEDM-Annex H-Class words
- JC3IEDM-Annex I-IDef1X-UK
- JC3IEDM-Annex J-References
- JC3IEDM-Annex K-Logical view
- JC3IEDM-Annex L-Physical view
- JC3IEDM-Annex O-XML
- JC3IEDM-Annex P-SQL Script
- JC3IEDM-Metamodel-Specification
- JC3IEDM-MIRD.mdb

The following references are developmental JC3IEDM artifacts derived from the "UK-DMWG-Edition_3.1c" version:

- PIM - Developed by Institute for Defense Analyses, Enterprise Architect
- Army PSM SDK - Developed by Institute for Defense Analyses, Enterprise Architect

The normative reference for the JC3IEDM is the MIRD (JC3IEDM-MIRD.mdb) which captures the complete specification and business rules for the JC3IEDM in metadata form. International Standards and Specifications

Elements of the following international standards are integral to this specification:

- ISO/IEC 19501:2005, Information Technology - Version 1.4.2- Open Distributed Processing -Unified Modeling Language (UML).
- ISO/IEC 19502:2005, Information technology - standard - Meta Object Facility (MOF), meta-modeling and metadata repository.
- ISO/IEC 19503:2005, Information Technology -- XML Metadata Interchange (XMI), a metadata interchange standard.

3.2 Reference Materials

The following materials are referenced by this specification:

- Not applicable

3.3 Additional Material

The Enterprise Architecture Project (EAP) file used to generate the model presented in this specification is also provided on the OMG Web site: 20090213_SOPES_IEDM_Revision_0-96.EAP.

Information on the MIP Test Reference System can be found at: <https://trac.fkie.fgan.de/MTRS>.

Additional information on MIP and JC3IEDM development can be found at <https://trac.fkie.fgan.de/JC3XML> and <http://mda.cloudexp.com/>.

4 Additional Information

4.1 Submitters

The following OMG member submitted this specification:

- Advanced Systems Management Group Ltd. (ASMG), Canada

This specification was developed under an open Information Assurance (I Assure) Defense Information Systems Agency (DISA) contract vehicle. Sponsorship was provided by the United States Department of Defense's (DOD) Advanced Systems and Concept (AS&C) and Networks and Information Integration (NII) offices. Technical oversight was provided by the Naval Undersea Warfare Center, Newport.

4.2 Supporters

The following companies support this specification:

- Office of the Secretary of Defense (OSD) DDR&E AS&C;
- Office of the Secretary of Defense (OSD) Network and Information Integration (NII) [ICCTS]
- US Joint Forces Command USJFCOM ;
- NATO Consultation Command and Control Agency (NC3A);
- US Army, CIO G3/5/7 and 6;
- Institutes for Defense Analyses (IDA);
- Naval Undersea Warfare Center, Division Newport (NUWC); and
- Canadian Department of National Defence Information Management Group (IM Group), Enterprise Information Security Environment.

The Multilateral Interoperability Programme (MIP) recognizes the United States efforts, through this specification, to broaden awareness and adoption of the JC3IEDM by industry and interfacing agencies and organizations.

4.3 Acknowledgements

The following individuals or organizations provided their expertise to parts of this specification and/or have assisted the SOPEs IEDM team in the development of the specification:

- Advanced Systems Management Group Ltd.
- Naval Undersea Warfare Center (NUWC);
- Institute for Defense Analyses (IDA);

- Department of National Defence (DND), Enterprise Information Security Environment Project;
- Multilateral Interoperability Programme (MIP); and
- Computer Science Department of Carleton University (Ottawa).

4.4 Relation to other Specifications, Standards, and Initiatives

SOPES authors were directed to, wherever possible, adopt and integrate existing publicly accepted specifications and standards. Specific to this specification, the author of the SOPES Information Exchange Data Model (IEDM) has adopted the MIP JC3IEDM Version 3.1c as its normative information environment. (Note: at this time MIP JC3IEDM version 3.1e is in the process of being published as version 3.0.2 (reflecting a new MIP numbering scheme and minor changes with respect to version 3.1c). Future revisions of the SOPES specification will adopt the latest version of JC3IEDM.

In addition the specification incorporates elements of the following specifications and standards:

- **UML** Class diagrams are used to model the Semantic patterns for the JC3IEDM logical and physical schemas. A description of the usage of UML is provided in Annex 2.
- **OCL** is used to express model navigation constraints and construction plans for the specified data patterns.
- XML Schema Definition (**XSD**) is used as a platform specific implementation of the data patterns.
- **JAVA** is used as a platform specific implementation of the programming patterns derived from the UML.
- UML Profile for DODAF and MODAF (**UPDM**) is used to provide an architectural basis for the SOPES IEDM modeling paradigm.
- **JC3IEDM** is the normative specification for the information and data patterns described by this specification.

5 SOPES

The Shared Operational Picture Exchange Services (SOPES) is an initiative of government, academia, and industry, through the Object Management Group (OMG) Consultation, Command, Control, Communications and Intelligence (C4I) Domain Taskforce (DTF) to define a framework for a set of open standards that specify a secure and trusted policy-based information exchange services to enable information interoperability in the emergency and crisis management (ECM) domain. The SOPES objectives include:

- Improve shared situational awareness and collaborative planning capability in coalition and multi-agency operations;
- Increase interoperability within and between organizations, systems and applications;
- Facilitate the implementation and deployment of capability to meet the emerging requirements of stakeholders and users;
- Enable the exploitation of community information assets;
- Improve the quality of information sharing, focusing on the following characteristics:
 - Accuracy: semantics to accurately convey the perceived situation.
 - Relevance: information tailored to specific requirements of the mission, role, task or situation at hand.
 - Timeliness: information flow required to support key processes, including decision making.
 - Usability: information presented in a common, easily understood format.
 - Completeness: information that provides all necessary (or available) information needed to make decisions.
 - Brevity: information tailored to the level-of-detail required to make decisions and reduces data overload.
 - Trustworthiness: information quality and content can be trusted by stakeholders, decision makers and users.
- Control the spiraling life-cycle costs of information systems and technology;
- Improve the management of private, confidential and sensitive information; and
- Increase flexibility, agility and adaptability in deployed information systems.

5.1 Benefits of the SOPES IEDM

As an open specification the SOPES IEDM provides several benefits, including:

- The ability to leverage the knowledge, skills and experience of both the OMG C4I DTF and the MIP community in the areas of command and control and information interoperability.
- An increased ability to control overall life-cycle cost through industry demonstrated benefits of open standards, including:
 - Increased Interoperability;
 - Vendor neutrality;
 - Efficient use of existing resources;
 - Greater use of automation;
 - Greater use of model driven architectures;

- Greater flexibility and agility;
 - Greater number of COTS options, provide more opportunities to optimize;
 - Lower and more manageable risk;
 - Increased robustness and durability;
 - Improved system and application quality; and
 - Increase available resources and skills.
- Implementation of multiple commercial off the shelf solutions that provide community participants with options and a means to control life-cycle costs.
 - Implementation of open-source solutions.
 - Improved ECM community interoperability.

5.2 SOPES IEDM Scope

The SOPES initiative will deliver a set of open specifications that deliver policy based **Semantic Interoperability** between heterogeneous information systems. The capability will provide two or more communities to exchange information between systems and have the meaning of that information preserved. The information will be automatically parsed, interpreted, stored and reported by the receiving system in a manner that produces a desired result, as specified by the community of interest.

Over the last decade the community has started to appreciate the value of formal languages (semantics) for expressing concepts that enable coordination, collaboration, command and control. This SOPES IEDM specification has one objective that of formalizing a set of reusable information patterns for the MIP JC3IEDM to deliver building blocks for multiple community semantics. These patterns capture a formal set of policies (business rules) governing the production and interpretation of semantically complete JC3IEDM messages. The patterns are agnostic to the exchange protocol and can be equally applied to XML, Protocol Data Units, or other exchange syntax or protocol. They simply specify which information (/data) elements are included in a semantically complete information exchange; as specified by the community.

Figure 5.1 shows how SOPES IEDM provides reusable information templates (referred to as transactionals and wrappers) that can be aggregated into community specified semantics, which represent “information objects,” “business objects,” “message payloads,” or “documents.” Each community application/system may employ a transformation to map the COI message payloads to and from the local application data representation. Exemplars for semantics can be found in Chapter 11.

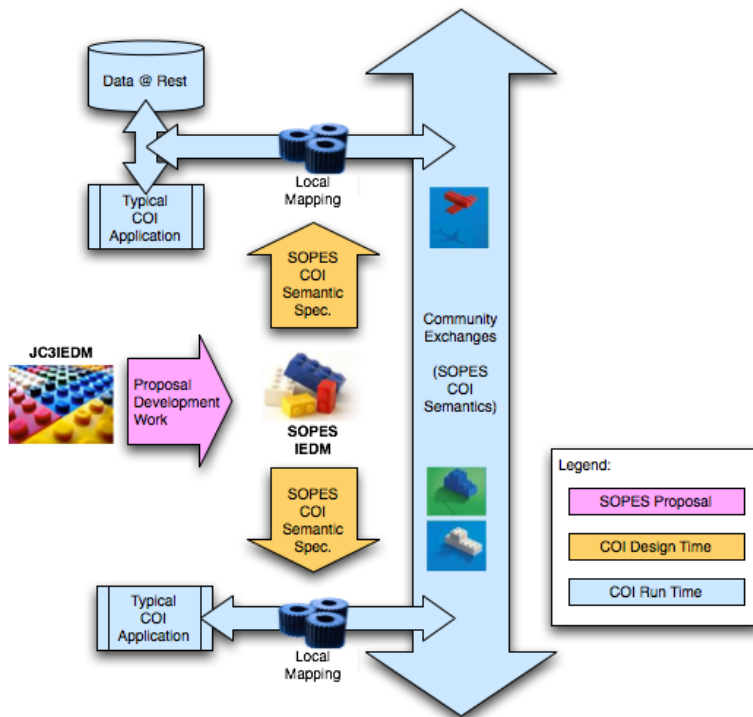


Figure 5.1 - Community Exchange Using SOPES IEDM Semantics

The transactional patterns expressed in the 16 subject areas outlined in Chapter 10 permit communities to adopt meaningful subsets of the data model, rather than the model as a whole. This has been a started desire of many communities seeking to adopt the JC3IEDM, which provides a rich C3 vocabulary and exchange capability.

5.3 JC3IEDM Introduction

The Joint Consultation, Command and Control Information Exchange data Model is a normative part of this specification. It provides the persistent data structure and vocabulary underpinning the transactional patterns expressed in Chapter 10.

5.3.1 The Challenge

The diverse information needed to maintain situational awareness and mount an effective response to a natural or man-made disaster has typically resulted in the creation of numerous peer-to-peer system or service interfaces. Such an adhoc set of capabilities is typically expensive to build and maintain and places a significant burden on new partners and established partners alike. Importantly, effective and efficient integration of automated processing of heterogeneous data sources has not been achieved at any sustainable level; causing the communities to rely instead on manual collection, analysis and coordination. Operation centers suffer from an abundance of data which is difficult to manage, access, use and share; resulting in **DATA OVERLOAD**. Data is often redundant, inconsistent, inaccurate and latent – making it virtually inaccessible to the decision makers. Data-warehousing, data-fusion and decision support applications provide excellent approaches for transforming data into useful and reliable information for decision makers and to achieve situational intelligence. Unfortunately, the proliferation of situational awareness, command and control (C2), planning and decision support applications has resulted in almost as many information representations and treatments of situational and planning information as there are applications.

This challenge has been at the heart of a wide range of technical efforts over the past few years; including the increasing focus on communities of interest (CoI). Typically, the first step in the journey involves the development of a common or shared data schema (e.g., a community XML schema). These efforts seek to provide a structure for transforming information to a single interface definition for a community, and thereby control the proliferation of peer-to-peer message schema definitions and their associated resource costs. Individual systems (/applications) need only supply a single (bi-directional) interface to the community; resulting in a dramatic decrease in the number of interfaces to be developed and maintained.

In spite of their initial success, these solutions have often proven to be rigid and brittle; moving, but not eliminating the stovepipes. The communities of interest require constant interaction at the business and technical levels to address even the smallest change in information requirements or business rules. Without this interaction, applications tend towards a differing application of business rules against a data model, deprecating the interoperability the underlying model was intended to deliver. Additionally, the approaches often require steep learning curves on the part of new entrants to the community in environments that typically have a scarcity of subject matter experts.

5.3.2 JC3IEDM

The Army Tactical Command and Control System (ATCCIS, 1991-2001) and the Multilateral Interoperability Programme (MIP, 1998 - present) have steadily worked to develop operational and technical consensus on protocols and semantics for coalition collaboration, coordination, command and control. The semantics are captured today in the Joint Consultation, Command and Control Information Exchange Data Model (JC3IEDM), a single normalized logical data model supported by many heterogeneous information systems fielded by coalition and industry partners. As the adoption of the JC3IEDM specification expands to a broader community comprising more than 27 NATO, Partners for Peace and aligned nations, approaches are being sought to facilitate the integration of the JC3IEDM into a greater cross-section of these command systems. JC3IEDM provides an information exchange standard enabling coalition military and other partners are to work effectively with each other during emergency/crisis response and humanitarian operations.

5.3.3 Army Tactical Command and Control Information System

NATO operations require deployed forces to form part of combined and joint coalition formations. Earlier operations focused on general military (war) requirements. Increasingly NATO is being employed in large scales crisis response and humanitarian operations. These operations require all participating national units to operate in cooperation with each other, other government departments (OGDs), non-government organizations (NGOs), private venture organizations (PVOs), emergency medical personnel (EMP) and first responders. To operate effectively commanders and coordinators require a common view of the operational area that is both timely and accurate. Supporting C3 systems need to pass information within and across national, organizational and language boundaries. Moreover, C3 information must be provided to the strategic levels of command including national organizations. Additionally, NATO forces must interact with non-NATO nations, non-governmental bodies, and international and national aid organizations. The focus of this interoperability effort was inter-unit, inter-agency and international sharing of:

- Situational awareness;
- Orders, plans, and intentions; and
- Capabilities and status of friendly and hostile forces.

The NATO Military Committee issued a statement of the military requirement (MC245) in 1976 for '*interoperability between automated data systems.*' This visionary statement remains valid today. MC245 led to the Supreme Headquarters Allied Powers Europe (SHAPE) initiated the Army Tactical Command and Control Information System ATCCIS (ATCCIS) programme (circa 1980). The ATCCIS objective was (and still remains) a demonstrated level of C2 system interoperability based technical standards agreed by Nations and prescribed by NATO. The programme set out to

identify the minimum set of specifications, when integrated into a C2 system that would deliver interoperability between heterogeneous national C2 systems during coalition operations. In October 2001, the ATCCIS and MIP nations decided to merge in order to prevent divergence, to save resources, and to foster interoperability in a broader arena.

5.3.4 Multilateral Interoperability Programme

A parallel programme, the Multilateral Interoperability Programme (MIP), was established by the Project Managers of the Army Command and Control Information Systems (C2IS) of Canada, France, Germany, Italy, the United Kingdom and the United States of America in April 1998 in Calgary, Canada, to replace and enhance two previous programmes: BIP (Battlefield Interoperability Programme) and QIP (Quadrilateral Interoperability Programme).

Follow-on the merger of the MIP and ATCCIS in 2002, MIP continued the evolution of the LC2IEDM. The focus of this evolution was an expansion of its core capability to maritime, air and joint operations. This is being followed by the integration of collaborative planning elements of joint and coalition operations. It is the latest rendition of this effort, the JC3IEDM V3.1c (STANAG 5525) which forms the foundation of this specification.

Additional information on the ATCCIS and MIP programmes can be found at the MIP web site: www.mip-site.org.

5.3.5 The Remaining Challenges

After repeated demonstrations of data interoperability MIP systems are only just beginning deployment. Many of the national implementations are proving to be rigid and brittle, as is the business process for the development and extension of the underlying business rules. The business rules are frequently encoded in proprietary command and control (C2) applications. These rules have been developed and agreed to by the core MIP implementers and require constant interaction at the business and technical levels to address even the smallest change. Additionally, the approach has demonstrated a steep learning curve for new entrants to the community (community of interest) and a scarcity of subject matter experts. The MIP has recognized that it must re-factor its processes, products and deployed capability concepts without losing the stable and foundational data standardization work it has done. This refactoring is intended to generalize the MIP solution such that the exchange mechanism and the semantics are decoupled. The MIP desires to make it easier for partners to implement alternative architecture to meet national (organizational) needs. The MIP has also recognized the need to adopt open architectural framework standards and approaches to system of system engineering, development and testing. These changes are expected to help address the challenges that are hindering the exploitation of the JC3IEDM and the desire of the community to expand its use. Accordingly, there is a strategic collaboration implicit in the OMG leveraging the MIP COI work and the MIP leveraging the OMG emerging open standards for information sharing and management. The SOPES specification supports:

- **New Adopters:** Establishing process and technical elements, to assure that new adopters are successful in the integration of the JC3IEDM into new and legacy C2 environments.
- **Communities of Interest (CoI):** Providing the elements needed to position the JC3IEDM at the foundation of community of interest semantics development in the C3 domain.
- **Information Assurance:** Providing the ability to extend the JC3IEDM to address underlying information security challenges faced by the C3 Community.
- **Expansion of the Community:** Enabling the use of the JC3IEDM by organizations other than the military (e.g., OGDs, NGOs, PVOs, and First Responders) and using the JC3IEDM to form a bridge between military organizations and the OGDs, NGOs, PVOs, and First Responders.
- **Expansion of use to ECM Operations:** Enable the use of the JC3IEDM in a wide range operations including: crisis response operations, sustainment operations, humanitarian aid and reconstruction.

The challenge now entails the integration of military, government and civilian information into a shared operational picture while assuring the proper use and protection of that information. The balancing of national, organizational and agency needs for information to most effectively fulfill their individual roles. will require the integration of information from an expanding number of community ontologies and semantics. The SOPES IEDM is seeking to establish an architecture based approach to accomplishing this integration in the domains of situational awareness and planning. It is hoped that the SOPES IEDM will also establish a foundation for greater levels of semantic interoperability in the future.

5.4 Ontology

Within the context of data, information and knowledge management, **ontology** is defined as an information model describing a set of concepts within a domain of interest and the relationships between those concepts. This specification describes a set of information exchange concepts for ECM situational awareness, coordinated response and collaborative planning. The IEDM describes a set of data and/or information patterns based on JC3IEDM-compliant data store transactions and information elements (i.e., data entities).

The Information patterns (Chapter 10 and 11) describe:

- Individual information elements.
- Classes: sets, collections, or types of objects.
- Attributes: properties, features, characteristics, or parameters.
- Relations: ways that objects can be related to one another, for data storage and in the construction of semantics (meaningful data object: this specification).
- Events (watch points): changes to the data environment (e.g., attributes or relations) that trigger an exchange of information.

The specification describes set of policies for constructing and interpreting information exchanges using reusable architectural components (information building blocks) aligned directly to commonly used architecture frameworks.

5.5 Coverage of the JC3IEDM

As stated, the specification describes a set of information patterns. The patterns enclose all information elements (tables) comprising the JC3IEDM; providing 100% coverage of the version 3.1c tables. This does not infer that the specification describes all possible information patterns available from the JC3IEDM. The specification does provide a core set of transactional patterns, upon which, CoIs can quickly establish information sharing capability. It also stipulates that the specification is extensible: existing patterns can be extended or combined to create patterns or specific to a CoI's requirements.

5.6 Platform Specific Models

5.6.1 MIP Transactional Middleware and Community Semantics

The current MIP Common Interface (MCI) specification describes both the information exchange protocol and explicit nation-to-nation data replication data units. MIP partner nations implement system-specific architectures with unique internal services and build a national MCI point-of-presence for exchanges with other nations. MIP has defined some relatively coarse exchange and update message semantics, specifically Operational Information Groups (OIG) (e.g., Blue Situation, Red Situation). MIP has not defined a common internal middleware specification for system developers. This has made JC3IEDM education, adoption, implementation and testing more difficult in general and especially so for

organizations, agencies and projects not directly engaged with the MIP CoI technical community or directly involved in its internal testing program. Too often when communities are exposed to the JC3IEDM the large IDEF1X data model diagram falsely creates the impression that the JC3IEDM is monolithic. MIP has an extensive documentation which is full of operational examples that use only parts of the JC3IEDM, but they do not expose per se the logical semantic building blocks that would support message formulation or interpretation.

The MIP has recognized the need to correct the “monolithic” JC3IEDM assumption that potential users, program managers and implementers often initially express. A number of MIP efforts are underway to provide a broader and more modular set of useful technical artifacts supporting education, reference, and implementation purposes. They include recent efforts to incorporate model driven architecture concepts and methods and a UML PIM representation of the JC3IEDM. Additionally, various generated platform specific implementations, e.g., XML Schema and OWL/RDF, have been developed. A Software Development Kit (SDK) leveraging some of these products is being used to demonstrate JC3 SOA capabilities. The exemplar semantics presented in Section 8 are aligned with these efforts. In this context, SOPES provides a modular design pattern, a useful model, exposing how to compose the information sharing semantics of a shared operational picture exchange service.

The SOPES IEDM delivers a UML model describing the JC3IEDM-based semantic construction plans and a set of Java objects (PSM) (Annex E) that can persist, marshal and un-marshal XML instance documents that validate against a SOPES XSD (PSM) (Annex D) or the standard MIP Protocol Data Units (PDU). These PSMs can be used to deliver a JC3IEDM compliant Web Service.

5.6.2 Web Services

A **Web service** is defined by the World Wide Web Consortium (W3C) as "a software system designed to support interoperable machine-to-machine interaction over a network." Web services are frequently just Web APIs that can be accessed over a network, such as the Internet, and executed on a remote system hosting the requested services.

The W3C Web service definition encompasses many different systems, but in common usage the term refers to clients and servers that communicate using XML messages. Common in both the field and the terminology is the assumption that there is also a machine readable description of the data processing operations. The SOPES IEDM specifies a set of reusable information building blocks that combine to define an XML document set for the ECM community.

5.6.3 Semantic Web

The Semantic Web is an evolving extension of the World Wide Web in which web content (in this case a JC3IEDM compliant Data Store) can be expressed in a format that can be read and used by software agents, thus permitting them to find, share and integrate information more easily. At its core, the semantic web is a set of design principles, collaborative working groups, and a variety of enabling technologies. Some elements of the semantic web are expressed as prospective future possibilities that have yet to be implemented or realized. Other elements of the semantic web are expressed in formal specifications. Some of these include Resource Description Framework (RDF), a variety of data interchange formats (e.g., RDF/XML), and notations such as RDF Schema (RDFS) and the Web Ontology Language (OWL), all of which are intended to provide a formal description of concepts, terms, and relationships within a given knowledge domain.

The SOPES IEDM is a UML notation that can be used to directly generate XML XSD, OWL or RDF. This specific PSM was not generated for the specification but have been generated as part of the MIP model-driven architecture (MDA) working party proof-of-principal demonstrations (not currently a MIP standard product). As these products are certified and accredited by the MIP community, there is an opportunity to incorporate them into the SOPES and IEF initiatives through the OMG Request for Comment (RFC) Process; further expanding interoperability options.

5.6.4 Database Applications

NATO STANAG 5525 provides the logical and physical Entity Relationship Diagrams (ERD) in IDEF 1x notation and the Structured Query language (SQL) Data Definition language (DDL) for the implementation relational database application for the JC3IEDM. Prior to SOPES initiative, there was no modeling convention for the expression of a UML representation of the database and its component information elements. The SOPES IEDM Specification defines a standard set of transactions for the JC3IEDM physical schema. The SOPES defined transactions are expected to be useful, but do not represent all possible concepts supported by the JC3IEDM. Communities are free to extend the concepts to support community needs.

The SOPES IEDM is specified in a manner that effectively aligns with a Relational DBMS (RDBMS) implementation as illustrated in Figure 5.1 or any other architecture approach used for persistence of data such as:

- A set of interrelated objects as part of an OO application;
- A set of associated object in a memory based object Oriented Database (OODB) application;
- A set of specifications for an XML database; or
- Other PSM.

5.7 OMG's Information Exchange Framework

The Information Exchange Framework (IEF) initiative evolved out of the Shared Operational Picture Exchange Services (SOPES). While socializing the SOPES RFPs to the other OMG platform and domain task forces (PTFs and DTFs), it was recognized that a number of these groups were addressing similar requirements and facing many of the challenges of the ECM community; the need for flexible, agile and secure information sharing. The IEF is evolving as a platform (horizontal integration) versus a domain (vertical / industry specific capability) capability, as represented by SOPES. In the IEF context, the SOPES IEDM is a set of UML models representing policies for the exchange of ECM situational information. These models translate the constraints imposed by legislation, policies and memorandum of understanding into an executable set of rules which are enforceable by software enabled services.

The IEF working group identified that current architecture frameworks and architecture domain meta-models did not effectively address the specification of:

- Rules (policy) for the construction and processing of information or data aggregates;
- Rules for aligning community semantics with underlying information and data stores;
- Information transformation;
- Information guarding and filtering
- Information tagging and labeling to support policy based management; and
- Community information sharing agreements.

Annex A describes the SOPES IEDM modeling paradigm which supports key aspects of the objective policy-driven information exchange management. It also provides a direct alignment to architecture frameworks. Because of the C4I DTF's pedigree to the military domain, this specification focuses the alignment with frameworks such as:

- Department of Defence Architecture Framework (DODAF);
- Ministry of Defence Architecture Framework (MODAF);

- NATO Architecture Framework (NAF); and
- Department of National Defence Architecture Framework (DNDAF).

Annex A outlines the alignment between these modeling paradigms and DODAF. It illustrates the full life-cycle of information exchange policies, through to information services surrounding an operational data store.

In the context of DODAF a modeling view for information exchange policies has been developed in the course of the SOPES work and is referred to as the operational view three-seven (OV-37) as it links the Information Exchange Requirements (OV-3) and the Logical Data Model (OV-7). The objective of the new OV-37 is to address a gap in current architecture frameworks by providing a specification for describing the build and processing plans for the aggregation of community semantics from the underlying information and data stores. The OV37 provides a meta-model for the SOPES semantic specifications.

It is anticipated that concepts aligned with the OV-37 will be integrated into the UML Profile for DODAF and MODAF (UPDM 2.0). The RFP for the UPDM 2.0 will be issued with the adoption of the UPDM 1.0 in June 2009. The requirements, concepts and modeling profile underpinning the OV-37 and SOPES IEDM modeling profile have been accepted for the UPDM 2.0 RFP.

5.8 Design Rational and Principles

5.8.1 Rationale for the JC3IEDM as a Normative Data Model

The rationale for the SOPES IEDM design followed these guiding principles:

- Multi-partner, multi-agency and coalition operations require an increased capacity to share situational awareness information and support collaborative response and planning. This applies to a wide number of operational domains, including military coalition operations, homeland security, public safety, maritime security, boarder security, crisis response, humanitarian aid, aid to civil power, support operations and reconstruction operations.
- The JC3IEDM provides a rich vocabulary for crisis response operations enabling response coordination, command and control, situational awareness and collaborative planning.
- JC3IEDM multinational military C2 information sharing interface provides a standard for exchanging ECM information with military partners.
- The fifteen-year development, testing and demonstration history provides lesson learned for the community.
- JC3IEDM represents the consensus of 27 nations, all involved in the ECM community. More than two dozen national and commercial systems have been developed to the MIP standards.
- In May 2007 JC3IEDM was ratified by NATO nations as STANAG 5525.

These facts suggested that the JC3IEDM could form a cornerstone for the SOPES initiative and the C4I contribution to the IEF initiative. The submission of an earlier version of the JC3IEDM by NATO NC3A () and interest within the US Department of Defense further strengthened the C4I DTF's decision to ratify this decision.

5.8.2 Guiding Principles

The modeling approach adopted for the team was developed using the following principles:

- The PIM must provide a set of architectural components aligned to one or more enterprise architecture (EA) frameworks such as DODAF or MODAF.

- The PIM would support a model driven architecture (MDA) process.
- The approach and PIM would demonstrate extensibility, flexibility and agility.
- The approach would provide demonstrate traceability and audit-ability.
- The approach and PIM would accommodate elements that enable information security.
- The PIM would provide a set of reusable information building (patterns) that, when combined, can be used to build community specified semantics.
- The approach would provide communities can use selected building blocks without being forced to adopt the entire JC3IEDM.
- The PIM would specify a set of policies that protect the semantic, referential and data integrity of the JC3IEDM.

The modeling profile outlined in Annex A is supported by existing UML tools and demonstrates a flexible structure readily adapted to future versions of the JC3IEDM. Importantly, it allows for the addition of Security and User driven extensions.

5.8.3 General Design Principles

This SOPES IEDM specification uses the following design principles that support the domain needs and design rationale described above.

UML. The specification presents the information modeling profile (Annex B) used to model the SOPES PIM; representing a set or transactional semantics for the JC3IEDM. UML was adopted because it is easy to understand, provides a nearly universally accepted graphical representation; wide modeling tool support; and directly aligns with enterprise architecture frameworks through MOF, CWM and UPDM.

Model Driven Architecture. MDA provides a framework for translating the SOPES IEDM platform independent model (PIM) into varying platform specific models (PSM), including: XML, C++ Classes, Java Classes, and executable policy languages. The PIM is architected in a manner that facilitates the application of MDA transformations.

Extensibility. The SOPES IEDM PIM is structured in a manner that facilitates the extension of the core semantics of a community by limiting the specification to a set of transactional patterns; leaving the specification of the message semantic to the community adopting this specification. The adoption of UML allows communities to add security (filters, constraints, etc.) and transformations to enable communities to refine the specification while maintaining JC3IEDM integrity.

5.8.4 PIM Development

The PIM has been developed using the following validation process:

- Draft design proposal
- Multiple releases of the Design Proposal to the Stakeholder Community
- OMG Review team:
 - Mitre
 - Raytheon
 - Boeing

- Thales
- BAE
- Naval Undersea Warfare Center
- Others
- Ongoing MIP Community Consultation (27 national teams are invited to comment on the specification)
- Selected US DOD Stakeholders, including:
 - US Joint Forces Command, J8
 - OSD NII
 - ODS AS&C
 - US Navy, Naval Undersea Warfare Center
 - US Army, CIO G6
- Discuss the design or design change, come to quick agreement, make recommendation on changing existing model baseline
- Update the JC3IEDM Semantic Metamodel
- Update the Constraints
- Identify side effects that need to be updated
- Create a simple model test to make sure it works
- Generate RFP documentation from the models

Time to Market. Given the demand for information interoperability, and the expressed desire to adopt, implement and deploy JC3IEDM based on an open standards specification, it is important to adopt version 1 of the SOPES Specification quickly, to gain practical feedback on the standard and to promote commercial implementations.

5.9 Underlying Methodology

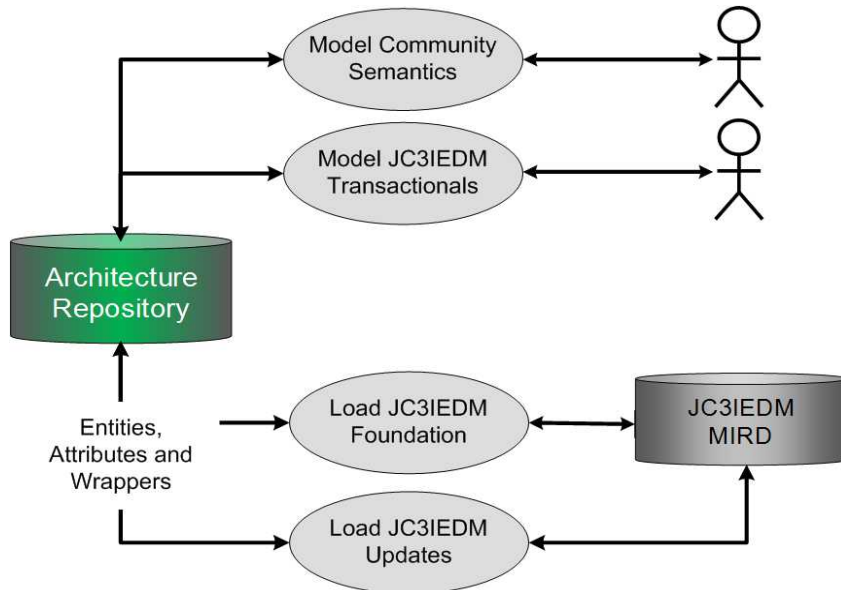


Figure 5.2 -

The process by which the team extracted the core element of the JC3IEDM and developed the transactional and semantic models is conceptually illustrated in Figure 5.2. The MIP Information Resource Dictionary (MIRD) (the JC3IEDM meta-model) was mined using several scripts and loaded into the modeling tool environment. These activities pre-loaded the foundation classes upon which the transactional and semantic models could be developed.

The modeling of the transactions was comprised of two parts. The first was the capture of the referential links imposed by the JC3IEDM Logical and Physical Schemas. These relationships form the first level of transactional and assure the SOPES ontology maps directly to the underlying data structures. They also define the semantically complete transactions to a data store; in this case the JC3IEDM. The second step in the modeling process was the development of the Transactionals, which provide complete, shared and consistent meaning when exchanged in a COI semantic (e.g., between two JC3IEDM compliant applications). Meaning, in the case of two applications with JC3IEDM internal DBs, a transactional constructed from available data in one application and received by the other would result in the same definitions loading data into the receiving data base in the same way as it was found in the originating database.

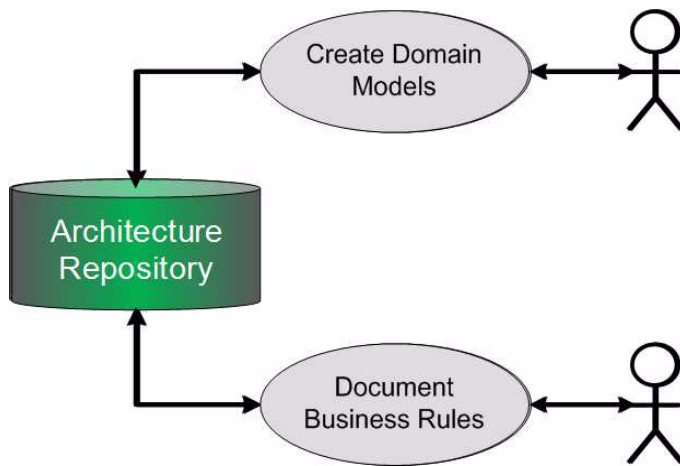


Figure 5.3 -

Figure 5.3 illustrates conceptually the development of key elements of the Transactional models; that is the business rules for the construction of a transactional model and the data domain rules that affect their construction. For the development of this specification, the generation of OCL describing the constructions plans and domain rules was a manual process.

There also exists a detailed set of OCL for the wrapper classes that describes the domain business rules for the JC3IEDM as specified by the MIP UML PIM representation for the JC3IEDM. This OCL does not form a normative part of this specification, but has significant value to communities requiring interoperability with MIP enabled organizations. Additional information in the JC3IEDM UML PIM and OCL can be found at (Annex B).

The process was used to develop a set of Transactionals for each of the subject areas (Chapter 10 - Transactionals) defined in the SOPES IEDM. The specification also provides a set of exemplar semantics (Chapter 11), which binds the transactional for the MIP CoI. These semantic models bind a complete expression of information between members of the MIP CoI. These semantics assure that the construction of the inter-application messages is compliant to the structures of the underlying datastore (JC3IEDM V3.1).

The Transactionals developed through this process fully capture:

- JC3IEDM Data Integrity,
- JC3IEDM Referential Integrity, and
- JC3IEDM Business Rules:
 - Construction Plans, and
 - Domain Rules.

The semantics and business rules are based on the information requirements specified by the MIP Community and coalition operations.

5.10 Transactionals

The transactional patterns form the core of this specification. Database analysts and designers will be familiar with the underlying concept which evolved from database transactions and transaction processing. A transactional divides the information domain into individual indivisible operations that reflect the underlying constructs of a data store (e.g., entity specification, domains and referential integrity).

The SOPES IEDM uses UML models to define mandatory and optional processes which need to occur during:

- The gathering and construction of a complete, meaningful dataset (semantic) as specified by a community of interest or Operational need line (e.g., DODAF, MODAF or DNDAF Operational View 2).
- The parsing, marshalling, interpreting and processing of datasets received from another entities, objects, systems or applications.

The SOPES information patterns define the production, processing and integration rules for a set of information constructs in 16 key packages:

- Actions
- Capabilities
- Context
- Control Features
- Facilities
- Geographical Features
- Holdings
- Locations
- Materiel
- Meteorological Features
- Object Item
- Object Type
- Organization
- Personnel
- Plans and Orders
- Reporting

5.11 Alignment to other Standards Efforts

5.11.1 Alignment to MIP

Modeling JC3IEDM transactions as UML models provides the community with the opportunity to express MIP operational policy and rules as part of a system of systems (SOS) architecture. This effectively extracts the MIP exchange policies and rules, from the current Data Exchange Mechanism (DEM), and places them in an implementation independent representation opening the opportunity for architecture-centered implementations using other standards-compliant mechanisms (e.g., SOA, Web Services and DDS).

To achieve interoperability between its elements, MIP relies on a strong definition of the operational concepts. The MIP Operational Working Group (OWG) gathers Subject Matter Experts (SMEs) from the core nations to define the Information Exchange Requirements (IERS), or semantics, within and between operational elements.

The JC3IEDM data model, its business rules, constraints, and documentation describe an ontology commitment for the MIP community. Recent work to formalize the JC3IEDM model and its rules and constraints in UML and Object Constraint Language (OCL) provide new artifacts, tools and techniques for implementing services with assured semantic and referential integrity. The SOPES specification leverages the MIP UML and OCL as exemplars for the broader community, and formalizes patterns for more generalized sets of constructs.

These new artifacts will likely prove extremely useful within the core MIP community, but there remains a need for yet additional products/standards to ease the transfer of knowledge to new adopters. SOPES makes this effort and builds on the JC3IEDM specifying construction plans for each “transactional.” SOPES is expressed in a set of UML models, which form the PIM illustrated in Chapter 11. These models are further expressed as XML and JAVA PSMs provided in Annex D and Annex E respectively.

5.11.2 Alignment to DODAF, MODAF, NAF and DNDAF

The SOPES IEDM specification describes a set of architectural components that users, integrators and developers can integrate into the enterprise, SOS and System architectures. Figure 5.4 illustrates how this applies to a Department of Defence Architecture Framework (DODAF). Similar strategies could be used by other architectural approaches such as MODAF, NAF and DNDAF.

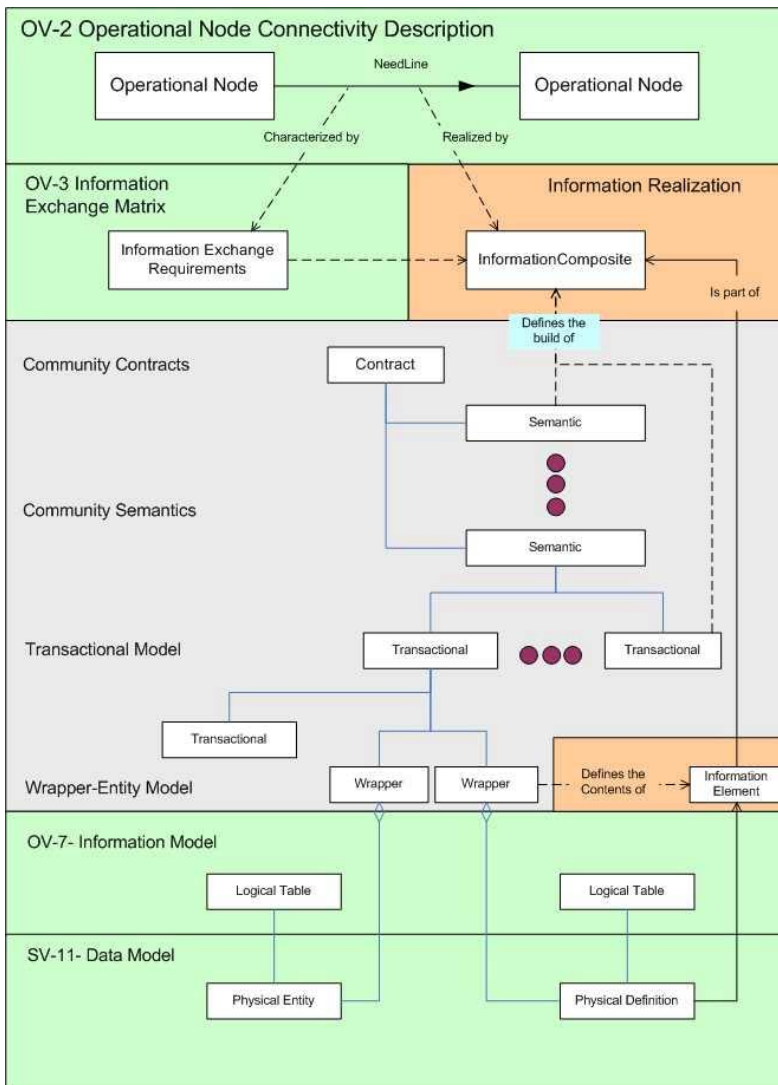


Figure 5.4 – Alignment to DODAF, MODAF, and UPDM

5.12 UPDM

The modeling approach used for the development of the PIM has been presented to the UPDM team and is under consideration for inclusion in the UPDM 2.0. It was premature to consider SOPES modeling conventions for UPDM 1.0 as it was seeking to adhere strictly to the DODAF 1.5 and MODAF 1.2 specifications. Extensions such as that proposed by the SOPES and IEF community will be addressed with the release of the UPDM 2.0 RFP.

The relationship between the SOPES Modeling Convention and the UPDM is described in some detail in Annex A to this specification.

5.13 Statement of Proof of Concept

5.13.1 Operational Prototype

The Department of National Defence (DND), Enterprise Information Security Environment (EISE) is currently developing an operational prototype using the Draft SOPES IEDM Specification to:

1. Provide an architected set of data patterns for the aggregation of data maintained as part operational databases instantiating the MIP JC3IEDM Schema;
2. As a basis for selectively aggregating data based on community approved semantics;
3. As a foundation for dynamically altering community semantics and exchange agreement in order to address changes in the operational situation requiring the changes in information release policy; and
4. As the basis for determining and assessing the sensitivity and risks associated with the release of additional operational data.

The goal of the EISE project is to demonstrate:

- The use of architecture as an enabler of an operational decision aid (threat risk assessment);
- The use of architecture to manage operational communities of Interest (CoI)
- The use of architecture-driven, policy-based systems to deliver centrally managed interoperability.
- The use of architecture-driven, policy-based solutions to provide enhanced information protection, including controlled aggregation and release-ability of information.
- The use of architecture to develop and manage information sharing and information protection policies.
- The provision of objective evidence for C&A through Architecture.

Figure 5.5 illustrates the operational context for the demonstration. The JC3IEDM Schema forms the data environment for each node, with the SOPES IEDM forming the transactional rules underpinning community information exchange agreements.

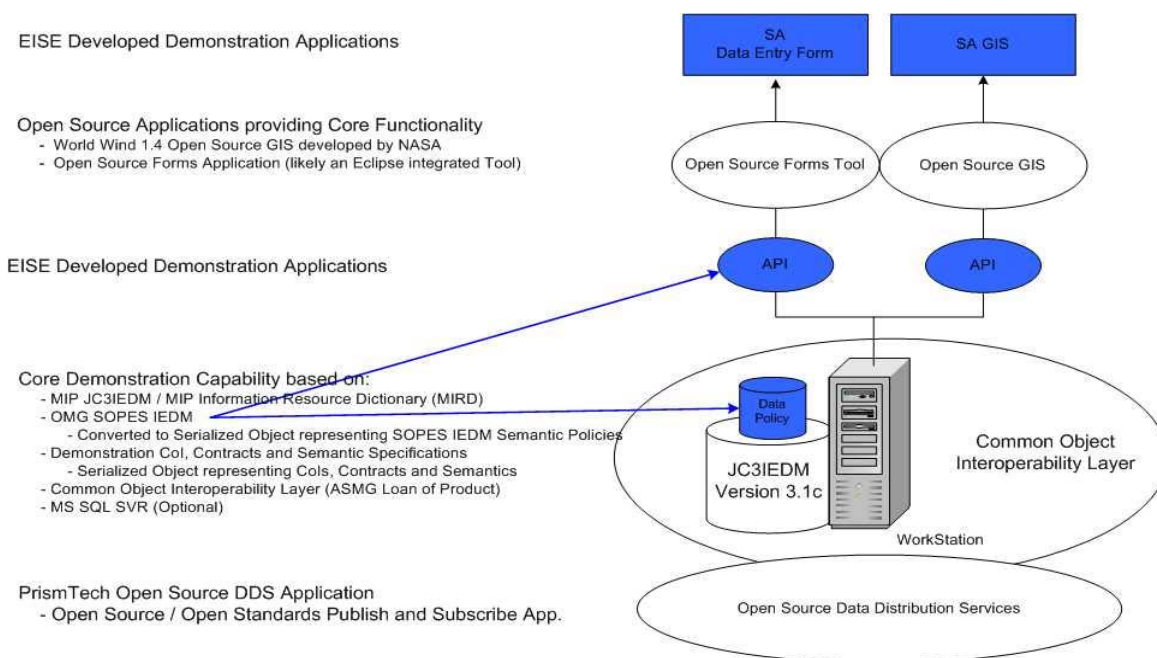


Figure 5.5 - Initial Proof of Concept Overview

Figure 5.6 illustrates where the rules expressed by the SOPES models are enforced. For the EISE demonstration SOPES IEDM metadata will be transformed in to a meta-object model (MOM) that reflect the information exchange policies (rules) to be enforced at each of the operational nodes. The Common Object Interoperability Layer (COIL) ingests the MOM and uses its underlying rules to aggregate JC3EDM information for use or dissemination; and marshal received information for storage in an instantiated JC3EDM data store. The MOM forms a runtime instantiation of the SOPES IEDM define rules integrated into community contracts and semantics (see Chapter 11 and Annex A).

The demonstration will exchange information between nodes in accordance with the Optimized XSD (see Annex D2) and MIP PDUs. Community contracts will be enforced using the publish and subscribe protocols specified for Data Distribution Service for Real-time Systems (DDS).

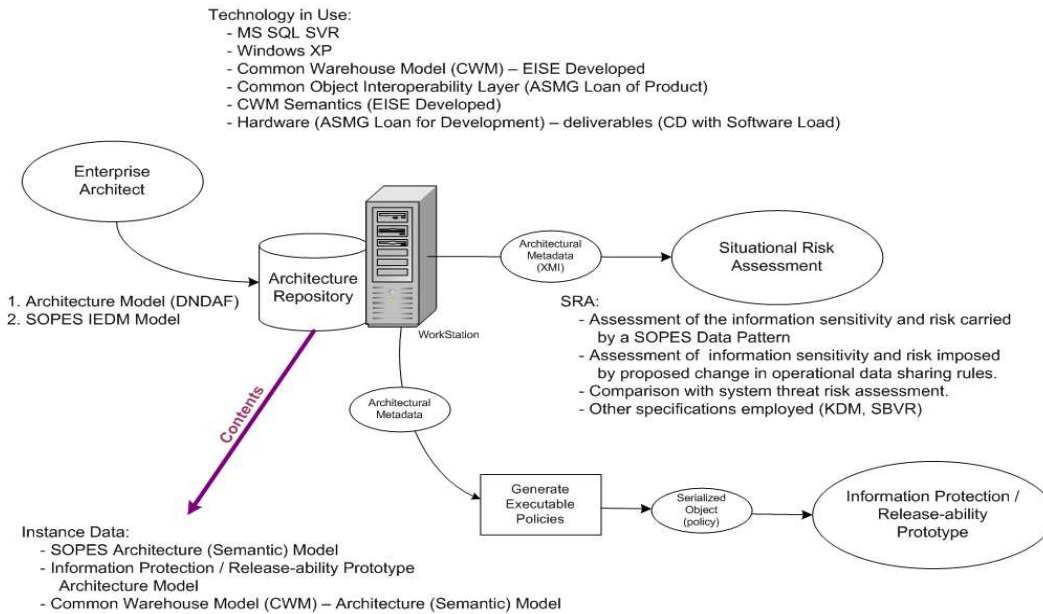


Figure 5.6 - Policy Management Demonstration with SRA

In addition to using the SOPES IEDM to specify the a consistent set of transactional rules for an operational nodes' information environment, the data patterns will be used: to underpin a Threat Risk Assessment (TRA) and Situational Risk Assessment (SRA) for the community exchange agreements; and enable the controlled modification of exchange policies (rules) for the scenario. The SRA will be used to provide the Command Team a decision aid to assess the risks associated with changes to information exchange policy. Figure 5.6 illustrates the components of a policy management being developed for the demonstration.

The demonstration of this Proof-of-Concepts is scheduled for December 2009.

5.13.2 SOPES Testing

The SOPES IEDM has already been implemented as a test system to validate the transaction integrity of the IEDM against MIP Test Data. Figure 5.7 illustrates the SOPES IEDM test environment.

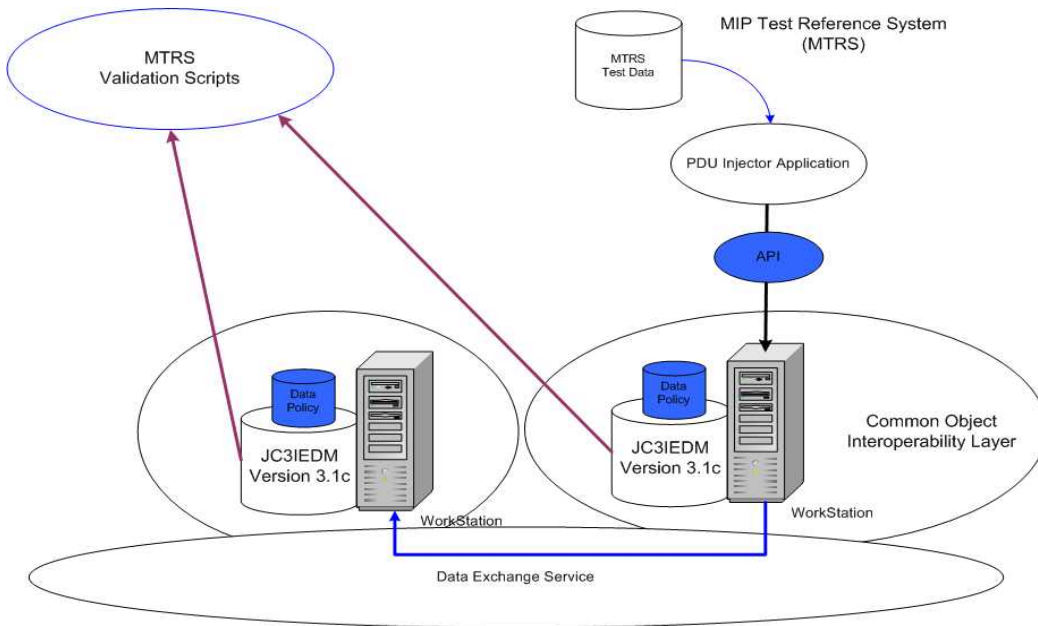


Figure 5.7 - MIP Test Environment

6 Shared Operational Picture Exchange Services

6.1 Objectives

The Shared Operational Picture Exchange Services (SOPES) represents an OMG C4I DTF initiative to develop a set of open standards for a generic architecture, interfaces and technologies for and information exchange framework for coalition, partner, or multi-agency operations. These standards will define a set of services needed to establish an information sharing environment that can be rapidly adapted to mission requirements; without the need for software modification. Much of this effort will be reflected in the MARS Information Exchange Framework, which subsumed much for the original SOPES scope and objectives.

As with of domain initiative, SOPES will seek to reduce or eliminate duplication by integrating (through the OMG Request for Comment [RFC] process) publicly or community accepted specifications and open standards issued by other standards bodies (e.g., Open Group, W3C, OGC, etc.) defining related information semantics, object and data models, services and interfaces.

6.2 Rationale

Within the sphere of information interoperability, the C4I DTF (Domain Task Force) focuses on the development of specifications for systems, applications and services, which deliver interoperable capability for crisis response, disaster relief, emergency or military operations. Information Interoperability in the areas of situational awareness and collaborative planning crosses multiple domains and communities of interest. Many of the underlying attributes and capabilities are identified by a large number of organizations, agencies and communities of interest. Typically, these targeted interoperability groups are defined by the military as other government departments, non-government organizations and private volunteer organizations. The DTF is also considers emergency management organizations, first responders, and public health agencies in this grouping.

The C4I DTF is seeking to adopt a multi-use approach: develop a series of specifications that are adaptable to a wide range of uses in the ECM domain. The DTF seeks out public or community accepted specifications that may have been developed for a single purpose and adapt these specifications to the broader domain. In a number of cases, these specifications can be applied directly or with minor enhancements; leading to immediate increased resolution, accuracy, or performance in ECM capability.

The JC3IEDM represents a community specification whose generic form meets the criteria identified above. The JC3IEDM offers more than fifteen years of dedicated development, testing and demonstrations; and currently has NATO ratification (STANAG 5525) as well As the acceptance by more than twenty-five nations. The capabilities of the JC3IEDM provide the opportunity for increased interoperability and information sharing between the NGOs, OGDs, PVOs and the military during international and domestic operations.

6.3 Problem Space for Shared Operational Picture

Numerous events (e.g., 9-11 and Katrina) have reinforced the longstanding requirement to enhance the ability of a coalition, government and civil respondents to quickly, efficiently, safely, and confidently exchange operational information during emergency and crisis response operations. SOPES and IEF are OMG initiatives to facilitate interoperability and the sharing of information through standardization in key architectural components:

- Shared language, or ontology, for structured information underlying a common Operational Picture;

- Shared process for specifying the policies, doctrine and rules governing the sharing of sensitive and time critical information;
- Mechanism to enforce the policy governing the sharing information;
- Framework for the management, accreditation and dissemination of information sharing policies, doctrine and rules;
- Framework for increased flexibility and agility in the exchange of situational and planning information;
- Framework for enhancing information security; and
- Interfaces for related specifications and standards.

Successful implementation of SOPES/IEF requires more than successful transformation/exchange of data between heterogeneous organizations and systems. These exchanges must be conducted in a manner that delivers quality information in a secure and trusted manner to all participants in the operation. Each participant needs to be provided with information that provides a shared appreciation of the operational situation as well as those information elements required to perform his/ her specific role. Information quality is based on the following characteristics:

- Accurate: semantics to accurately convey the perceived situation.
- Relevant: information tailored to specific requirements of the mission, role, task or situation at hand.
- Timeliness: information flow required to support key processes, including decision making.
- Usable: information presented in a common, easily understood format.
- Complete: information that provides all necessary (or available) information.
- Brief: information tailored to the level-of-detail required.
- Secure: selectively share information in accordance with the credentials of the recipient.
- Trust: users trust the quality and content of the information provided.

This means that from requirements through operations, each exchange of information between participants is fully understood and auditable. It is the challenges in the areas of Security, Information Assurance, and Quality of Service that this submission is beginning to address. The SOPES IEDM will describe a common set of information building blocks for the JC3IEDM that will facilitate the development of community semantics while maintaining the integrity of an underlying JC3IEDM data structure. This standard usage model is not available through current MIP JC3IEDM specifications.

6.4 SOPES Information Domain

6.4.1 Common Core

The SOPES IEDM will support the development of vendor independent technologies for information exchange between heterogeneous military and civil organizations and systems; allowing for the development of cost effective, commercial off the shelf, and open source capability, and the expansion of interoperability during a wide array of operations. The information transformation/mappings between systems will be exposed to organizations – promoting greater levels of trust.

The targeted information coverage for the SOPES IEDM RFP represents a commonly required core set of concepts and semantics enabling basic situation, decision and response information sharing.

This includes information regarding:

- Land, maritime, air, and space data.
- Planning data.
- Intelligence data.
- Current, planned, and projected location and status of organizations, people, facilities, features, and material.
- Political, diplomatic, and social information, including information.
- Geospatial information in various formats.
- Environmental factors such as the effects of weather on terrain, climate data and severe weather, traffic-ability and soil conditions, coasts, river, urban land usage, urban transportation, urban utilities, Lines of Communication.
- Actions, planned or events of interest.

6.4.2 Enabling Community of Interest Exchanges

Communities of interest (COI) are generally considered a collaborating group of users that must exchange information in pursuit of their shared domain goals, interests, missions, or business processes and who therefore must have shared vocabulary for the information they exchange. SOPES IEDM will provide a shared vocabulary and supporting business rules for ECM information exchange. Figure 6.1 shows conceptually (moving from the core outwards) how a JC3IEDM provided common core is used to establish the SOPES IEDM foundation classes (Wrappers) which in turn are used to define the re-usable information patterns (Transactional). Community semantics, the payload for community information exchanges, are composed of Transactionals. Thus, each community (domain) can define appropriate exchanges building on the SOPES IEDM (in Figure 6.1 there are notionally four messages defined – two “blue” and two “red” for application domains 1 and 2 respectively). Note that, while the figure suggests that domain 1 and 2 generally are using different types of information, there are Transactionals and Wrappers that are shared indicating that these are areas where the two domains could be sharing information.

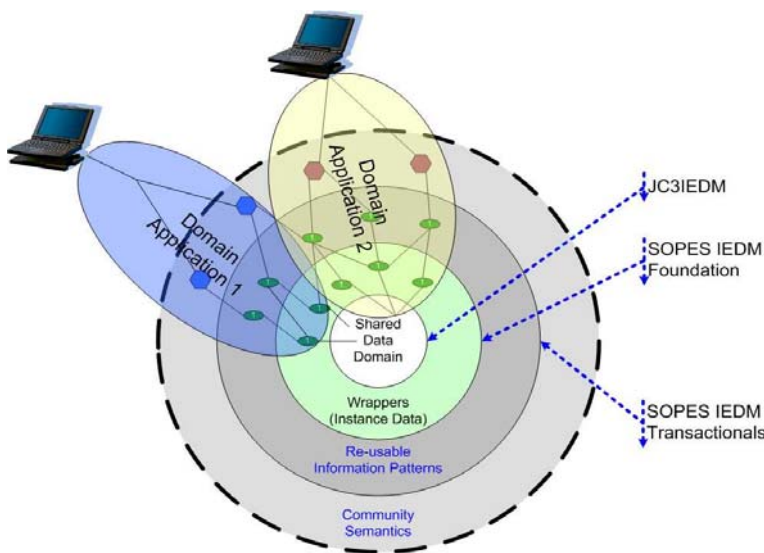


Figure 6.1 - SOPES Core For COI Exchanges

6.5 Information Exchange Framework

6.5.1 Background

Since the initiation of the SOPES initiative in 2002, there has been an evolution in the OMG's understanding of the target environment for the SOPES information sharing capability. While the SOPES concept was being socialized to the OMG platform and domain task forces (MARS, E-Government, Financial, Health, Finance, etc.) it was identified that many of the Taskforces (TFs) have similar information sharing requirements: timely, accurate, relevant, secure, and adaptable. Based on this realization it was agreed that the overall initiative was better suited to a Platform Taskforce and their focus on horizontal integration standards. It was decided that several elements of the SOPES effort were transferred to the Middleware and Related Services (MARS) Platform Task Force (PTF) as part of the Information Exchange Framework (IEF). The primary component retained by the C4I DTF is the Information Exchange Data Model (IEDM). The SOPES elements transferred to the IEF initiative include:

- Shared process for specifying the policies, doctrine and rules governing the sharing of sensitive and time critical information.
- Mechanism to enforce doctrine and rules governing the sharing information.
- Framework for the management, accreditation and dissemination of information sharing policies, doctrine and rules.
- Interfaces for related specifications and standards (e.g., CORBA/IIOP, DDS, .Net, J2EE/EJB, and Web Services (XML/ SOAP/WSDL/UDDI, etc.)).

Where applicable, the SOPES initiative will defer activities to the MARS IEF working group. This will reduce duplication and broaden the use and adoption of the specification. The SOPES initiative will then focus on issues requirements specific to the dynamic realtime environments of C4I.

6.5.2 Objectives

The Object Management Group (OMG) Information Exchange Framework (IEF) is an initiative of government, academia, and industry to define a series of open standards and publicly accepted specifications for realizing information exchange services that are:

- visible and accessible;
- understandable and uniform (information represented so that users and applications can comprehend both its semantics and structure enabling proper interpretation and use);
- adaptable and managed (through formal policy mechanisms); and
- trusted and secure.

Information exchange services with these characteristics will enable:

- improved interoperability within and between organizations, systems and applications;
- stakeholders and users to better exploit available information resources;
- organizations to better design and manage these services and thus reduce information systems and technology life-cycle costs;
- organizations to meet in a consistent manner legislated requirements to manage and protect private, confidential and sensitive individual and aggregated information;
- increased flexibility, agility and adaptability in deployed information systems and service, and
- improved policy-driven information dissemination resulting in services that produce tailored and managed information.

The move to expose information services, on community and public networks, and the need to incorporate these services in a growing web of managed business processes has created a broad corresponding community movement to modeling, open specifications, open standards and open software. These practices are aimed at understanding business processes, improving capability delivery, reducing development time and testing, controlling life-cycle costs and protecting information assets in a hostile network environment. The OMG IEF initiative will meet these challenges by drawing on industry, government and academic experience with demonstrated open methods for achieving:

- Increased Interoperability;
- Vendor neutrality;
- Efficient use of existing resources;
- Greater use of automation;
- Greater use of model driven architectures;
- Greater flexibility and agility;
- Greater number of COTS options, provide more opportunities to optimize;
- Lower and more manageable risk;

- Increased robustness and durability;
- Improved system and application quality; and
- Increase available resources and skills.

6.5.3 Approach

The IEF working group has identified that current architecture frameworks and domain meta-models do not effectively capture essential aspects of an IEF policy and exchange specification ontology. In response the IEF working group has begun to define a policy-driven approach to information management and exchange services and to formalize the relationship between information exchange requirements and the associated semantics (i.e., message). This in turn entails a need to specify formal domain independent interoperability processes and enforcement mechanisms for:

- Rules (policy) for the construction and processing of information or data aggregates.
- Rules for aligning community semantics with underlying information and data stores.
- Information transformation.
- Information guarding and filtering.
- Information tagging and labeling to support policy based management.
- Community information sharing agreements.

In the course of the SOPES IEDM specification work, the formal association of information exchange requirements and exchange semantics was first addressed in an integrated manner with the development of a prototype DODAF operational view three-seven (OV-37) that links the Information Exchange Requirements (OV-3) and the Logical Data Model (OV-7). The objective of the OV-37 is to address a gap in current architecture frameworks by providing a specification for describing the build and processing plans for the aggregation of community semantics from the underlying information and data stores¹. The OV37 provides a meta-model for the SOPES semantic specifications.

Figure 6.2 identifies several of the key processes and services underpinning an IEF policy-based information sharing environment. In this IEF context, the SOPES IEDM is a set of UML models representing policies for the exchange of ECM situational information. These models translate the constraints imposed by legislation, policies and memorandum of understanding into an executable set of rules which are enforceable by software enabled services. These information models (/ontologies) and exchange policies are considered domain specific and in the case of SOPES, address the ECM Domain.

1. It is anticipated that concepts aligned with the OV-37 will be integrated into the UML Profile for DODAF and MODAF (UPDM 2.0). The RFP for the UPDM 2.0 will be issued with the adoption of the UPDM 1.0 in June 2009. The requirements, concepts and modeling profile underpinning the OV-37 and SOPES IEDM modeling profile have been accepted for the UPDM 2.0 RFP.

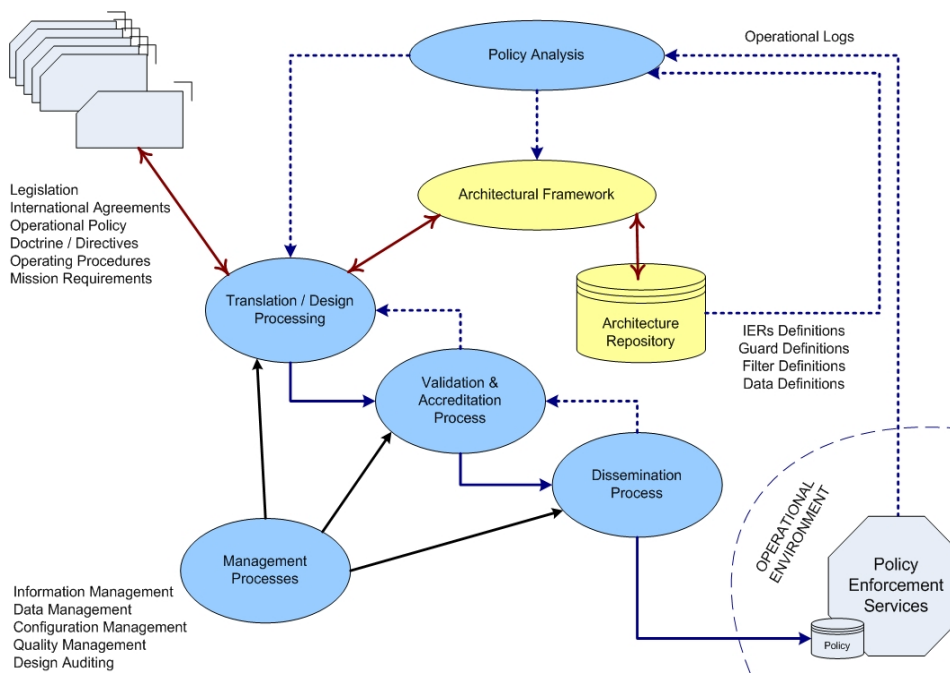


Figure 6.2 - IEF-Policy based Information Management

Annex A describes the SOPES IEDM modeling paradigm which supports key aspects of the objective policy-driven information exchange management. It also provides a direct alignment to architecture frameworks. Annex A outlines the alignment between these modeling paradigms and DODAF. It illustrates the full life-cycle of information exchange policies, through to information services surrounding an operational data store. Because of the C4I DTF’s pedigree to the military domain, this specification focuses the alignment with frameworks such as:

- Department of Defense Architecture Framework (DODAF)
- Ministry of Defence Architecture Framework (MODAF)
- NATO Architecture Framework (NAF)
- Department of National Defence Architecture Framework (DND AF)

6.6 The Future: SOPES IEDM

Over the last decade or more, a growing number of communities (e.g., military, crisis management, healthcare, finance, and government) have established task-forces to address the growing need for interoperability and the exponential growth of peer-to-peer interfaces. Almost universally, the target of these efforts is the sharing and exploitation of the volumes of information now generated during normal operations. The driver is the spiraling costs related to the interfaces and the ongoing challenges sharing information with and across organizational boundaries.

SOPES IEDM represents a formal publication of the shared semantics and business rules developed in a long standing, and successful, multinational command and control developer community - now standardized under NATO’s STANAG 5525. The Multilateral Interoperability Programme community efforts continue with a number of modernization efforts that both leverage the general work of the OMG (e.g., UML, IEF) and can be a source for future updates to the SOPES IEDM. These initiatives include:

- Realization of the JC3IEDM and its business rules as a UML/OCL PIM.
- Refactoring of the JC3IEDM PIM for improved generality, modularity and implementation.
- Generalization of the MIP Common Interface (MCI) to support a wider range of architecture paradigms (e.g., resource or service oriented architectures) and exchange mechanisms – an opportunity to adopt the IEF paradigm and emerging standard.
- Adoption of model driven architecture (MDA) tools and techniques for MIP internal processes (e.g., specification development, in service support of the product baseline) and public products and tools.
- Recasting MIP’s aggregate information exchange requirements as a collection of operational capabilities realized through defined modular exchange and processing services (including web services). The resulting collection of functionally specific capabilities can be selectively implemented or deployed as required. This is expected to expose a core set of commonly used multinational C3 services (e.g., task organization) that can be orchestrated to provide mission specific (i.e., ECM, Humanitarian Assistance/Disaster Relief (HADR), joint Fires, etc.).
- Development of formal MDA methods and tools to support business object/semantic specification and the generation of appropriate PSMs with associated exchange, persistence, discovery and collaboration services.
- Support for Community of Interest reuse of the JC3IEDM including generalization, extension and restriction of JC3IEDM business objects/semantics and business rules as well as formal model transformations to support application-level PSM tailoring for implementation.
- Exploration of general approaches to semantic and syntactic mediation to aid COI implementation, techniques for semantic search, policy-driven information management and dissemination, and shared services (e.g., symbology, test reference implementations, modeling and simulation).

7 Design Rationale

7.1 Design Overview

This specification maintains the JC3IEDM as the foundation of the SOPES IEDM semantics. Each transactional model, presented in Chapter 10, relates directly to data structures and business rules provided by the JC3IEDM; specified in the MIP documents referenced in Chapter 3. The foundation of the SOPES IEDM PIM comprises the <<Entity>> definitions derived from MIP Information Resource Dictionary (MIRD), the normative reference for metadata describing the JC3IEDM, and the foundation for this specification.

A Meta Object Facility (MOF) compliant process, using an XML Metadata Interchange (XMI) of SOPES IEDM metadata between UML modeling and architecture tools/utilities, enabled an MDA processing chain that transformed the SOPES IEDM PIM into selected SOPES PSM, specifically:

- SOPES XML Schema
- SOPES IEDM OCL specifications
- SOPES serialized JAVA Objects (used to test modeled constructs)

Additional SOPES PIM MDA transformation options include the following types of PSMs:

- NET Objects
- Java Object

7.2 Web Ontology Language (OWL).SOPES Design

7.2.1 Modeling Concept

The SOPES Modeling approach is described in Annex A to this specification, which describes the UML modeling profile and it links the UML Profile for DOAF and MODAF. It is expected that this profile will be developed as a separate Information Exchange Framework Specifications and integrated into later versions of the UPDM.

7.3 SOPES IEDM and MOF Model

7.3.1 An Overview of the MOF

The Meta Object Facility (MOF) is the OMG's adopted technology for defining metadata. *Metadata* is a general term for data that in some sense describes information. The information so described may be information represented in a computer system; for example, in the form of files, databases, running program instances, and so on. Alternatively, the information may be embodied in some system, with the metadata being a description of some aspect of the system such as a part of its design.

7.3.2 Meta Object Facility Model

The three main metadata modeling constructs provided by the MOF that are used in this specification are:

1. **Classes** that can have Attributes and Operations at both “object” and “class” level. Attributes have the obvious usage; that is, representation of metadata. Operations are provided to support meta-model specific functions on the metadata. Both Attributes and Operation Parameters may be defined as “ordered,” or as having structural constraints on their cardinality and uniqueness. Classes may have multiple inheritances from other Classes. Classes are used to specify the information constructs comprising the JC3IEDM Transactional Ontology.
2. **Associations** support binary links between Class “instances.” Each Association has two AssociationEnds that may specify “ordering” or “aggregation” semantics, and structural constraints on cardinality or uniqueness. When a Class is the type of an AssociationEnd, the Class may contain a Reference that allows navigability of the Association’s links from a Class “instance.”
3. **Packages** are collections of related Classes and Associations. Packages can be composed by importing other Packages or by inheriting from them. Packages can also be nested, though this provides a form of information hiding rather than reuse. In this specification, packages are primarily used to group transactionals into the information domains supported by the JC3IEDM.

Other significant MOF Model constructs are Data Types and Constraints. Data Types allow the use of non-object types for Parameters or Attributes. In the OMG MOF specification, these are data types or interface types.

Constraints are used to associate semantic restrictions with other elements in a MOF meta-model. This defines the well formed rules for the metadata described by a meta-model. Any language may be used to express Constraints, though there are obvious advantages in using a formal language like OCL. For this specification, OCL is used to express constraints in the models.

7.3.3 The Relationship between SOPES IEDM and MOF

The MOF has been adopted as OMG’s standard for representing meta-models. The SOPES IEDM meta-model has been designed to conform to this standard. This allows SOPES IEDM to use other OMG specifications that are dependent on the MOF. In particular, it allows the use of XMI to interchange warehouse metadata that is represented using the SOPES IEDM meta-model, and it allows the use of IDL (and other programming languages) for programmatic access to warehouse metadata based on the SOPES IEDM meta-model.

7.4 SOPES IEDM and UML

7.4.1 An Overview of UML

The Unified Modeling Language (UML) is a graphical language for modeling discrete systems. Although the UML is not necessarily tied to any particular application area or modeling process, its greatest applicability is in the area of object-oriented software design.

UML is the synthesis, or unification, of three preceding modeling languages that had previously dominated the field of object-oriented software development: The Booch (Grady Booch), OMT (James Rumbaugh), and OOSE (Ivar Jacobson) notational systems were combined together by their authors into the Unified Modeling Language, at Rational Software Corporation, in the 1994-1995 timeframe.

The UML definition was subsequently submitted by Rational and a number of other OMG member companies, as a proposal to the Object Management Group in September, 1997, in response to an OMG RFP (OA&DTF RFP-1), requesting a standard approach to object-oriented modeling. A team consisting of both its original authors and representatives from the various OMG submitters created the UML submission. The UML submission was subsequently

ratified by the OMG in November 1997. Today, UML, along with the Meta Object Facility and XML Meta Data Interchange specifications, serves as one of the cornerstones of the OMG metadata architecture (of which SOPES IEDM is a domain-specific extension).

The various modeling elements of UML support the specification of both static and behavioral aspects of discrete, object-oriented systems. UML static models include the definition of classes, their attributes, operations, and interfaces. Standard relationships between classes, such as inheritance/generalization, association, dependency, and containment can be specified under UML and are used in the construction of class diagrams. The behavioral semantics of the system being modeled can be specified using UML conventions for expressing time-ordered inter-object message sequencing (sequence diagrams) and spatially-oriented collaborations between instances (collaboration diagrams). Support for the specification of state-machines is also provided for detailed modeling of object internals. UML also supports object-oriented analysis and the modeling of external system behavior through use case diagrams. Finally, UML provides notations for specifying the packaging of a logical design into components and the deployment and allocation of those components to nodes in a distributed computing architecture.

The UML language is formally defined by a meta-model (or semantic model) that is itself defined recursively, using UML. This meta-circular definition enables the entire UML to be based on a small number of elementary terms.

7.4.2 The Relationship between SOPES IEDM and UML

A primary objective of the SOPES IEDM is to define a meta-model (or, equivalently, a “metadata model”) or a generic semantic model for the JC3IEDM. Thus, the SOPES IEDM meta-model defines formal rules for modeling core information (/transactional) semantics (i.e., content, structure and business rules) for a JC3IEDM information exchange. However, there is also a requirement for the SOPES IEDM meta-model to be expressed in MOF (and thus enabled for interchange via CORBA, XMI or other interfaces).

The SOPES IEDM meta-model includes an Object Model package, which is based on the UML meta-model. It consists of a version of the UML meta-model in which those aspects that are not relevant to JC3IEDM semantics have been removed.

The SOPES IEDM meta-model is effectively an extension of the UML-based Object Model. Any meta-class within SOPES IEDM ultimately (if not directly) inherits from some meta-class of the Object Model. For example, consider the SOPES IEDM Wrapper Package. The Wrapper meta-model defines a meta-class called “JC3-V3-1c_Entity” that represents any relational database table in the JC3IEDM. This meta-class derives from the Object Model meta-class “Class.” Similarly, the Relational meta-class “Column” derives from the Object Model meta-class “Attribute.” This formally establishes the semantic relationship between the relational concepts of Table and Column that it is well understood intuitively; that is, that a Table is “something” that has properties (or attributes) and serves as a template for a collection of “things;” that is, rows that all share that same set of properties but individually supply their own “values” of those properties. The semantic equivalent in UML is the notion of a Class and its Attributes, and this equivalence is established by defining Table as a specialization of the notion of Class, and Column as a specialization of Attribute.

The UML specification is also used in the following ways:

- The UML notation is used in the diagrammatic representations of the SOPES IEDM meta-model.
- Additional constraints on the SOPES IEDM meta-model are represented in Object Constraint Language (OCL), as defined in the UML specification.

7.5 The SOPES IEDM and XMI

7.5.1 An Overview of XMI

The purpose of XMI is to allow the interchange of models in a serialized form. Since the MOF is the OMG's adopted technology for representing metadata, it is natural that XMI focuses on the interchange of MOF metadata; that is, metadata conforming to a MOF meta-model. In fact, XMI is really a pair of parallel mappings: one between MOF meta-models and XML DTDs, and another between MOF metadata and XML documents.

XMI can be viewed as a common metadata interchange format that is independent of middleware technology. Any metadata repository or tool that can encode and decode XMI streams can exchange metadata with other repositories or tools with the same capability.

XMI provides a possible route for interchange of metadata with repositories whose meta-models are not MOF based. This interchange can be realized by specific mappings between an XMI document and the repository's native meta-model.

XMI is based on the W3C's Extensible Markup Language (XML), and has two major components:

The *XML DTD Production Rules* for producing XML Document Type Definitions (DTDs) for XMI encoded metadata. XMI DTDs serve as syntax specifications for XMI documents, and allow generic XML tools to be used to compose and validate XMI documents.

The *XML Document Production Rules* for encoding metadata into an XML compatible format. The production rules can be applied in reverse to decode XMI documents and reconstruct the metadata.

XMI supports the interchange of any kind of metadata that can be expressed using the MOF specification. It supports the encoding of metadata consisting of both complete models and model fragments, as well as tool-specific extension metadata. XMI has optional support for interchange of metadata in differential form, and for metadata interchange with tools that have incomplete understanding of the metadata.

7.5.2 The Relationship between SOPES IEDM and XMI

SOPES IEDM uses XMI as its interchange mechanism. This means that the full power and flexibility of XMI is available for interchanging both warehouse metadata and the SOPES IEDM meta-model itself. SOPES IEDM does not require any extensions to XMI. A standard DTD for the SOPES IEDM meta-model is generated using XMI's DTD Production Rules. A standard XML document for the SOPES IEDM meta-model is also generated using XMI's Document Production Rules, based on the MOF DTD.

7.6 Additional Design Considerations

7.6.1 Reuse of UML Concepts

The SOPES IEDM meta-model, or PIM, is based on the UML meta-model. Those aspects that are not relevant to the development of a semantic model have been removed. In essence, the entire SOPES IEDM Semantic model is based on UML Class Diagrams.

Many of the core UML object types and associations are reflected in the SOPES IEDM Object Model. Wherever appropriate, Object Model types are sub-typed to provide more specific object types in the SOPES IEDM meta-model, normally with additional attributes or associations. All SOPES IEDM object types are direct or indirect subtypes of appropriate Object Model types, and so inherit their attributes and associations.

This approach has many advantages. It allows the SOPES IEDM specification to capitalize on the substantial investment in developing and refining the UML meta-model. The general awareness of UML concepts should aid understanding of the SOPES IEDM specification and its base Object Model.

7.6.2 Modularity

The SOPES IEDM meta-model is split up into a set of packages. This aids comprehension of the meta-model by splitting it up into smaller units, and allows users and implementers to ignore packages that are not relevant to their needs.

7.6.3 Generic Model

Much attention has been taken to ensure that the SOPES IEDM meta-model has been made as generic as possible, and that only information that is shareable between different implementations has been included in transactional ontology. The exemplar semantic models described in Section 9 are specific to a community of interest, e.g., MIP.

7.7 Extensibility

The MIP defines the process for extending the JC3IEDM within the MIP context. SOPES is expected to follow that paradigm; which has proven successful over the years – migrating the multiple versions of Generic hub, to the LC2IEDM, to the C2IEDM to the JC3IEDM. The Foundation and transaction elements of the SOPES specification are tied to the JC3IEDM and would work in lock-step with this process.

MIP has also defined a process through which national entities could extend the capability of the model without affecting core interoperability; allowing national entities to address unique information sharing requirements. The SOPES foundation and transactional layers permit the same flexibility; provided the SOPES models and JC3IEDM extensions are aligned.

In addition, the use of UML notation allows SOPES to exploit the class methods to add greater flexibility in the specification regarding the business rules of information exchange. Annex A provides some examples of how methods can be used to extend the specification; a capability not currently provided in the JC3IEDM specifications.

7.7.1 Community Semantics

The SOPES IEDM Specification provides the basic building blocks (data patterns) for the construction community semantics that are consistent with the JC3IEDM logical and physical schema. This specification only provides examples of semantics consistent with MIP data exchange. These semantics can be extended using transformation, filtering, and safeguards as described in Annex A.

8 Usage Scenarios

8.1 Overview

This section describes some of the interoperability challenges faced by operational users; System integrators, developers, and vendors and outlines how the SOPES IEDM can address these challenges.

As stated, a design goal of SOPES IEDM is to present a re-usable set of design patterns for sharing a broad range of ECM information; while leveraging the ability of the JC3IEDM to integrate that information into a shared operational picture for situational awareness, response and collaborative planning. The SOPES IEDM provides a baseline situation status, response and planning information “ontology” that can be exploited by communities that must coordinate, collaborate, and or command and control as a part of their normal operations and processes.

The usage scenarios contained in this section are provided to demonstrate that this design goal is met.

In addition these usage scenarios illustrate several of the problem domains in which SOPES IEDM is applicable.

8.2 Users of JC3IEDM

SOPES IEDM is targeted at the following categories of users:

- Users / Operators,
- IM Architects,
- System integrators,
- Developers,
- Security Personnel, and
- Vendors.

The following table shows how SOPES IEDM benefits these various types of users.

User Category	Stage	Problem or Need	Required Capability	SOPES IEDM Delivers	
User / Operator	Operations	The ability precisely define information sharing agreements that support information exchanges needed within a community of interest	Common ontology and semantics that enable understanding of the information exchanged to support situational awareness and operational planning Shared understanding of the information processing business rules supporting the JC3IEDM Metadata management tools to customize and adapt the information sharing agreements as required by a community of interest Building blocks for the development of domain specific and CoI semantics.	Common, standardized, information patterns and policies for the JC3IEDM Leverages the inherent ability of the JC3IEDM to integrate C3 information for shared situational awareness and collaborative planning Extends the use of the JC3IEDM to a wider range of ECM communities	
IM Architect Enterprise Architects Operational Analysts	Operational Analysis	Specifying the CoI information and data requirements Specifying CoI information and data exchange requirements Specifying inter-CoI information and data exchange requirements Make shared/visible information understandable to external systems and services.	Community accepted Interface specification Data construction policies Business rules formalization Reusable architectural component aligned to architectural frameworks Reusable building blocks for the development of domain specific and CoI semantics. Common transactional ontology for situational awareness and operational planning Replaceable C3 Information sharing components	Provides a generic PIM for the specification of community collaboration and coordination semantics Provides a PIM for the integration of data underlying community semantics Shared architectural components that enforce C2 semantic Interoperability Globally usable set of transactional semantics for collaboration, command and control	

System Integrators	Definition, System Design, System Integration Integration Testing Certification and Accreditation	Make shared/visible information understandable to external systems and services. Reduce CoI information sharing cost and complexity by reducing the number of unique [i.e., 2(N-1)] peer-to-peer interfaces Reduce the variation in system interpretation of business rules Improve the quality of information shared in the areas of operational situational awareness and operational planning. Deliver enhanced levels of interoperability in system of systems environments Deliver increased information security in system of systems environments	Community accepted interface specification; 1 to N (i.e., standards-based) interface architecture Data construction policies Executable business rules Re-useable architectural component aligned to architectural frameworks Reuse-able building blocks for the development of domain specific and CoI semantics Common transactional ontology for situational awareness and operational planning Replaceable C3 Information sharing components	Provides a generic PIM for the specification of community collaboration and coordination semantics Provides a PIM for the integration of data underlying community semantics Shared architectural components to enforce C2 semantic Interoperability Globally usable set of transactional semantics for collaboration, command and control. Flexible distribution of information in a system-of-systems environment through the use of semantically complete data MDA support for multiple PSM Reusable, editable, and extensible SOPES IEDM metadata Community 1 to N interface architecture	
Information System Developers	Implementation	Development of CoI ontology and ontological commitments. Make shared/visible information understandable to external systems and services.	Third party, open-source and in-house applications integration through standard SOPES IEDM ontological models, business rules and metadata MDA application of the Ontological Models	Reusable, editable, and extensible metadata Reduction in the development of peer-to-peer interfaces Supports multiple PSMs	

Stakeholders	Life-cycle	Lack of interoperability in current systems Need for pan-agency information sharing and shared situational awareness Spiraling life-cycle costs Rigid brittle systems unable to adapt to changing operational requirements.	Shared semantics Ability to integrate datasets underlying community semantics Ability to provide a shared operational picture Commercial implementations and integrations Leverage open architecture patterns/frameworks	Multi-community approach the sharing and integration of information: Situational awareness Shared operational picture Collaborative planning Commercial off the shelf implementations and integrations Reduces life-cycle costs A path that leverages OMG standards and technologies	
Security Personnel	Certification and Accreditation	Need objective evidence and analysis that can support certification and accreditation of system or service information exchanges System behavior is hidden in code and is not readily apparent or understood – as a result trust is limited	Complete set of individually verifiable transactional ontology components. Required formal specifications and methods that characterize and scope system or service behavior	Formal models as a foundation of data patterns and for the development of guards, filters and security (e.g., labeling) rules Objective evidence that a specific set of design patterns were implemented for an information sharing agreement of CoI. Limit the use of the JC3IEDM to a specified set of transactions. An MDA process for defining executable systems and services	
Vendors	Interface Compliance	Need for a consistent and complete interface specification to deliver information interoperability and information usage	Defined PIM for interoperability Defined business rules Building blocks for the development of domain specific and CoI semantics Common transactional ontology for situational awareness and operational planning	Shared architectural component to C2 semantic Interoperability The SOPES IEDM provides a globally usable set of transactional semantics for collaboration, command and control The SOPES IEDM enables flexible distribution of information in a system-of-systems environment through the use of transitionally complete data transactions. The SOPES IEDM enables MDA process for forward engineering required PSM implementations; e.g., .Net Object, Java Objects, OWL/RDF, XML, Policy Driven, Environments, etc. Reusable, editable, and extensible SOPES IEDM metadata Reduction in the development of peer-to-peer interfaces	

8.3 Usage Scenarios

This section identifies three application and development scenarios where the utility of a formal logical domain model, e.g., SOPES IEDM, expressed as an implicit, or preferably explicit, ontology creates a powerful design and runtime interoperability baseline. These scenarios recognize the implicit information sharing ontology that exists as various design references or is simply embedded in executable code. Further, the scenarios argue for the formalization of architecture, business rules and semantics as parts of an explicit ontology that can be used to drive MDA tools, techniques and processes. These formal processes will improve both the realization of software designs during system/service implementation and also create methods by which systems and services can be more effectively managed. These scenarios, and SOPES IEDM, are in keeping with the bold and emerging vision of the OMG and a new generation of Information Exchange Frameworks. These scenarios include the following.

8.3.1 Run Time Operation

In the context of an operational environment, information interoperability is a measure of the ability of heterogeneous systems and services to execute a shared ontology, and thus, understand and properly process exchanged information. The focus of many communities is on data, rather than information (i.e., data in context), and middleware/PSMs, rather than community standards (e.g., composition of vocabularies, messages, services, and processes). Additionally, applications often are static and brittle because of the hardwired technical and semantic dependencies or assumptions - rather than the desired dynamic and agile.

A useful community ontology:

- Must be sufficiently authoritative to support an investment in its implementation
- Is extensible by community members.
- Promotes the flexibility and agility required by modern information operations.
- May contain additional metadata that enables the filtering of data elements to support quality of service, privacy and/or security concerns, while retaining a minimal semantic meaning for the consumer of the information.
- Is not limited to design time changes, rather changes during operations may be permitted; and
- Addresses information assurance and information security concerns.

Runtime applications, middleware and services implementing the SOPES IEDM, may use ontologies to perform semantic mediation, search, and analysis – in next generation web services and architectures supporting cross-organizational operations. For example:

- Highly distributed intra- and inter-organizational environments with dynamic participation by a variety of communities with potentially diverse and often conflicting organizational goals (as when multiple emergency services organizations come together to address a specific crisis)
- Semantically enabled discovery and composition of information and computing resources (e.g., grid computing) for business process integration
- Community information exchange applications, where partners send and receive messages as a means of collaborating and building shared awareness and understanding. In this case the specified ontologies may enable intelligent (e.g., policy-based) agents and/or applications to interoperate at a high-level of automation and sophistication. Support for query interoperation across multiple, heterogeneous data stores is considered an inherent part of this scenario.

While the requirements for ontologies to support these kinds of applications are extensive, key features include:

- The ability to represent situational concepts, such as player/actor – role – action – object – state.
- The necessity for multiple representations and/or views of the same concepts and relations.
- The separation of concerns, such as separating the vocabularies and semantics relevant to particular interfaces, protocols, processes, and services from the semantics of the domain.
- Service checking that messages commit to the ontology at run time.

8.3.2 Application Generation

Traditionally, applications that support an organization or community might be internally focused. In recent years the need to partner and work across organizational, national or community boundaries has become more essential. Enabling the many diverse and unique application to work effectively together requires establishing a common view, universe of discourse, an ability to understand information exchanged and how to interact with others. These concepts and knowledge can be captured in an appropriate set of ontologies and in turn provide a formal context to enable and guide the interaction of agents, services, and/or applications that must work together. Characteristics of these communities include:

- Authoritative environments, with tighter coupling between resources and applications and in other cases, less authoritative and loosely coupled domains.
- Ontologies shared among organizations are highly controlled from a standards perspective, but may be specialized by the individual organizations that use them within agreed parameters.
- The knowledge bases are likely to be dynamically modified, augmented at run time by new policies and metadata, gathered or inferred by communities and applications using them.
- The ontologies are likely to be deeper and narrower, with a high degree of formality in their definition, focused on the specific domain of interest or concepts and perspectives related to those domains.

For example:

- Dynamic regulatory compliance and policy administration applications for security, logistics, supply, command and control, collaborative planning, or other operation requirement.
- Applications that support sharing of information between militaries, other government departments, non-government organizations and private venture organizations at the municipal, state (provincial) federal and international levels.

Requirements:

- The ontologies used by the applications may be fully specified where they interoperate with external organizations and components.
- Conceptual knowledge representing priorities and precedence operations, time and temporal relevance, domains knowledge.

8.3.3 Ontology Lifecycle

In this scenario we are concerned with domain conceptual knowledge analysis, capture, representation, and maintenance. UML modeling environments and repositories can support the rich C2 information ontology of the JC3IEDM. When combined with other domain knowledge, as one would typically capture in other DODAF/MODAF/NAF architectural views, system developers will be able to forward engineer knowledge-based applications, intelligent agents, and semantic web services for C2 operation. Thus, the ontologies and artifacts externalize critical shared domain intellectual property that must be managed to be exploited in an efficient and cost effective manner. Examples include:

- Maintenance, storage and archiving of ontologies for legal, administrative and historical purposes.
- Exchange of design data for system / service development.
- Change impact analysis.
- Test suite generation.
- Information assurance and accreditation analysis.
- Audits and controllability analysis.

Ontological information such as that provided in this specification should be included in a standard repository (e.g., ODM, CWM and MOF) and exchange format (e.g., XMI) for management, storage and archiving. This may be to satisfy legal, security or operations requirements to maintain versions and histories.

These types of applications require that Knowledge Engineers interact with Subject Matter Experts to collect knowledge to be captured. UML models provide a visual representation of ontologies facilitating interaction. The existence of meta-data standards, such as XMI and ODM, will support the development of tools specifically for Quality Assurance Engineers and Repository Librarians.

Requirements implications:

- Full life-cycle support will be needed to provide managed and controlled progression from analysis, through design, implementation, test and deployment, continuing on through the supported systems maintenance period.
- Part of the lifecycle of ontologies must include collaboration with development teams and their tools, specifically in this case configuration and requirements management tools. Ideally, any ontology management tool will also be ontology aware.
- It will provide an inherent quality assurance capability by providing consistency checking and validation.
- It will also provide mappings and similarity analysis support to integrate multiple internal and external ontologies into a federated web.
- The SOPES IEDM development approach and specification is consistent with this ontology life cycle.

8.4 Architecture

As was made clear in the previous section, ontology engineering activities will play a critical role in enabling organizations to document their information environments and migrate to enterprise architectural frameworks. As illustrated in this specification, the SOPES development strategy aligns well with the DODAF, Zachman (see Annex 1), and other families of Enterprise architecture frameworks and the tools being developed to support them.

8.5 Exchange of Complex Data Sets

Applications that may adopt the JC3IEDM are interested in the exchange of complex data set across the C2 information spectrum to support shared situational awareness and collaborative planning. The SOPES IEDM supports the description of data message structures, content and interpretation of the data, in a manner that transcends proprietary or domain specific issues.

Requirements include:

- Representation of complex objects (aggregations of parts).

- Represent the business rules and construction plans for information exchange.
- Multiple inheritances where each semantic dimension or facet can have complex structure.
- Tools to assemble and disassemble complex sets of semantically complete information.
- Facilities for mapping ontologies to create cross-references between two or more communicating domains.

8.6 Engineering Applications

The requirements for ontology development environments need to consider both externally and internally focused applications, as externally focused but authoritative environments may require collaborative ontology development.

8.6.1 Information Systems Development

The kinds of applications considered here are those that use ontologies and knowledge bases to support enterprise systems design and interoperation. They may include:

- Methodology and tooling, where an application actually composes various components and/or creates software to implement a world that is described by one or more component ontologies.
- Semantic integration of heterogeneous data sources and applications (involving diverse types of data schema formats and structures, applicable in information integration, data warehousing and enterprise application integration).
- Application development for knowledge based systems, in general.

8.6.2 Ontology Engineering

Applications in this class are intended for use by an information systems development team, for utilization in the development and exploitation of ontologies that make implicit design artifacts explicit, such as ontologies representing process or service vocabularies relevant to some set of components. Examples include:

- Tools for ontology analysis, visualization, and interface generation.
- Reverse engineering and design recovery applications.

The ontologies are used throughout the enterprise system development life cycle process to augment and enhance the target system as well as to support validation and maintenance. Such ontologies should be complementary to and augment other UML modelling artifacts developed as part of the enterprise software development process.

Knowledge engineering requirements may include some ontology development for traditional domain, process, or service ontologies, but may also include:

- Generation of standard ontology descriptions (e.g., OWL) from UML models.
- Generation of UML models from standard ontology descriptions (e.g., OWL).
- Generation of information exchange policies.
- Generation of .Net and JAVA classes.
- Integration of standard ontology descriptions (e.g., OWL) with UML models.

Key requirements for ontology development environments supporting such activities include:

- Collaborative development.
- Concurrent access and ontology sharing capabilities, including configuration management and version control of ontologies in conjunction with other software models and artifacts at the atomic level within a given ontology, including deprecated and deleted ontology elements.
- Forward and reverse engineering of ontologies throughout all phases of the software development lifecycle.
- Ease of use, with as much transparency with respect to the knowledge engineering details as possible from the user perspective.
- Interoperation with other tools in the software development environment; integrated development environments.
- Localization support.
- Cross-language support (ontology languages as opposed to natural or software languages, such as generation of ontologies in the RDF(S)/OWL family of description logics languages, or in the Knowledge Interchange Format (KIF) where first or higher order logics are required).
- Support for ontology analysis, including deductive closure; ontology comparison, merging, alignment and transformation.
- Support for import/reverse engineering of RDBMS schemas, XML schemas and other semi-structured resources as a basis for ontology development.

9 SOPES IEDM

9.1 Overview

The SOPES IEDM was spawned out of a larger initiative to develop a set of specifications to enhance situational interoperability across a wide range of agencies responding to natural and man-made crises. The objective of the Shared Operational Picture Exchange Services (SOPES) initiative is to enhance the ability of first responders, government, military and civilian organizations to develop and sustain a complete, timely and accurate awareness of the operational situation (Common Operational Picture). SOPES will enable users to selectively share information across and between participating organizations; providing an improved visibility of the operational environment affecting decisions and resource commitments. The intent is to provide the decision maker with relevant information in near real time and to support the challenge of tactical communication links. SOPES will also protect sensitive, private, confidential or legally significant information from general dissemination. SOPES will enable all participants within a coalition to have the same understanding of the operational scenario and environment within their area of interest.

Recent events, such as '9/11,' have reinforced a longstanding requirement for timely, efficient, accurate, and trusted sharing of operational information amongst civil, military (including coalition) and private respondents to Crisis Response Operations (CRO). To this end, the OMG C4I DTF is seeking to define a set of standards, under the Shared Operational Picture Exchange Services (SOPES) initiative, for services and capabilities to facilitate the integration of current and future management systems supporting civil and military operational management. The Information Exchange Data Model (IEDM) sought under this RFP is one in a series of RFPS that include:

- Information Exchange Data Model (focus of this RFP)
- Trusted Information Exchange Mechanism (RFP C4I-2004-06-13)
- Information Exchange Policy Management
- Logging and Auditing for Information Exchange Environments
- UML Profiles for Trusted Information Exchange.

The shared information environment envisioned by the SOPES initiative is categorized by services and/or capabilities supporting:

- A broad cross-section of organizations, including:
 - First Responders (e.g., Police, Fire Department and Emergency Medical Personnel)
 - Government Agencies (Federal, Provincial/State and Municipal)
 - Non-Government Organizations (NGOs)
 - Private Volunteer Organizations (PVOs)
 - Para-military and security agencies
 - Military (Land, maritime, air, and space)
- A shared representative common operational picture across organizations, agencies and communities of interest (e.g., situational awareness, resource management, logistics, supply, transportation, finance and decision support).
- Multiple levels of trust within and between the collaborating organizations and agencies.
- Multiple political, diplomatic, social and cultural requirements.

Capabilities supporting the protection of territory, sovereignty, population, and infrastructure from potential man-made or natural disasters, (e.g., natural disaster, medical crisis, terrorist attacks, military operations); where, protection includes:

- Preparation
- Detection
- Prevention
- Response
- Recovery

The C4I DTF is working with other OMG Special Interest Groups (SIGs), Domain Task Forces (DTFs) and Platform Task Forces (PTFs) to address many related requirements and technologies complementing the SOPES initiative; including Security, Radio operation and control, Real-time Data Exchange and Quality of Service (QOS). Wherever possible the C4I DTF directs respondents to integrate existing and evolving standards into their submissions for the SOPES initiative.

9.2 SOPES PIM

The SOPES PIM comprises four packages:

1. **Diagrams.** Encapsulating the UML Representations of the Semantic and Transactional Classes comprising the transactional ontology (data patterns and business rules) for the JC3IEDM.
2. **Foundation.** Encapsulating the Entity and Wrapper classes derived from the MIP Information Resource Dictionary (MIRD). The Foundation also provides a set of class models which map the Logical definition (Wrapper Classes) – Annex B. The physical definition of the entities and attributes are provided in the UML model (provided), in the JC3IEDM Specification and in the MIP Information Resource Dictionary (normative reference for the JC3IEDM). The physical definitions were specifically excluded from this specification as they are central to the JC3IEDM.
3. **Transactionals.** The core of this specification, the transactional classes contain the construction plans for the JC3IEDM Transactional Model - Chapter 10, with details provided in Annex 3.
4. **Semantics.** Will be provided in the final release and illustrate to CoI developers and users the manner to which Transactionals are linked to describe the IERs for the community – Chapter 11.

9.3 Organization of the SOPES IEDM PIM

The SOPES IEDM Meta-model uses packages and a hierarchical package structure to control complexity, promote understanding, and support reuse. The model elements are contained in the following packages.

Foundation: includes the “WRAPPER” classes, which provides the object wrappers for each of tables comprising the JC3IEDM. These “Wrapper” classes form the foundation for the transactional ontology described in this specification.

Transactionals: includes the “TRANSACTIONAL” models which describe the ontological rules for the database transactions specified for the JC3IEDM. The models are grouped into packages that align to the logical information areas described in the JC3IEDM Specification:

- Action
- Capability
- Context

- Control Feature
- Facility
- Geographical Feature
- Holdings
- Location
- Materiel
- Meteorological Feature
- Object Item
- Object Type
- Organization
- Person
- Plans and Orders
- Report

The Transactional Artifact constrains the construction of allowable database transactions based on the JC3IEDM referential integrity rule and the business rules specified in the JC3IEDM Specification.

Semantics: include the “SEMANTIC” Models which constrain the construction of a semantically complete information or business object as defined by the MIP community of interest (CoI). Note that these semantic models form a subset of the semantic constructs, which can be constructed using the JC3IEDM Transactional Artifacts.

9.4 Modeling Conventions

In this section we present some of the modeling conventions used in this specification, including the naming conventions and the use of the Identifier and Watch-Point Tags.

Naming Convention

The naming convention used in this specification are based, as practical, on those used in the JC3IEDM specification (see MIP document *JC3IEDM - Annex H - Class words-DMWG-Edition_3.1c*).

Wrappers

The names for the Wrappers are derived through a simple modification of the logical names of the Entities in the JC3IEDM. The logical names of the Entities in the JC3IEDM are written in upper-case letters and distinct words in the name are separated by hyphens. The Wrapper name is derived by first converting the logical name to Upper Camel Form (in which the first letter of each word is capitalized), and secondly removing all hyphens and allowing no spaces. For example, the name of the Wrapper derived from the Entity with the logical name ABSOLUTE-POINT would be AbsolutePoint.

Transactionals

The Transactionals are named for their focus. This is normally the Wrapper that is designated as the Identifier of the Transactional (see below). The Transactional name is derived through a simple modification of this Wrapper's name. The Transactional name retains the Upper Camel Form of the Identifying Wrapper and all distinct words in the name are separated by underscores (in a sense replacing the hyphens found in the logical names of the Entities). Finally, any occurrence of the word 'Association' is shortened to 'Assoc.' For example, if the Wrapper AbsolutePoint was the focus (or Identifier) of a Transactional (and it is) the name of the Transactional would be Absolute_Point. In the case of the Wrapper ActionFunctionalAssociation, which is also the focus of a Transactional, the name of the Transactional would be Action_Functional_Assoc.

When the Transactional links an object-item to the independent location area of the JC3IEDM data-model, the word Position is appended to the name of the Transactional (e.g., Facility_Position).

In those instances where the logical name of an Entity is comprised of a single word (e.g., PERSON), the derived name of the Wrapper will also consist of a single word (i.e., Person). The algorithm by which the Transactional names are derived would result, as well, in the same single-word name for the Transactional. To avoid the confusion that may result, single-word Transactionals have the word Item appended to their names (Person_Item).

In the case of the three sub-types of Features (Control, Geographic and Meteorological), it was felt that the focus should be on the Feature itself, so the names were used without underscores or spaces (e.g., ControlFeature_Status, GeographicFeature_Position, or MeteorologicalFeature_Item)

Semantics

The Semantics are named for their topic or subject area formed by the grouping of Transactionals. These tend to be the aspects of the ontology that are of primary importance to the users. In the JC3IEDM, there are Semantic Artifacts defined for each of the five sub-types of Object_Item and Plans and Orders among others. The name is formed by appending an underscore and SA to the topic area (e.g., Organisation_SA or ControlFeature_SA).

9.4.1 Attributes

Attributes in Wrappers

The names of the attributes used in the Wrappers are derived from the logical names of the attributes in the corresponding Entities in the JC3IEDM. The logical names of the attributes in the Entities are written in lower-case letters, and distinct words in the name are separated by hyphens. The Wrapper's attribute name is derived by first converting the logical name to Lower Camel Form (in which the first letter of each word is capitalized, except for the first word), and secondly removing all hyphens and allowing no spaces. When logical names of the attributes in the Entities begin with the Entity name, that portion is omitted from the corresponding attribute name that will appear in the Wrapper. For example, the logical name of the first attribute in the Entity ABSOLUTE-POINT is 'absolute-point-id,' so the first attribute in the Wrapper AbsolutePoint would be 'id.'

It is our intention to change the naming convention for the names of the attributes in the Wrappers (in the future we will simply use the logical field names that appear in the JC3IEDM). This change will be reflected in all future releases of the SOPES standard, but for the current release we continued to use the names produced by the above naming algorithm.

Attributes in Transactionals

In the current release we have not included attributes in Transactionals.

An attribute in a Transactional would contain data promoted from an attribute in a Wrapper, or data resulting from an operation performed on one or more attributes in one or more Wrappers. The name of the attribute would be derived in a manner to indicate what the attribute held and how it was related to the source data.

Attributes in Semantics

In the current release we have not included attributes in Semantics. It is assumed that all attributes contained in the subtended Transactionals are included in the Semantic.

9.4.2 Identifiers and WatchPoints

All Transactional Artifacts have a focus. This focus is a Wrapper and the reason the artifact exists. Often the focus is a Wrapper with a name that is similar to that of the Transactional_Artifact. For example the Transactional Artifact Material_Status has as its focus the Wrapper MaterialStatus. The Wrapper that is the focus of a Transactional Artifact is known as the Identifier.

Some Transactional Artifacts are designed around a Watch-Point Wrapper. These artifacts comprise far less than half of the total number of Transactional Artifacts that have been defined in this specification. A Watch-Point Wrapper is one in which a change to its corresponding Entity (e.g., the insertion of a new record) is of high importance in the Command and Control environment. Watch-Point Entities are those that are monitored (watched) for changes. Transactional Artifacts that are designed around a Watch-Point Wrapper also have an Identifier Wrapper.

The change in any status of an environmental object is one of these changes of interest. Consequently, we might anticipate that the Material_Status Transactional Artifact introduced above has a Watch-Point Wrapper. In fact it does, the Watch-Point Wrapper is ObjectItemStatus, which has the corresponding Entity OBJECT-ITEM-STATUS. Any changes to the Entity OBJECT-ITEM-STATUS are of interest in the Command and Control environment. If the Object_Item who's status changed was a Material_Item, then the Material_Status Transactional Artifact would carry that information.

In a Command and Control environment the interest is on changes to Plans and Orders, or to the type, position, or status of Object-Items in the operational environment. The information typically exchanged in the operational environment is of this dynamic nature. Since information of this nature is encapsulated in Watch-Point Transactional Artifacts, it is the Watch-Point Transactionals that constitute the primary message traffic.

While the message traffic consists of both Watch-Point and Identifier Transactional Artifacts, it is the presence of the Watch-Point Entities in the messages that trigger the shared operational picture behaviour.

9.4.3 Stereotypes

This Specification uses the following stereotypes as part of the modeling profile. These are explained at the beginning of Chapter 9 and Annex A:

- Semantic
- Transactional
- Wrapper
- JC3_v3-1_entity

9.4.4 OCL

Object constraint language is used to constrain navigation (Chapter 10) on a containment arc to assure the correct aggregation of subtended element in an information construct and to describe the navigation/construction plan (Annex C) derived from the UML. An exemplar for the use of navigation constraints is illustrated in Figure 9.3.

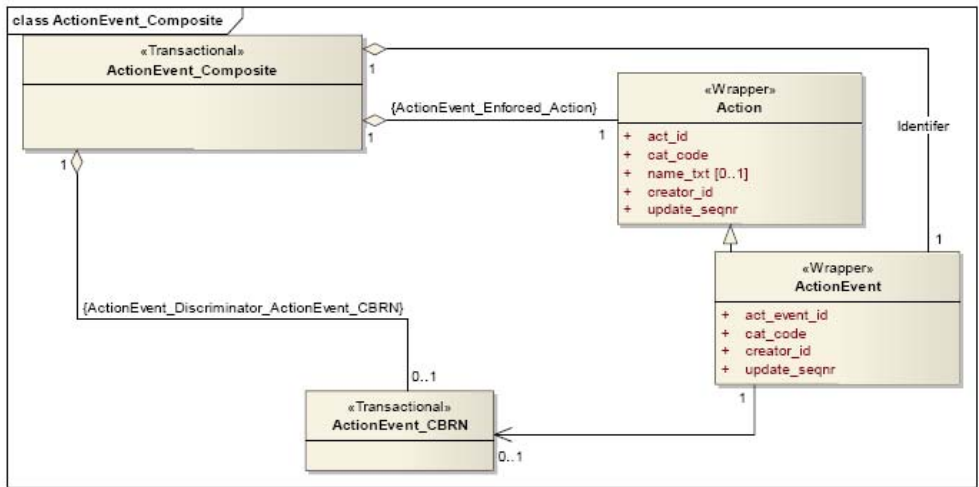


Figure 9.3 - OCL Example

Table 9.1 provides an example of the OCL used to constrain navigations:

Table 9.1

Constrain	Details
ActionEvent_Discriminator_ActionEvent_CBRN	inv: self.ActionEvent.action-event-category-code='CBRN'
ActionEvent_Enforced_Action	inv: self.Action.action-category-code='ACTEV'

Additional details on the formal use of OCL in the model is provided in Annex A.

9.4.5 Class

Conforming to standard UML notation, classes are represented in diagrams as rectangular boxes with three horizontal sections containing the class name, attributes, and operations, respectively, from top to bottom. Classes defined in the current SOPES IEDM are shown with all their attributes and operations visible. The Semantic Artifacts, Transactional Artifacts, Wrappers and JC3_v3-1_entities are all Classes, differentiated by Stereotypes. The modeling profile used the following elements of the UML Class Model Profile:

- **Attributes:** The Attributes of a Class describe the data contained in an object of the class. These appear in the second or middle compartment of the class icon.
- **Operations:** The operations of a Class define the ways in which objects of the Class may interact. These appear in the bottom or third compartment of the Class icon.

- **Associations:** The associations on a express the relationships between the Classes. It is represented as a solid line between the two Class icons. Occasionally the association has a label to express the intent or nature of the association and improve the readability of the Class Diagram.
- **Navigability of the Association:** Navigability is shown by the use of arrows on the Associations. When an association is navigable in both directions, no arrows are shown.
- **Multiplicity of the Association:** In UML, multiplicities are specified by numerically annotating the ends of the association with a lower bound that is greater or equal to zero and an upper bound that is greater or equal to the lower bound. The upper bound may be unbounded, which is indicated by an asterisk. The lower and upper bounds are normally separated by two periods.
- **Composition and Aggregation Associations:** These associations are used to indicate that an object of one class is part of an object of another class. Composition is a special kind of aggregation in which the whole strongly owns the parts.
- **Qualified Associations:** These are association to which a constraint has been applied.

9.4.6 JC3IEDM Domain Model

Document how the JC3IEDM domains and Business rules are modeled in this specification, Annex A.

9.5 Foundation

The foundation is a collection of meta-model packages that contain model elements representing concepts and structures that are shared by other SOPES packages. The foundation packages provide the link between the higher-level semantic and transactional models and the underlying information model comprising the JC3IEDM.

9.5.1 Organization of Foundation

The SOPES IEDM uses packages to control complexity and create subject area groupings for interrelated classes. The foundation is a collection of packages that are described together because they provide a common foundation for all other packages and establish the linkage to the underlying JC3IEDM.

Organizing the foundation in this manner allows other model packages to be understood and used independently of each other without sacrificing their common purpose.

The foundation Packages include:

- **Entities.** This package includes the meta-classes derived from the JC3IEDM version 3.1 (January 2007). Each carries the stereotype “JC3-V3-1b_entity” identify that it was derived from the JC3IEDM version 3.1c. This designation will aid in the management of future configuration of the SOPES models and the identification of changes between versions. The Entities represent the naming convention of the MIP JC3IEDM Physical Model.
- **Wrappers.** The package includes the wrapper classes, which inherit the meta-definitions of its corresponding “JC3-V3-1_entity” meta-class. The wrapper classes describe the structure of an object single instance (or row entry in the JC3IEDM) in a SOPES compliant runtime environment. The “Wrappers” represent a one to one mapping to the “entities” utilizing the naming convention of the MIP JC3IEDM Logical Model. Once this mapping is complete, the remainder of the mapping utilizes the MIP JC3IEDM Logical Names.
- **Initial_Mappings.** The package contains a set of diagrams that map the associations between the JC3IEDM entity classes and the Wrapper Classes that form the foundation of the SOPES Transactional Ontology. These diagrams are derived from the MIP Information Resource Dictionary.

NOTE: The initial set of foundation classes are provided as a separate word file (20070621_foundation_classes.doc) for this initial submission. There is some thought of presenting them in an attachment as they represent several hundred pages.

9.5.2 Creating the “Wrapper Classes”

The Enterprise Architect Model was bulk loaded from the MIP Information Resource Dictionary (MIRD) using the following rules:

- If the attribute name is preceded by the entity table name then the entity table name part of the attribute name is stripped off. (Ex: entityName: AIRFIELD-TYPE full attribute name: airfield-type-use-category-code stripped attribute name: use-category-code; If only part of the entity name is present no change is performed).
- Short forms within the attribute name are resolved using name_txt column value for the corresponding attribute in the ENT table. (Ex: attr name: surf_dep_qty name_txt column value: surface-deposition-quantity All short forms are expanded likewise).

All hyphenation is removed and the name is rendered in lower camel case (standard java. variable naming convention).

10 Transactionals

The SOPES Model has been divided into packages to aid in the readability and usability of the specification. This section defines a community independent set of reusable data patterns, based on the JC3IEDM, supporting situational awareness, response coordination and collaborative planning. These patterns cover the following 16 subject areas:

- Actions
- Capabilities
- Context
- Control Features
- Facilities
- Geographical Features
- Holdings
- Locations
- Materiel
- Meteorological Features
- Object Item
- Object Type
- Organization
- Personnel
- Plans & Orders
- Reporting

The MIP JC3IEDM Main document referred to in Chapter 3 provides many examples of how to use the JC3IEDM in subject areas.

The Class Attributes in the section diagrams are defined in Annex B. Each Wrapper contains a creator_id and update_seqnr (update sequence number) both are transactional metadata required by the MIP DEM and may have no bearing on the semantics of the associated transactional or community semantic.

10.1 Action

This package focuses on information exchange policy related to defining and specifying an action in terms of JC3IEDM information elements.

10.1.1 Action_Context

The Action_Context Transactional Artifact captures information that associates an individual action with a defined context. Frequently the context will specify the conditions that must precede the action or those that should follow as a result of it.

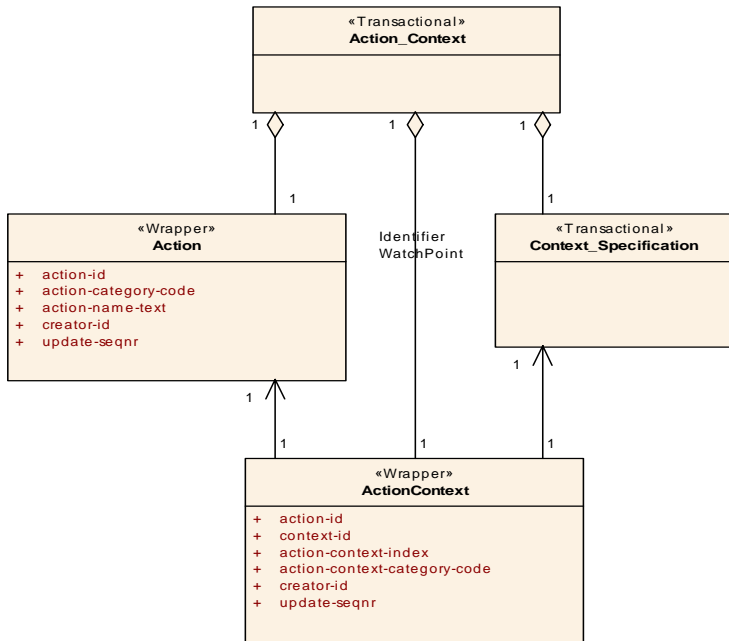


Figure 10.1 - Action_Context

10.1.2 Action_Context_Status

The Action_Context_Status Transactional Artifact captures information regarding the status of the association between an individual action and a defined context as perceived by the establishing organization. The status is used to indicate the beginning and termination times of the association.

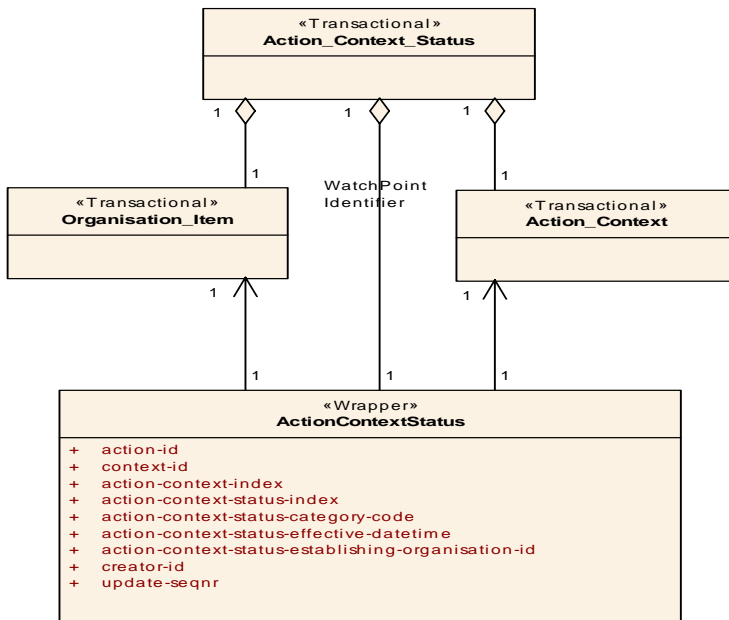


Figure 10.2 - Action_Context_Status

10.1.3 Action_Effect

The Action_Effect Transactional Artifact captures information that specifies the perceived effects of an individual action (planned or realized) against a specified battle-space object or its class (i.e., Object_Items and Object_Types). The domain values include terms such as: captured, destroyed, neutralized, etc. The transactional encloses the Action_Effect_Item and Action_Effect_Type Transactional Artifacts that further refine the effects of the action in terms of objects and types against which the action had an effect (not necessarily the objectives of the action).

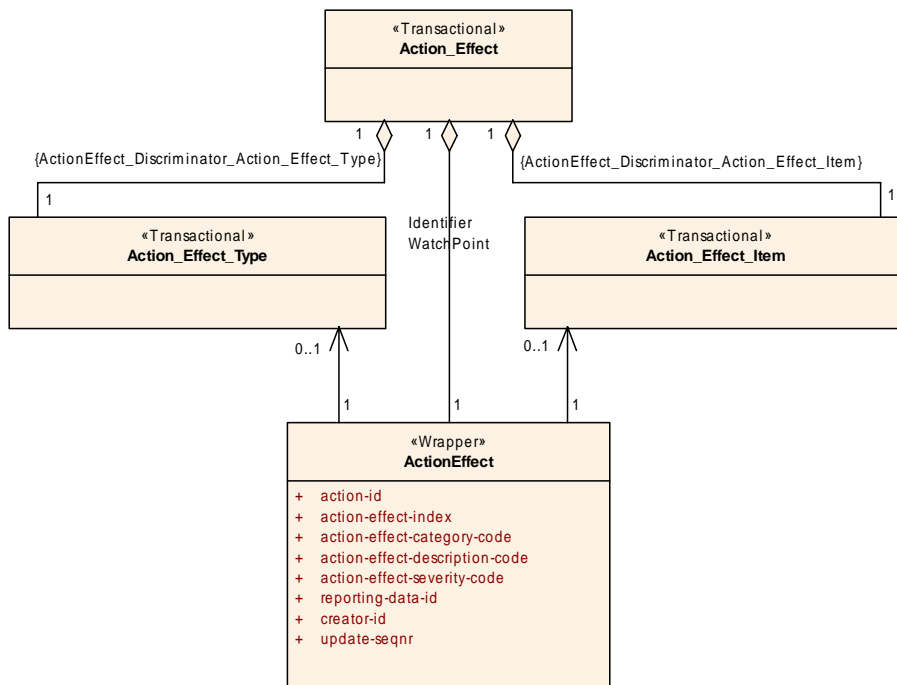


Figure 10.3 - Action_Effect

10.1.4 Action_Effect_Item

The Action_Effect_Item Transactional Artifact captures information that specifies the perceived effects of an individual action (planned or realized) against a specified battle-space object. The domain values include terms such as: captured, destroyed, neutralized, etc. The effects of the action may relate to objects that were not necessarily the objectives of the action.

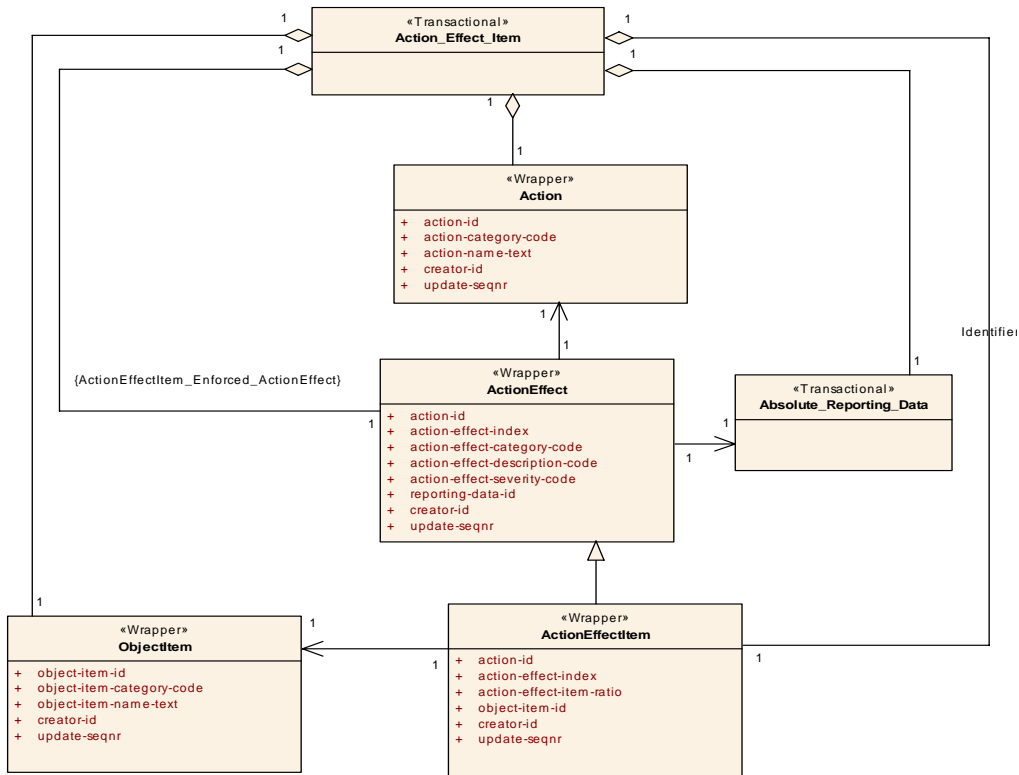


Figure 10.4 - Action_Effect_Item

10.1.5 Action_Effect_Type

The Action_Effect_Type Transactional Artifact captures information that specifies the perceived effects of an individual action (planned or realized) against a specified type of battle-space object. The domain values include terms such as: captured, destroyed, neutralized, etc. The effects of the action may relate to objects that were not necessarily the objectives of the action.

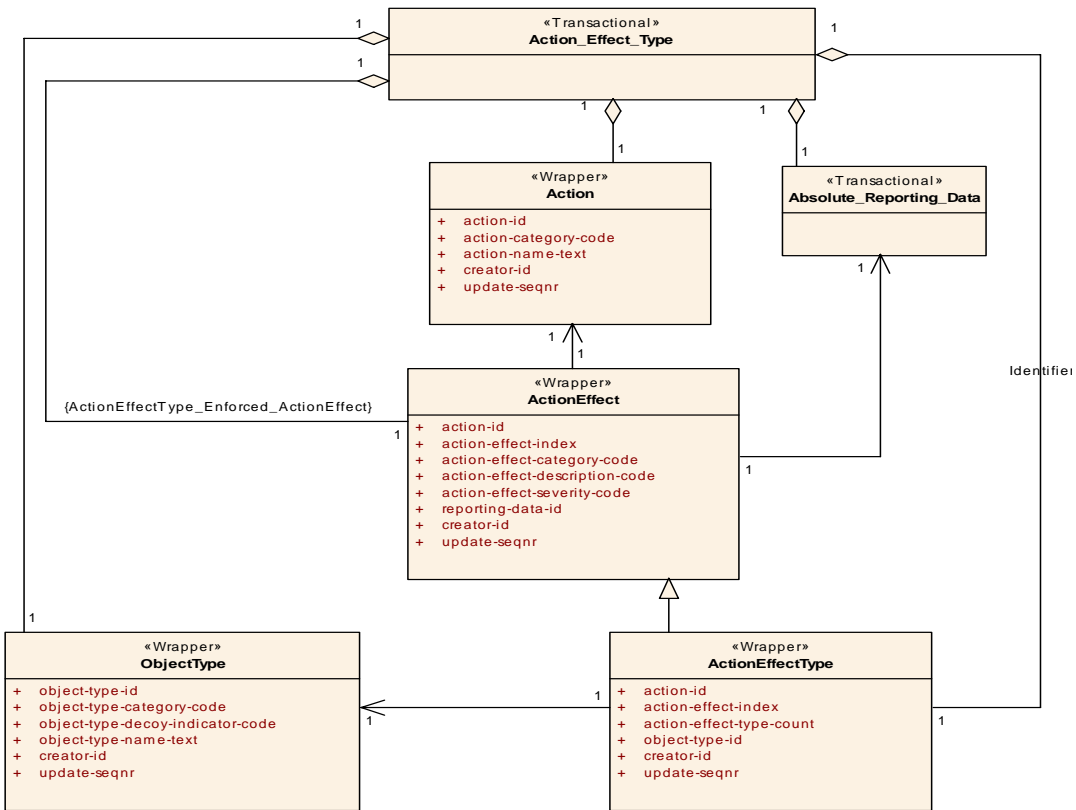


Figure 10.5 - Action_Effect_Type

10.1.6 ActionEvent_CBRN

The ActionEvent_CBRN Transactional Artifact captures information regarding action events that involve chemical, biological, radiological, or nuclear material individually or in combination.

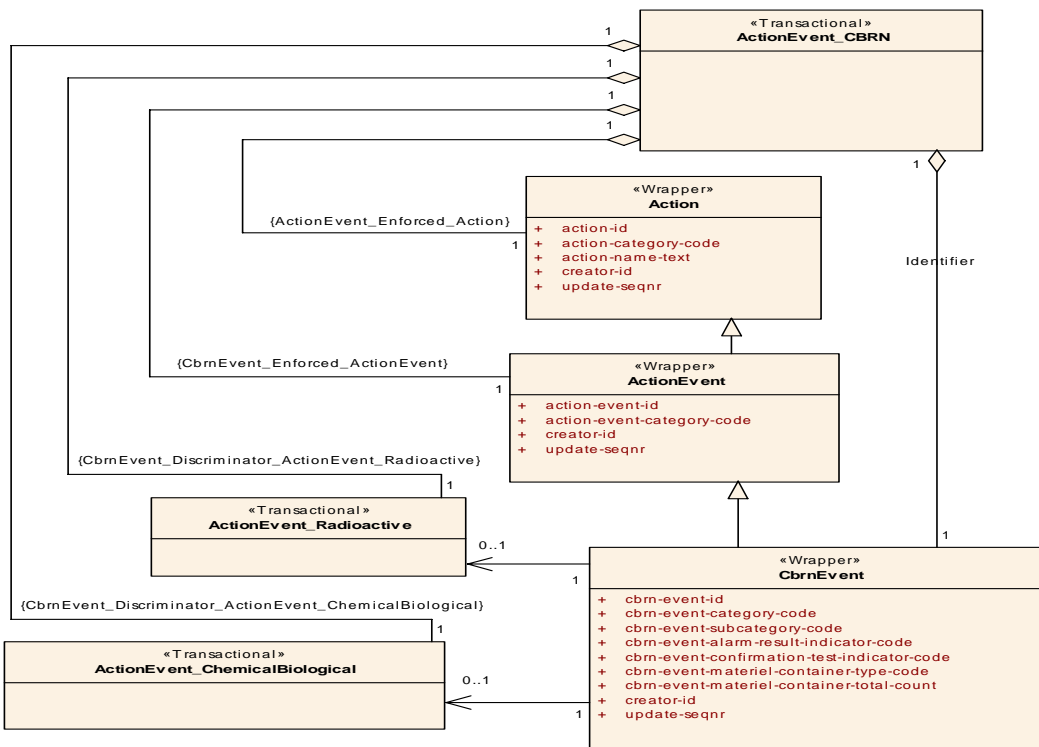


Figure 10.6 - ActionEvent_CBRN

10.1.7 ActionEvent_ChemicalBiological

The ActionEvent_ChemicalBiological Transactional Artifact captures information regarding action events that involve chemical or biological materiel.

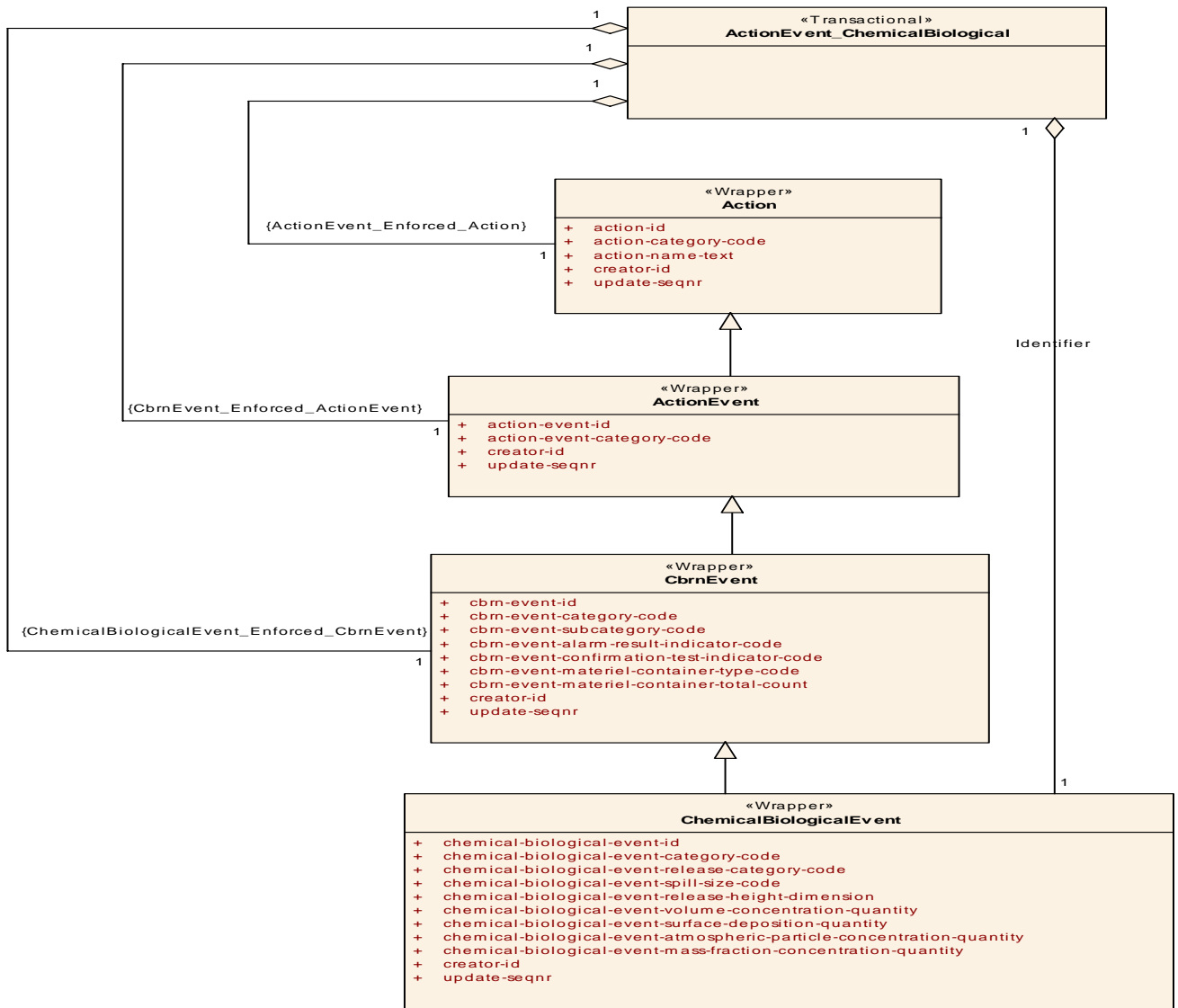


Figure 10.7 - ActionEvent_ChemicalBiological

10.1.8 ActionEvent_Composite

The ActionEvent_Composite Transactional Artifact captures information regarding events (a subtype of action) that simply occur (often unforeseen) and need to be captured because they are of military significance. The event may be political, economic, environmental, or a disaster of some type, but the events of primary military interest are those that involve the use of chemical, biological, radiological, or nuclear materiel individually or in combination.

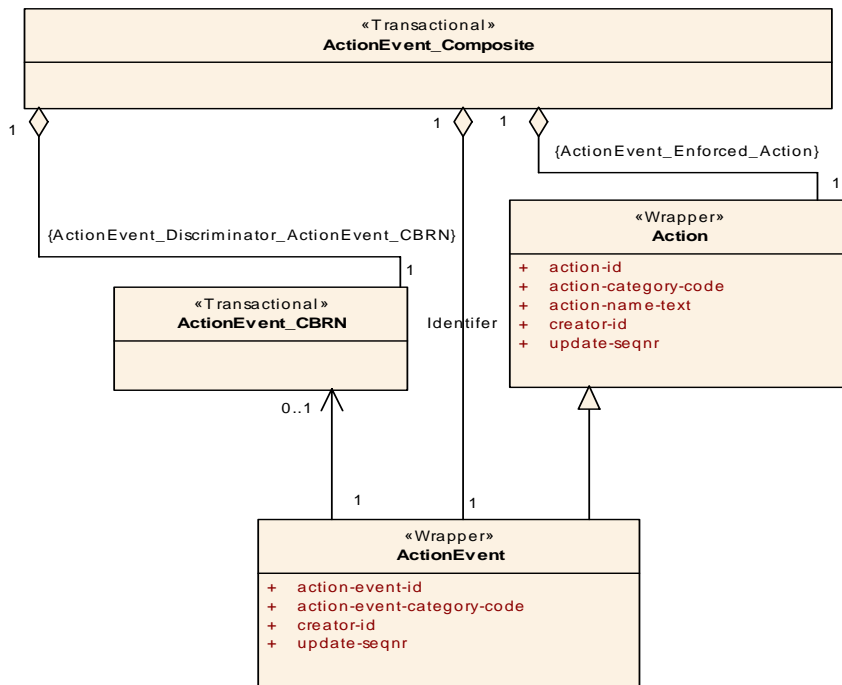


Figure 10.8 - ActionEvent_Composite

10.1.9 ActionEvent_Detail

The ActionEvent_Detail Transactional Artifact captures supplemental information about an action event. The transactional encloses both the ActionEvent_Composite Transactional Artifact to relate the details of the action event to the event itself, and the Absolute_Reporting_Data Transactional Artifact in which information about the details is captured.

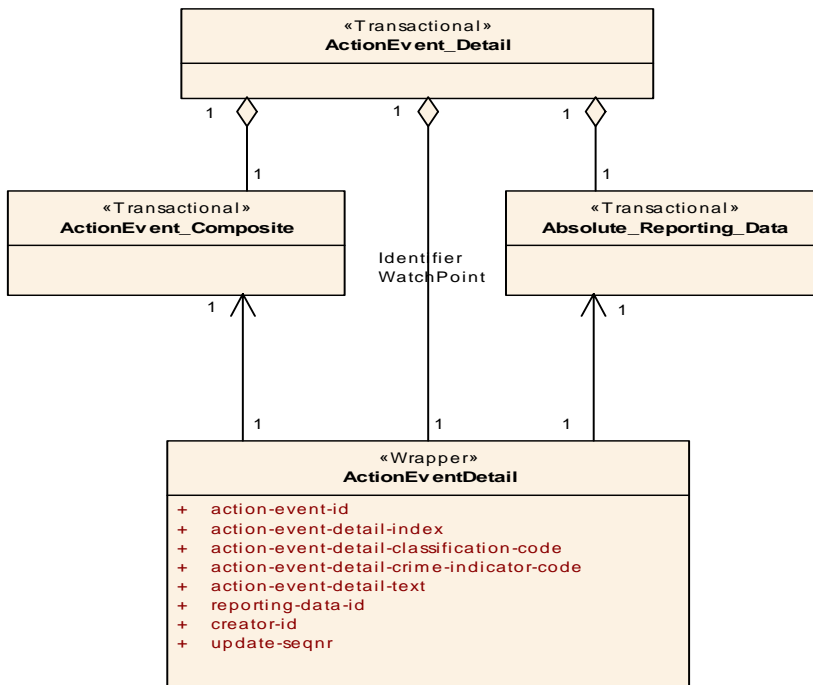


Figure 10.9 - ActionEvent_Detail

10.1.10 ActionEvent_Nuclear

The ActionEvent_Radioactive Transactional Artifact captures information regarding CBRN action events that involve radioactive nuclear material or nuclear detonation.

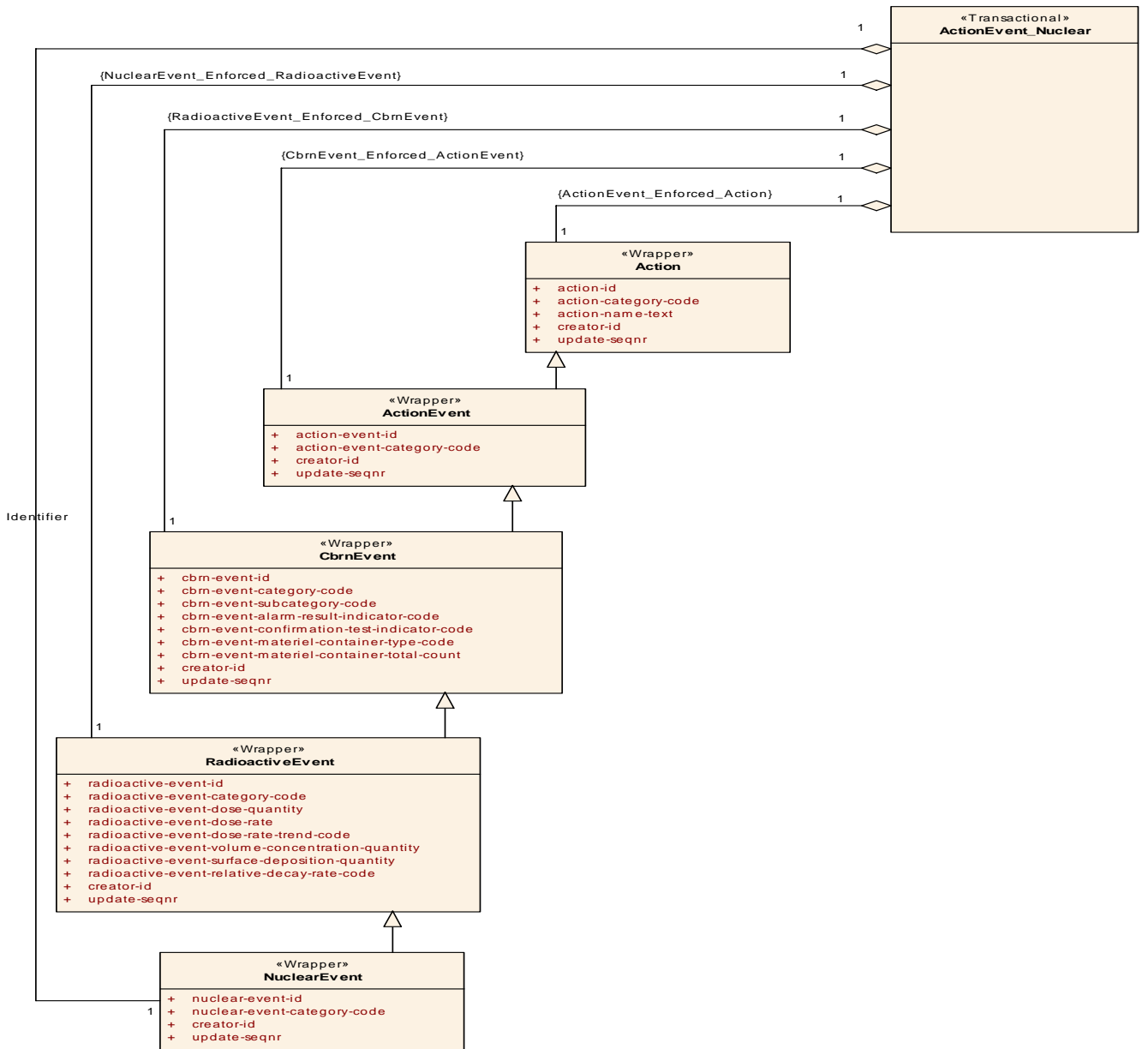


Figure 10.10 - ActionEvent_Nuclear

10.1.11 ActionEvent_NuclearWeapon

The ActionEvent_NuclearWeapon Transactional Artifact captures information regarding nuclear action events that involve the detonation of a nuclear device.

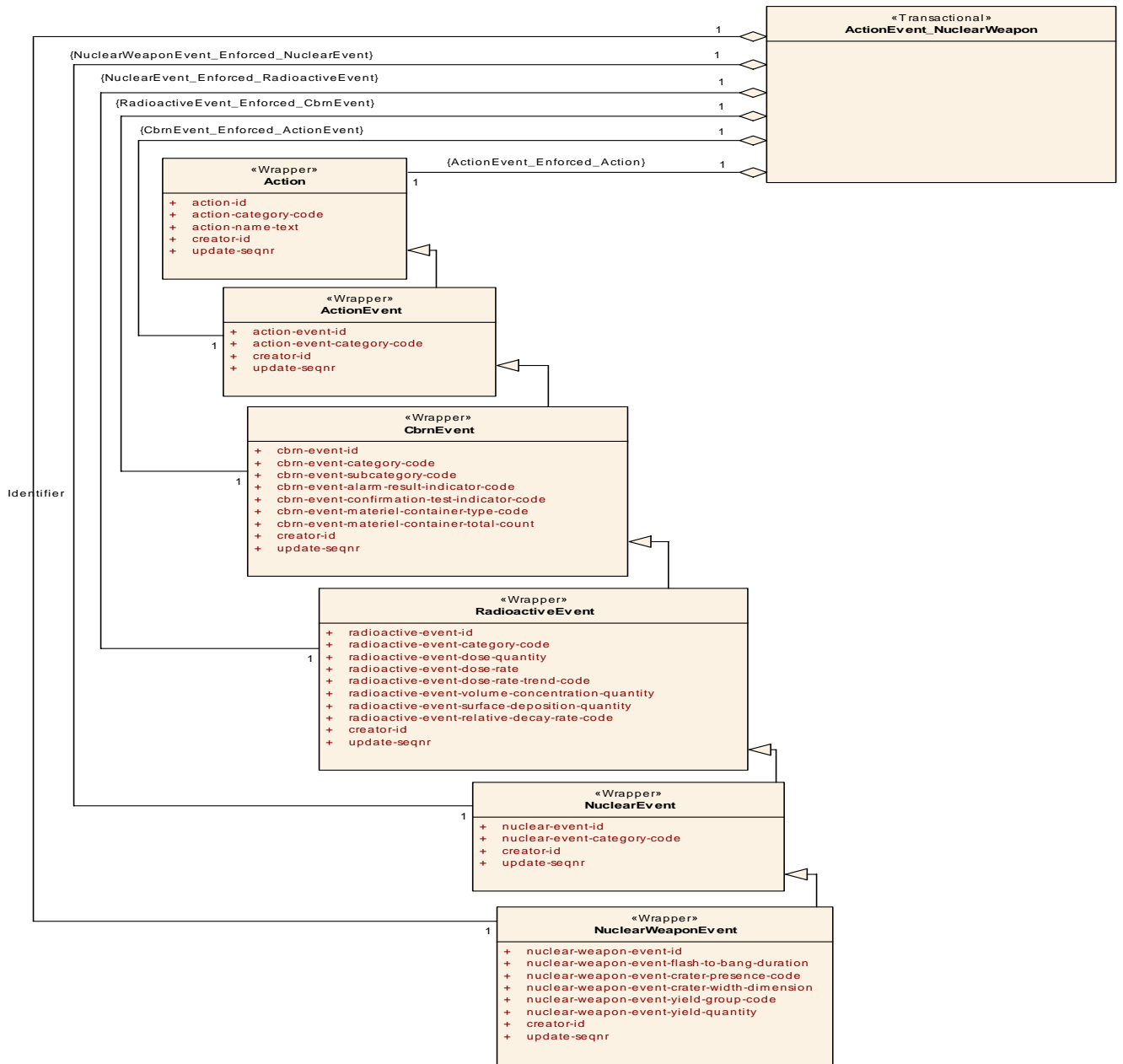


Figure 10.11 - ActionEvent_NuclearWeapon

10.1.12 ActionEvent_Radioactive

The ActionEvent_Radioactive Transactional Artifact captures information regarding CBRN action events that involve radioactive materials.\

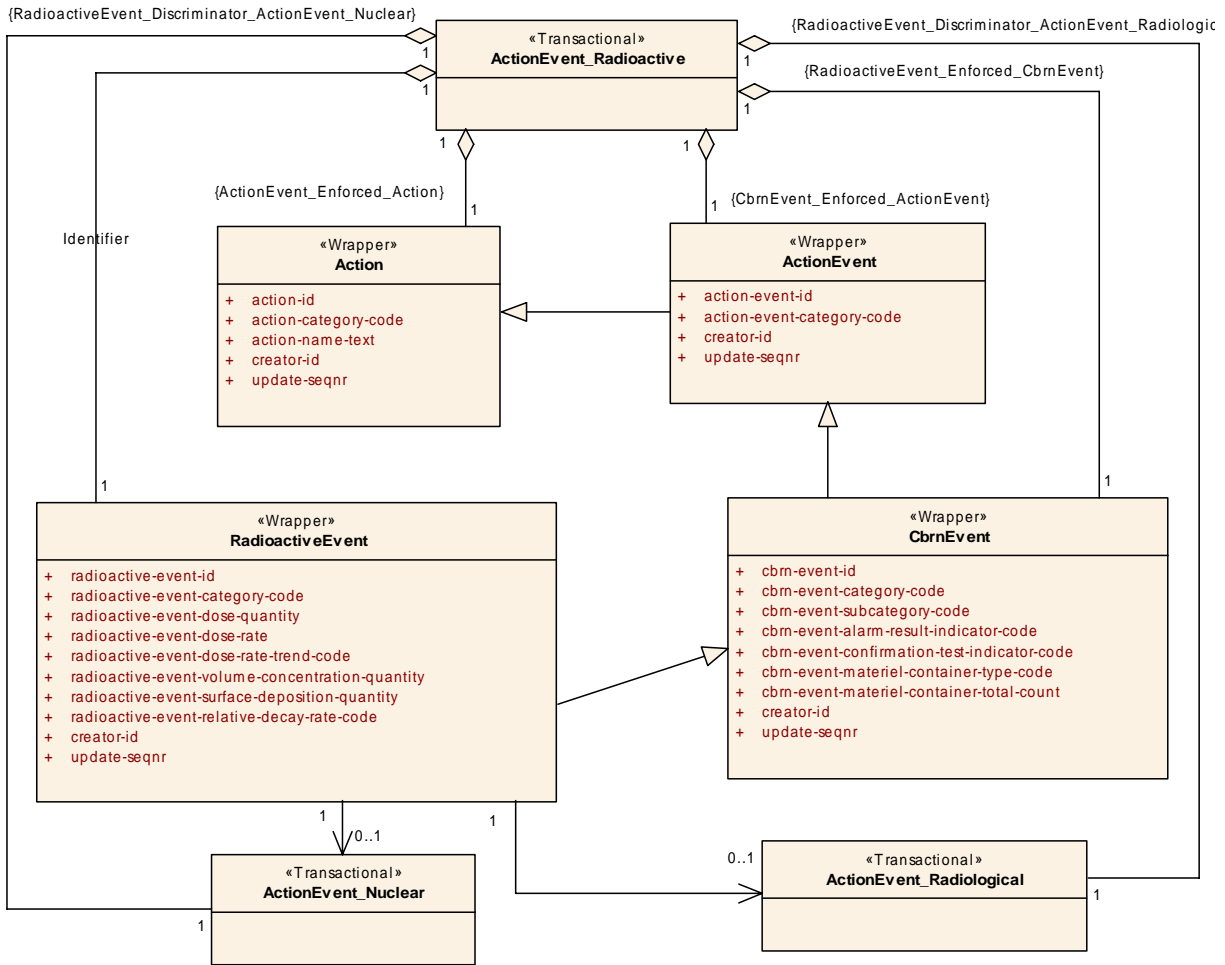


Figure 10.12 - ActionEvent_Radioactive

10.1.13 ActionEvent_Radiological

The ActionEvent_Radiological Transactional Artifact captures information regarding radioactive action events that involve radioactive materials but do not involve nuclear materiel or nuclear detonation.

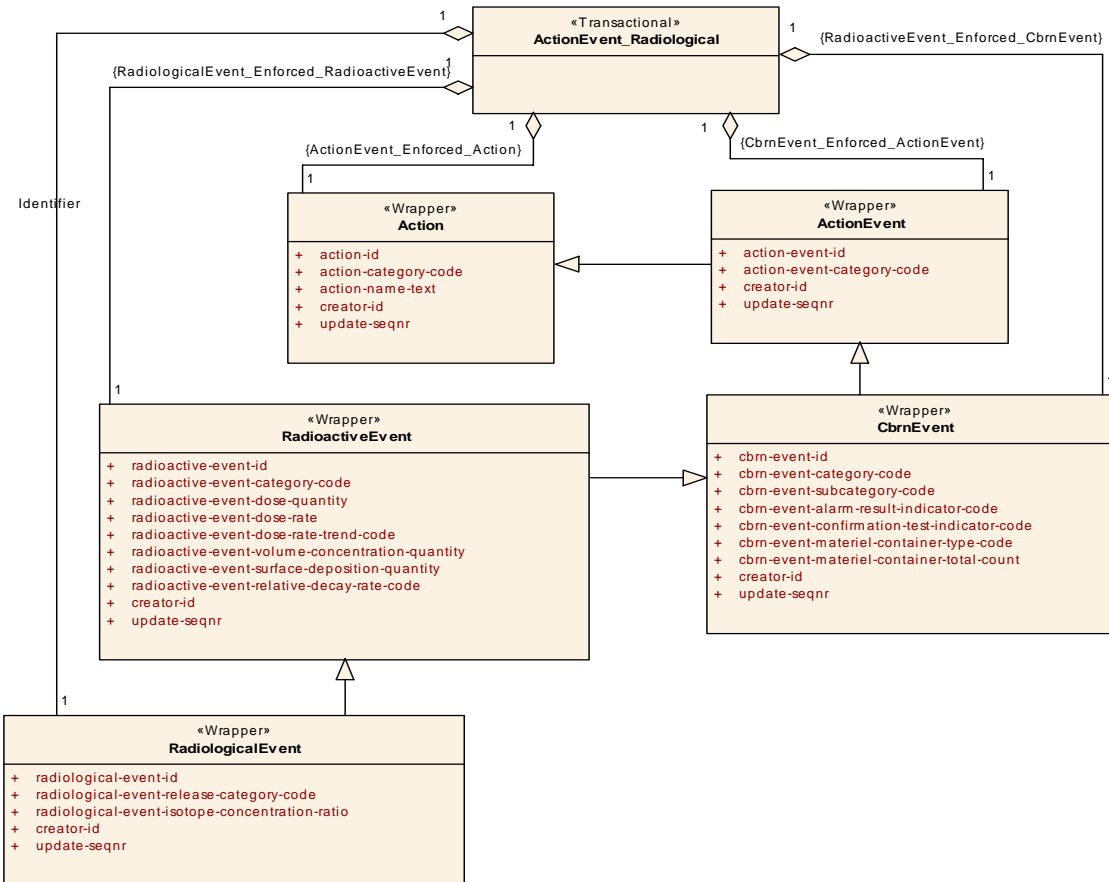


Figure 10.13 - ActionEvent_Radiological

10.1.14 ActionEvent_Status

The ActionEvent_Status Transactional Artifact captures the perceived appraisal of the actual progress of a specific action event as determined by the reporting organization. The transactional encloses both the ActionEvent_Composite Transactional Artifact to relate the status of the action event to the event itself, and the Absolute_Reporting_Data Transactional Artifact in which information about the estimate is captured.

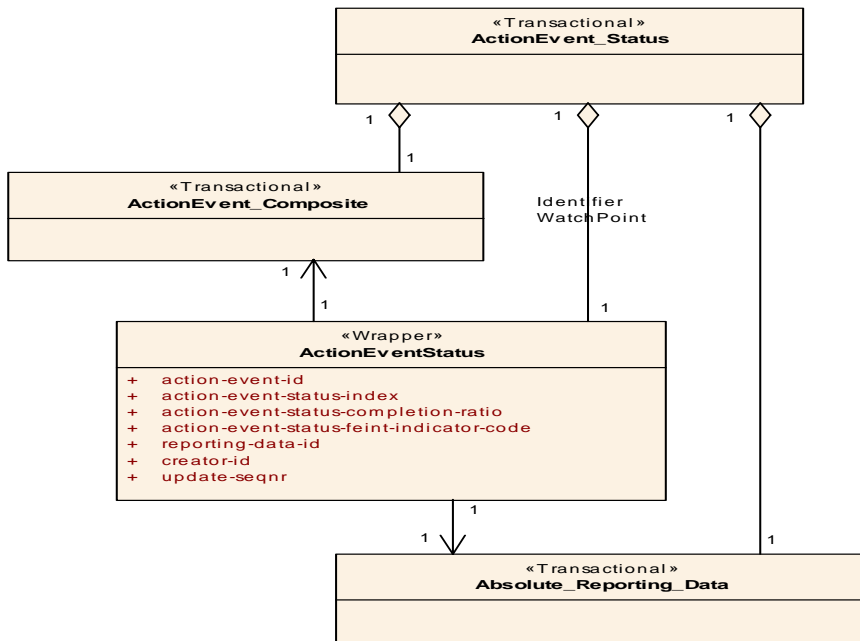


Figure 10.14 - ActionEvent_Status

10.1.15 Action_Functional_Assoc

The Action_Functional_Association Transactional Artifact captures information regarding the functional association (dependency) between a pair of individual actions. These provide a means to create more complex sets or hierarchies of activities, such as those represented by an operational plan or order. Examples of functional associations include: is a pre-requisite for, is an alternative to, is the cause of, etc.

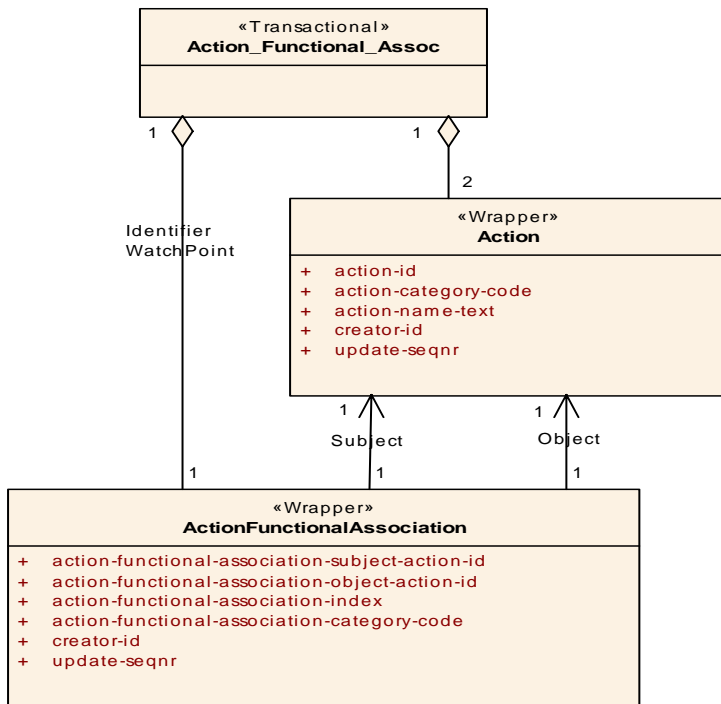


Figure 10.15 - Action_Functional_Assoc

10.1.16 Action_Location

The Action_Location Transactional Artifact captures information that associates an individual action with a location, enabling the geographic position of the action to be specified, independently of the positions of the resources or objectives (both Object_Items) involved in the action. The Action_Location Transactional Artifact encloses the Absolute_Reporting_Data Transactional Artifact in which information about the association is captured.

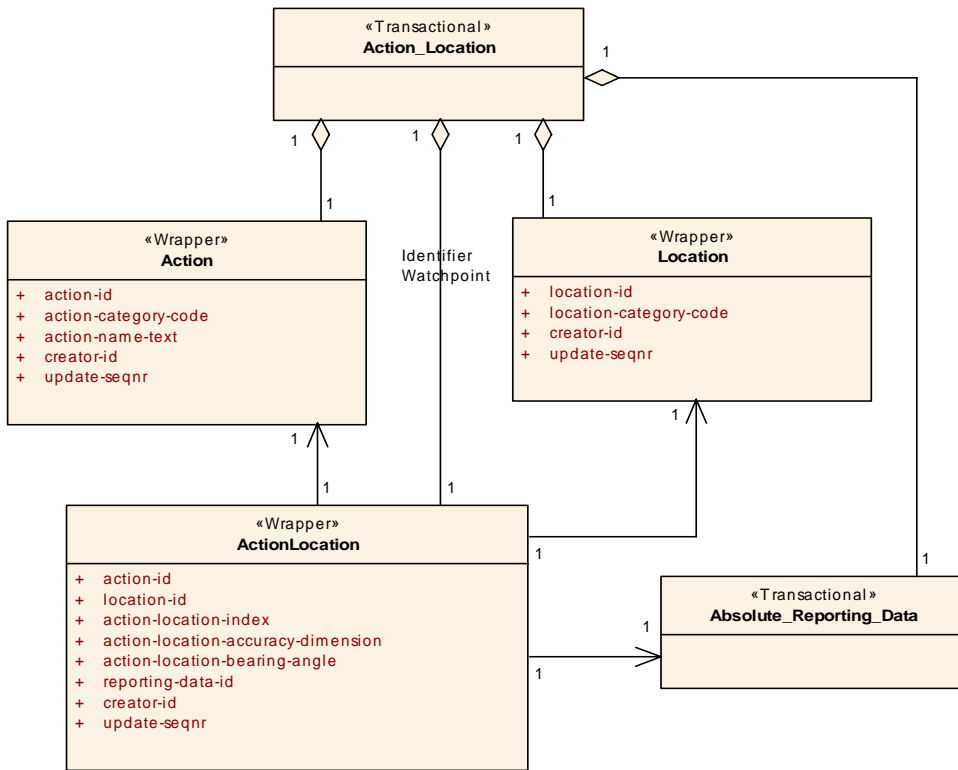


Figure 10.16 - Action_Location

10.1.17 Action_Objective

The Action_Objective Transactional Artifact captures information that specifies the focus of an individual action (planned or realized) in terms of the involved Object_Items, Object_Types, or Action_Tasks. Each of these subtypes of ActionObjective is enclosed and defined in a separate Transactional Artifact. As well, the Action_Objective Transactional Artifact encloses the Organisational_Item Transactional Artifact that captures information pertaining to the organization that authorized the execution of the action.

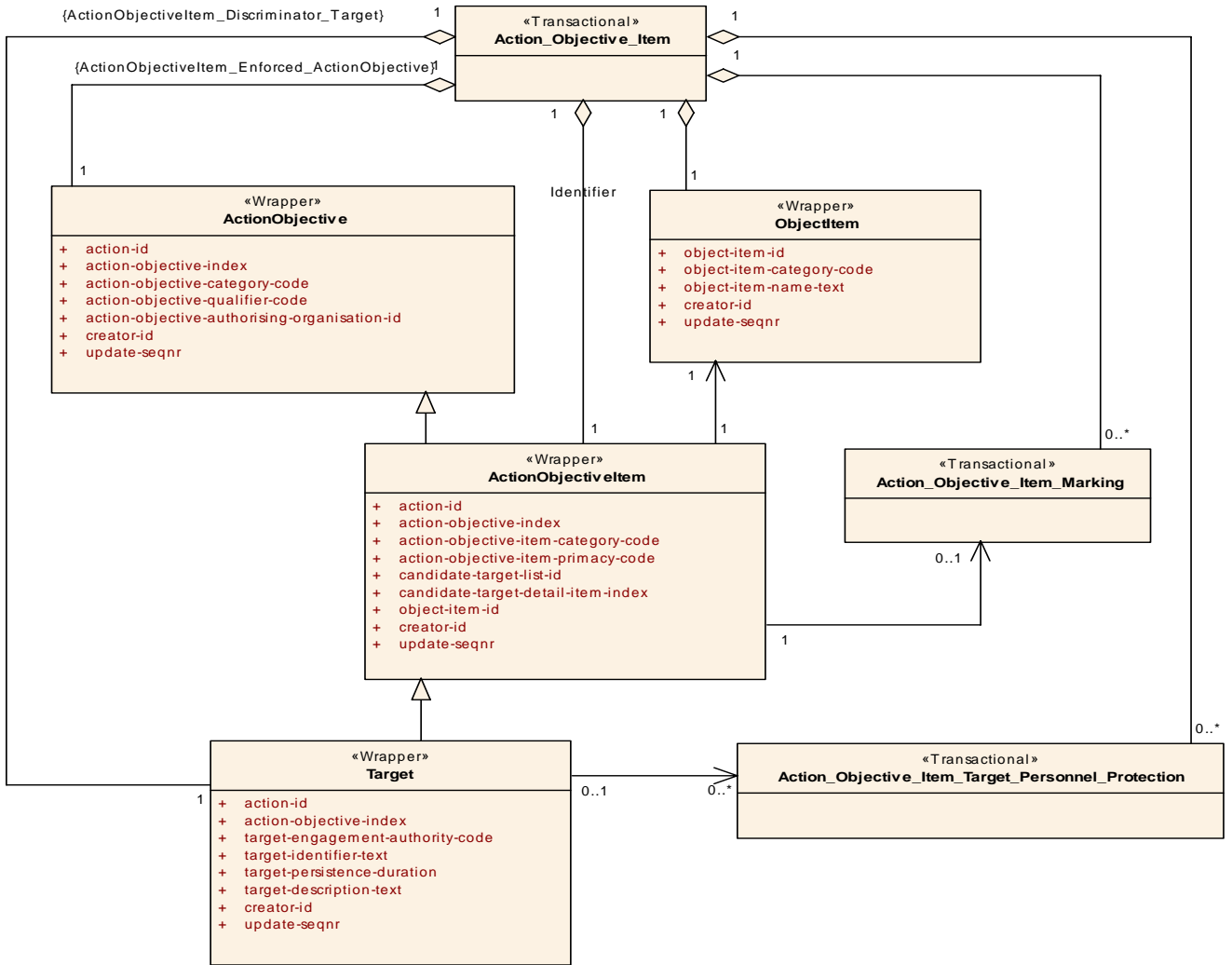


Figure 10.17 - Action_Objective_Item

10.1.18 Action_Objective_Item_Marking

The **Action_Objective_Item_Marking** Transactional Artifact is a support transactional for **Action_Objective** and captures information about a specific **Target** - a subtype of battle-space object (an **Object_Item**) that is the focus of an individual action (planned or realized). The information captured also includes the method by which the target was/is to be located (e.g., Flare, Laser, Radio Beacon, etc.) at a given time for the benefit of the using organization. Consequently, this Transactional Artifact encloses the **Organisational_Item** Transactional Artifact in order to capture the information pertaining to the using organization.

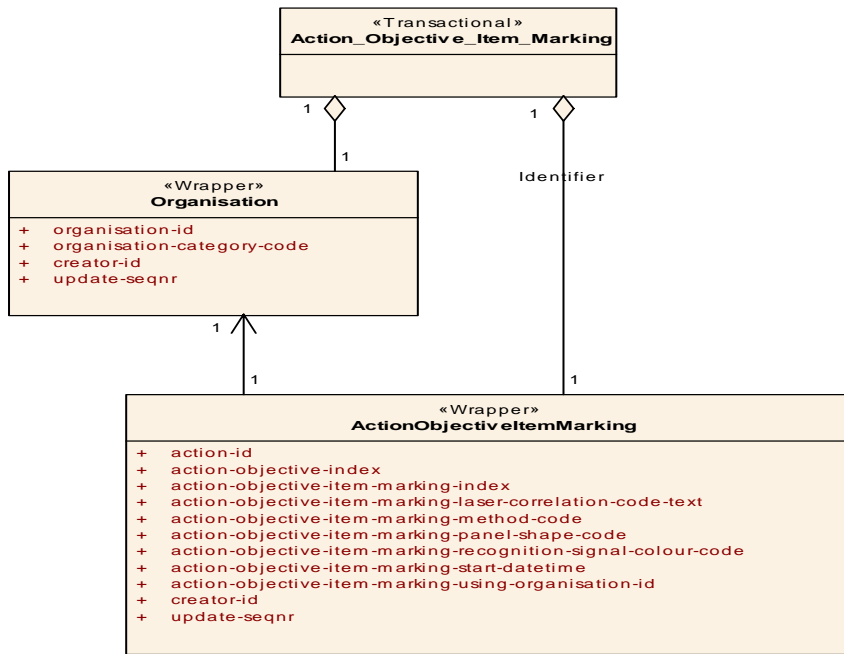


Figure 10.18 - Action_Objective_Item_Marking

10.1.19 Action_Objective_Item_Target_Personnel_Protection

The Action_Objective_Item_Target_Personnel_Protection Transactional Artifact is a support transactional for Action_Objective and captures information about the general protective posture with regard to the first and second volleys for a specific target and any changes in the state of this posture between these volleys. The protective posture refers to the states such as standing, prone, dug-in, and under cover.

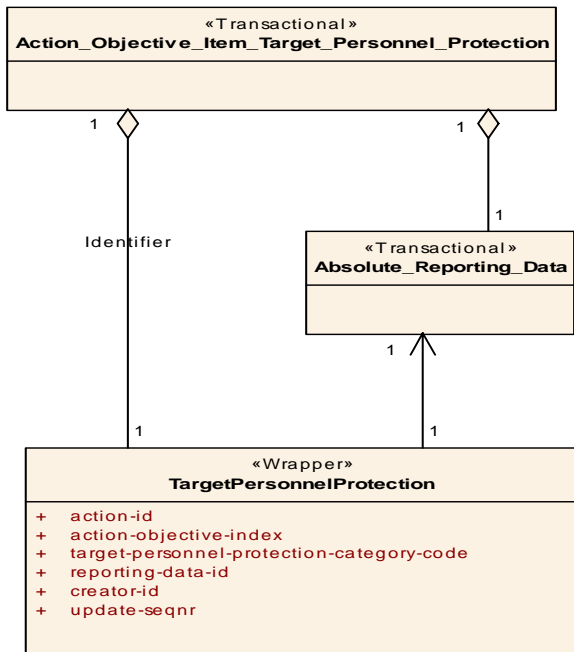


Figure 10.19 - Action_Objective_Item_Target_Personnel_Protection

10.1.20 Action_Objective_Task

The Action_Objective_Task Transactional Artifact is a support transactional for Action_Objective and captures information about the operation of a specific ActionTask that accomplishes the objective of the specific action.

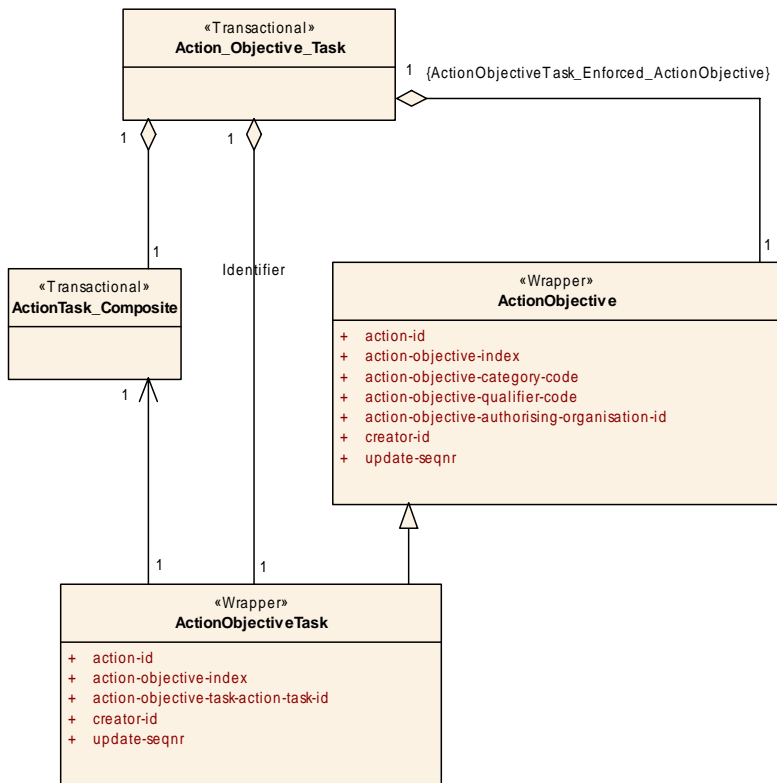


Figure 10.20 - Action_Objective_Task

10.1.21 Action_Objective_Type

The Action_Objective_Type Transactional Artifact is a support transactional for Action_Objective and captures information about the primary type of item that is the focus of an individual action (planned or realized). In the case of a target (e.g., armored fighting vehicles) the transactional also captures details of the imagery products (e.g., scale) that were/will be obtained from the reconnaissance operations involving these targets.

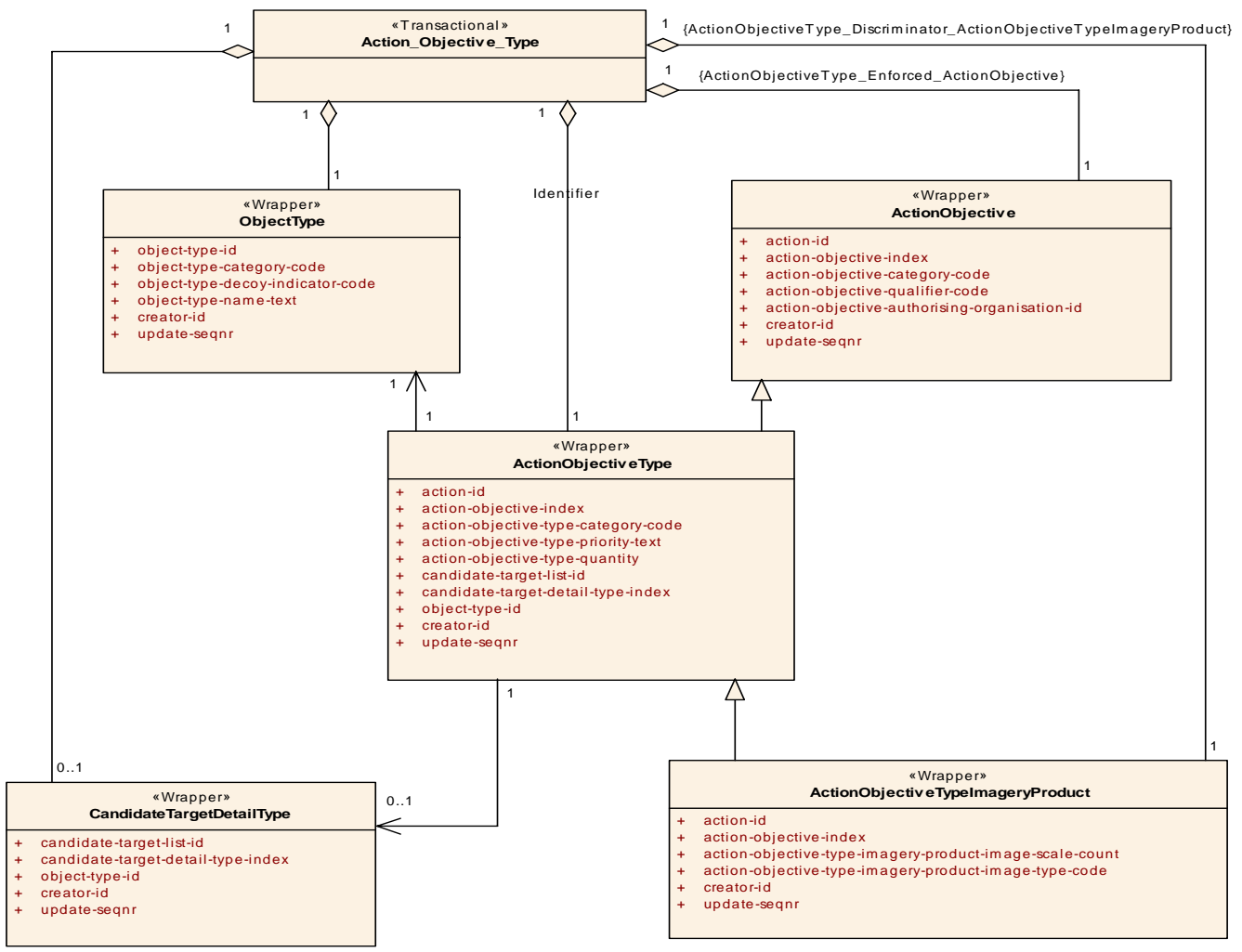


Figure 10.21 - Action_Objective_Type

10.1.22 Action_Reference_Assoc

The Action_Reference_Assoc Transactional Artifact captures information regarding the nature of the relationship between a specific action and a specific reference. For example, the action may be changed, defined, directed, etc. by different references. Because the reference information may have a security classification, this information is also included in this transactional.

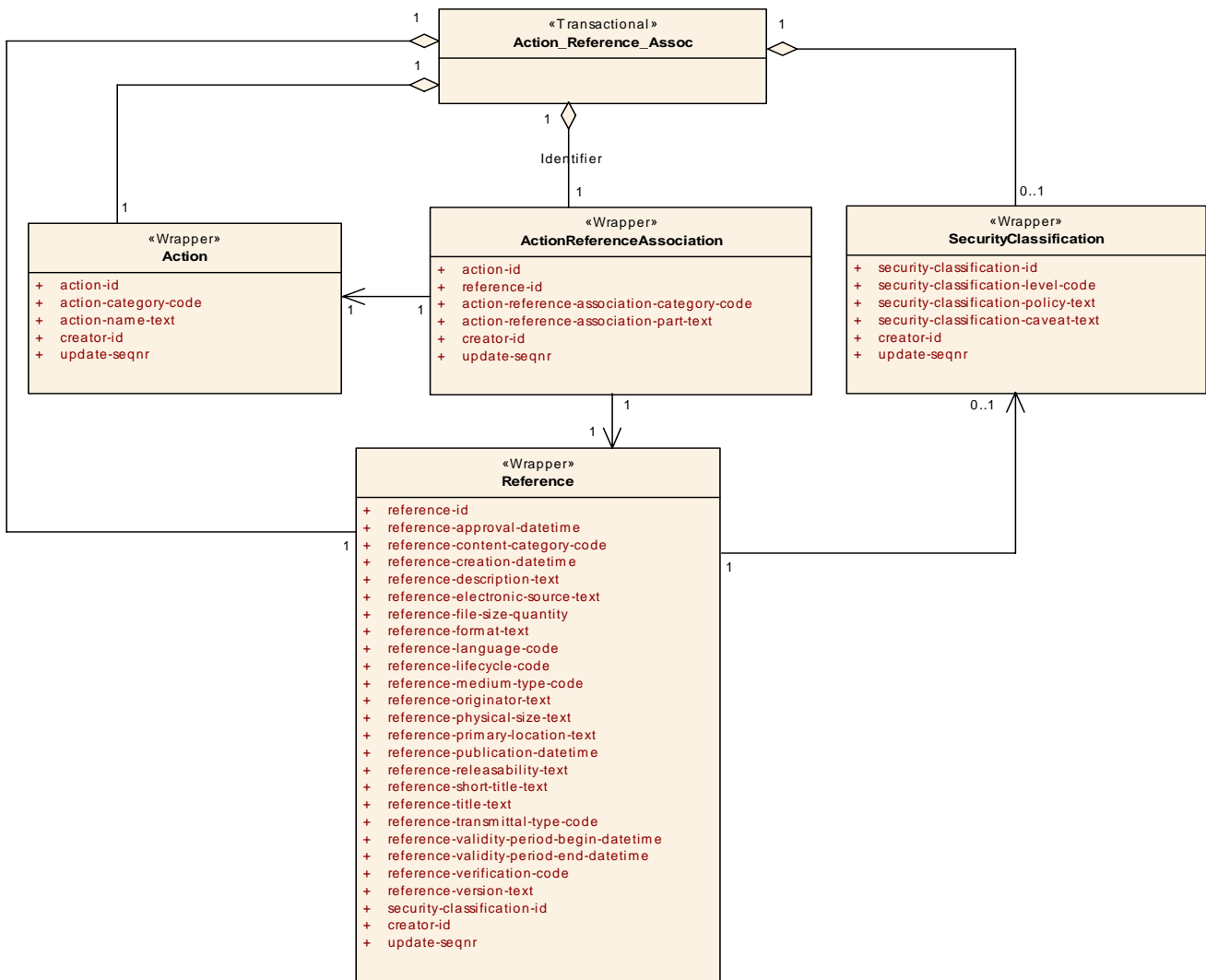


Figure 10.22 - Action_Reference_Assoc

10.1.23 Action_Required_Capability

The Action_Required_Capability Transactional Artifact captures information regarding the capability required of a resource for a specific action. The set of possible capabilities is specified in the support Transactional Artifact Capability_Composite, which is consequently, enclosed in this transactional Artifact.

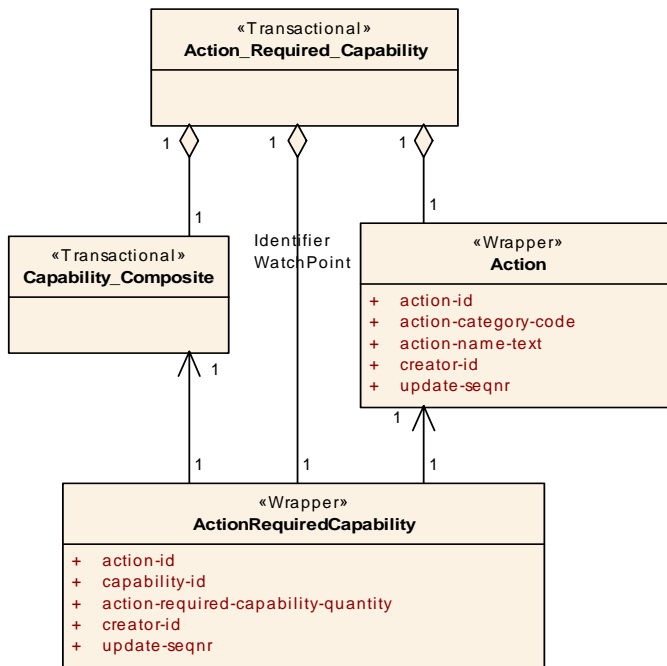


Figure 10.23 - Action_Required_Capability

10.1.24 Action_Resource

The Action_Resource Transactional Artifact captures information regarding the resources (Object_Items or Object_Types) that have been specified as things executing, things being used in or allocated to, or things whose use is qualified in some way in carrying out a specific action. This transactional encloses the Organisation_Item Transactional Artifact in order to capture the information pertaining to the organization that authorized the use of the resource in the action.

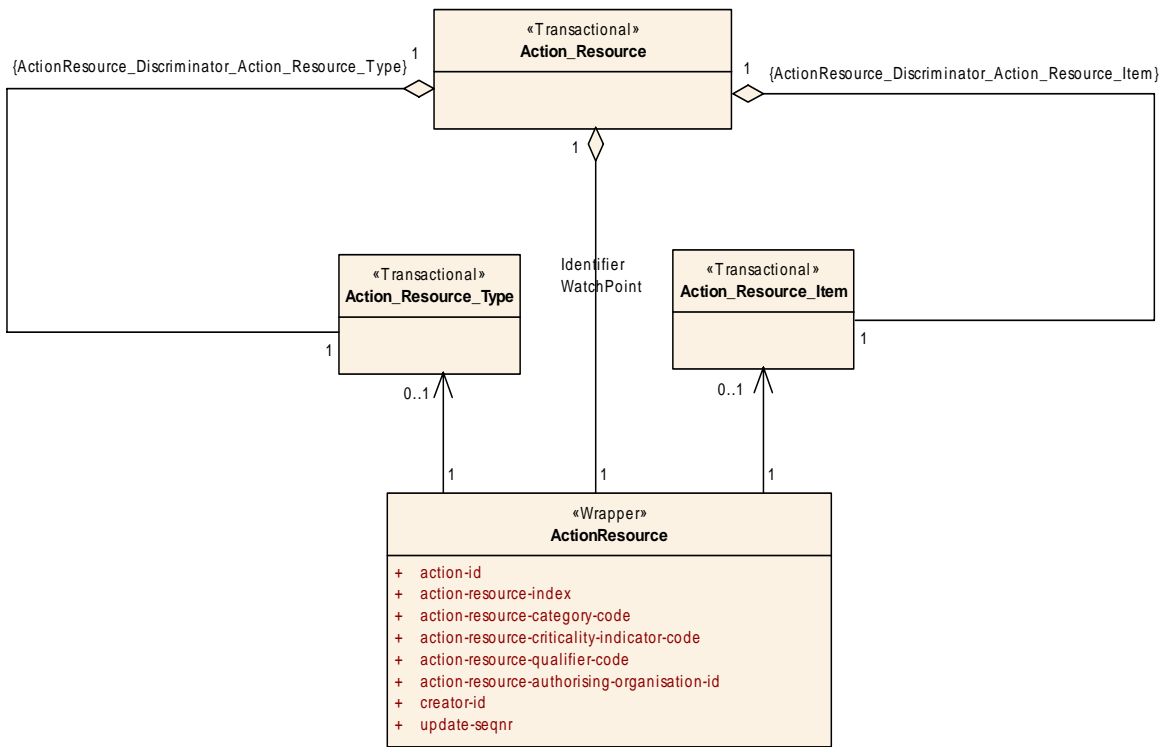


Figure 10.24 - Action_Resource

10.1.25 Action_Resource_Employment

The Action_Resource_Employment Transactional Artifact captures information regarding the procedure for using a specific resource (Object_Items or Object_Types) for a specific action, with or without dependence on a specific action-objective. The transactional encloses both the Action_Resource Transactional Artifact to capture details of the resource, and the Action_Objective Transactional Artifact to capture the details of the target.

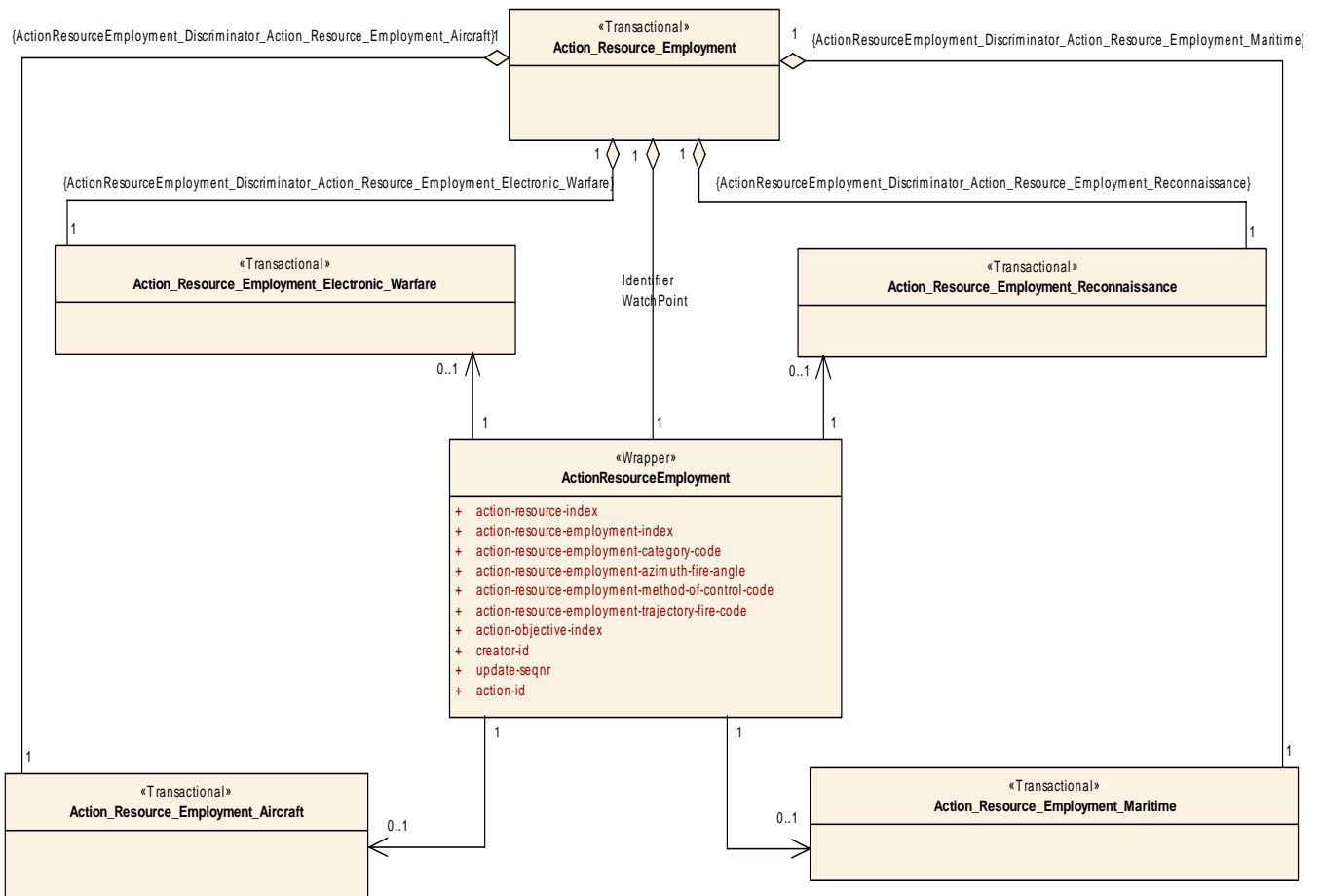


Figure 10.25 - Action_Resource_Employment

10.1.26 Action_Resource_Employment_Aircraft

The Action_Resource_Employment_Aircraft Transactional Artifact captures information regarding the procedure that guides the use of an action-resource that is capable of atmospheric flight.

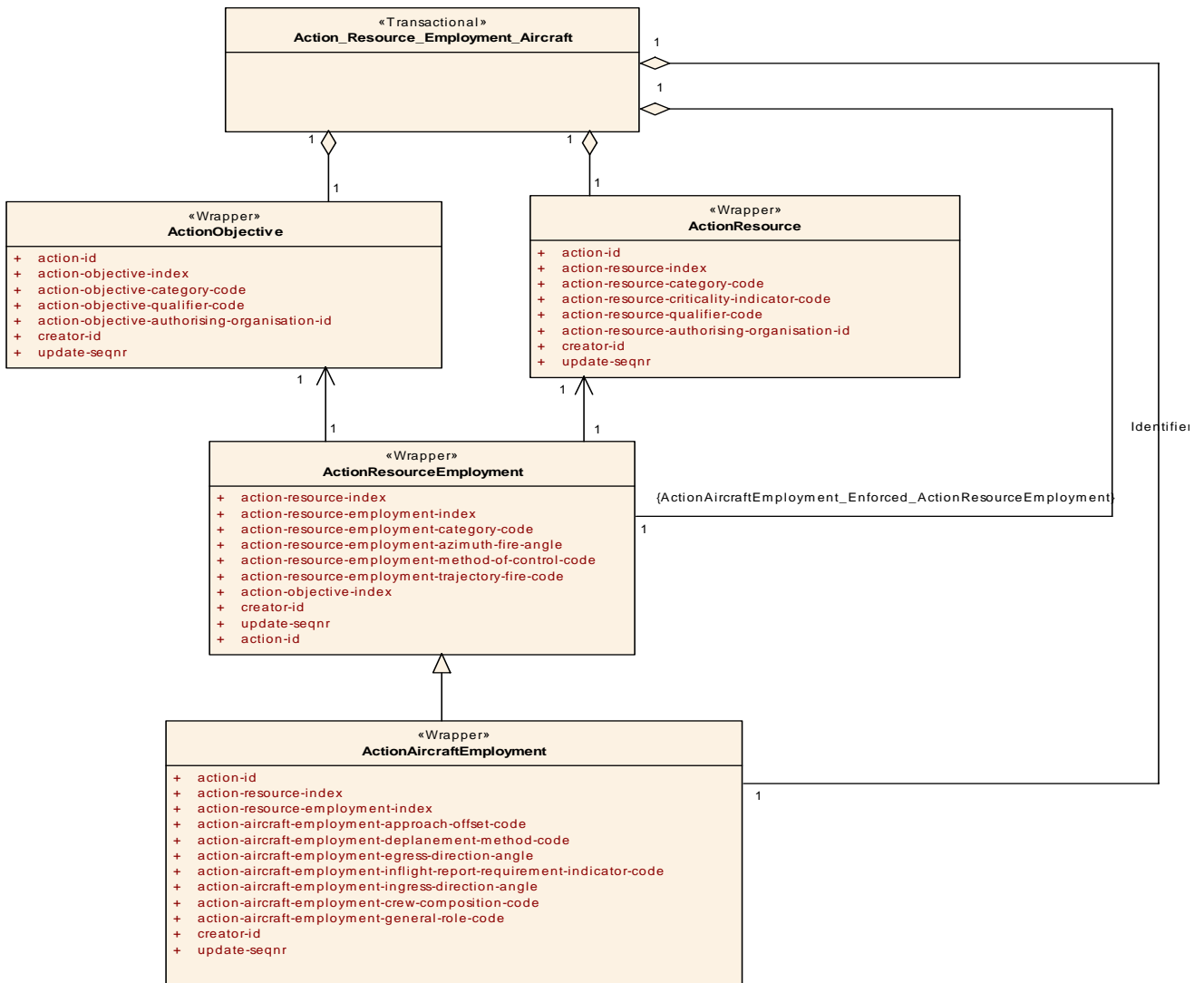


Figure 10.26 - Action_Resource_Employment_Aircraft

10.1.27 Action_Resource_Employment_Electronic_Warfare

The Action_Resource_Employment_Electronic_Warfare Transactional Artifact captures information regarding the technique used by an action-resource for Electronic Warfare by electronic or mechanical means.

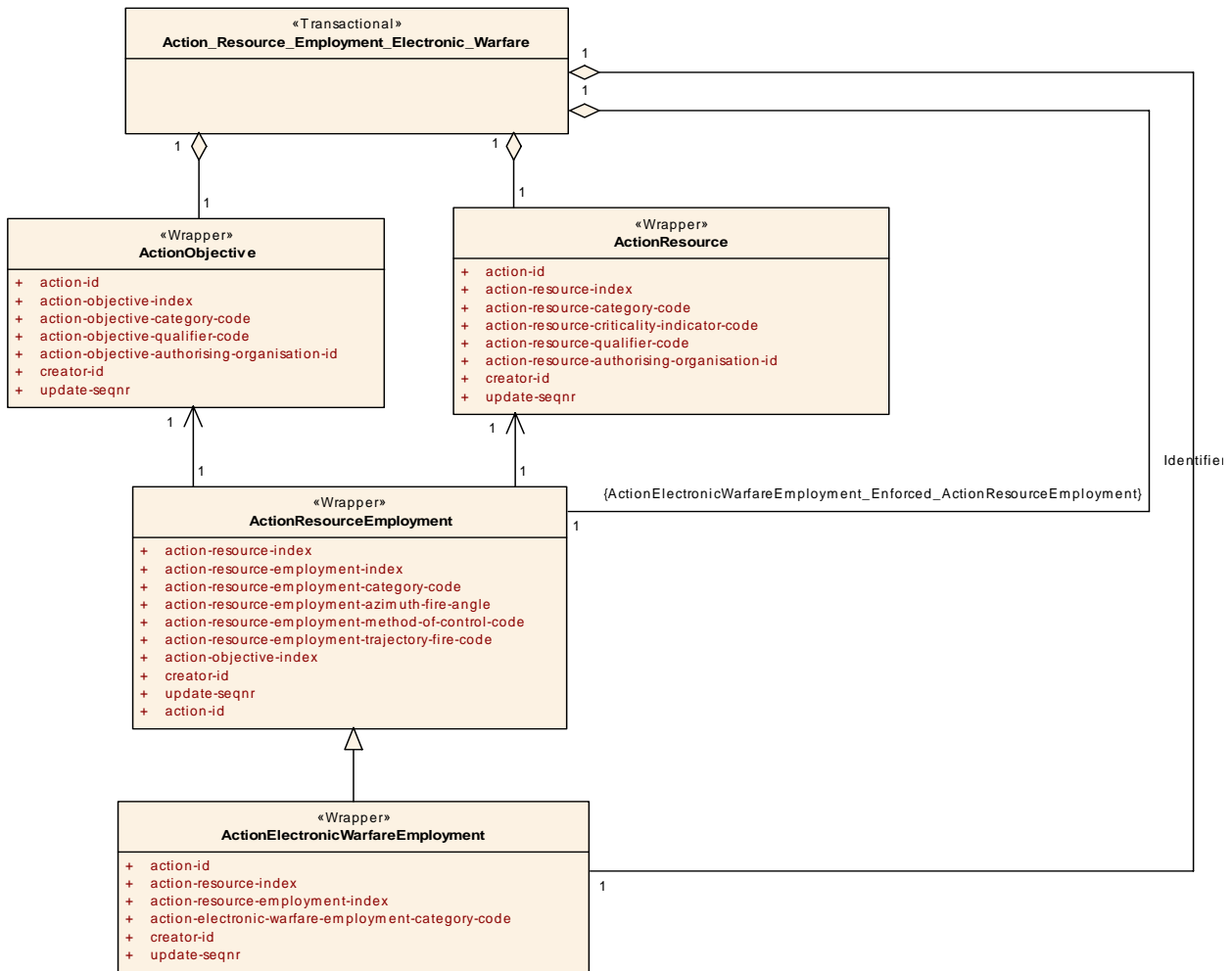


Figure 10.27 - Action_Resource_Employment_Electronic_Warfare

10.1.28 Action_Resource_Employment_Maritime

Transactional Artifact captures information regarding the procedure that guides the use of an action-resource in a maritime environment.

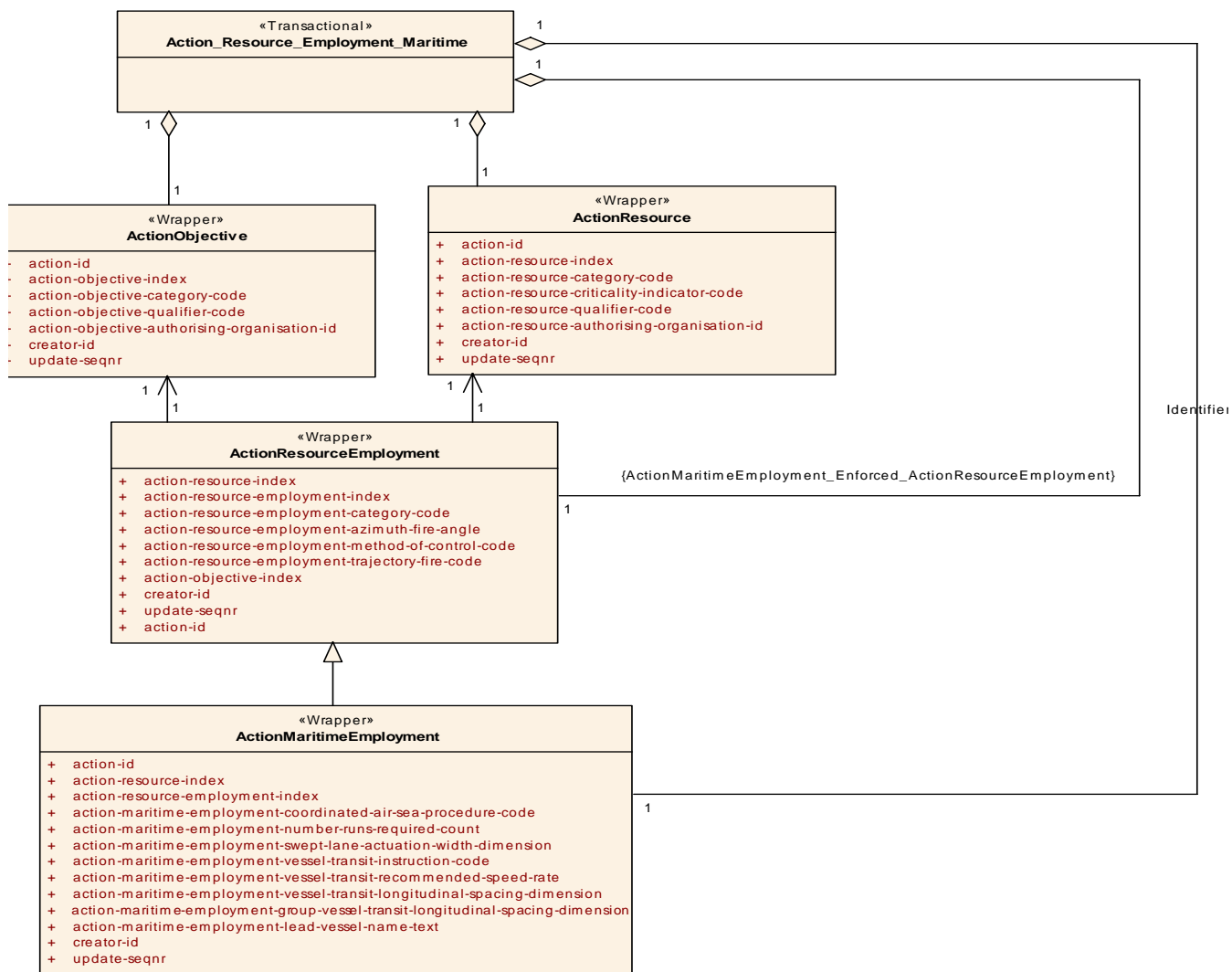


Figure 10.28 - Action_Resource_Employment_Maritime

10.1.29 Action_Resource_Employment_Reconnaissance

The Action_Resource_Employment_Reconnaissance Transactional Artifact captures information regarding the parameters that guide the use of an action-resource that is employed in a reconnaissance role.

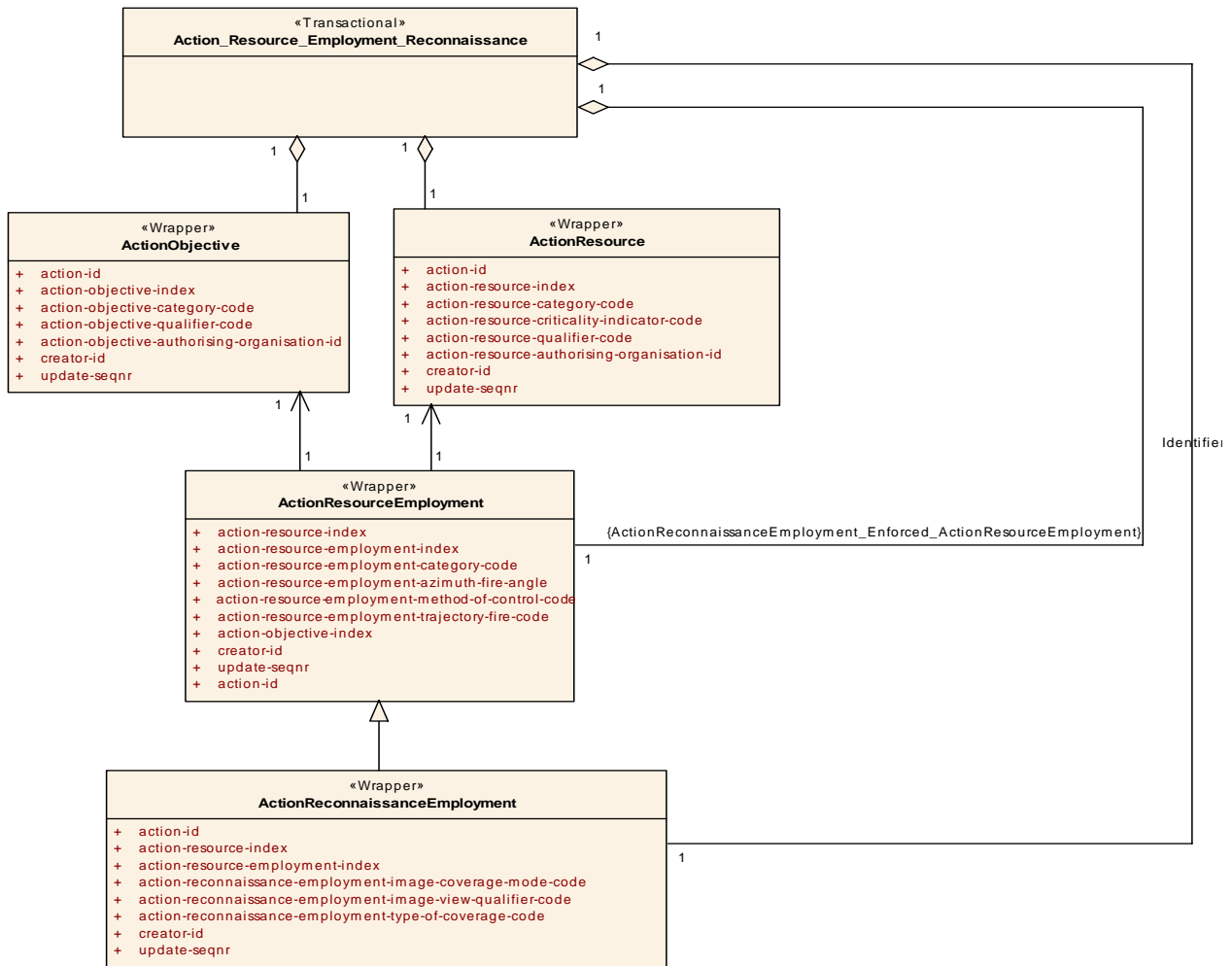


Figure 10.29 - Action_Resource_Employment_Reconnaissance

10.1.30 Action_Resource_Item

The Action_Resource_Item Transactional Artifact captures information regarding the resources (Object_Items) that have been specified as things executing, things being used in or allocated to, or things whose use is qualified in some way in the conduct of a specific action.

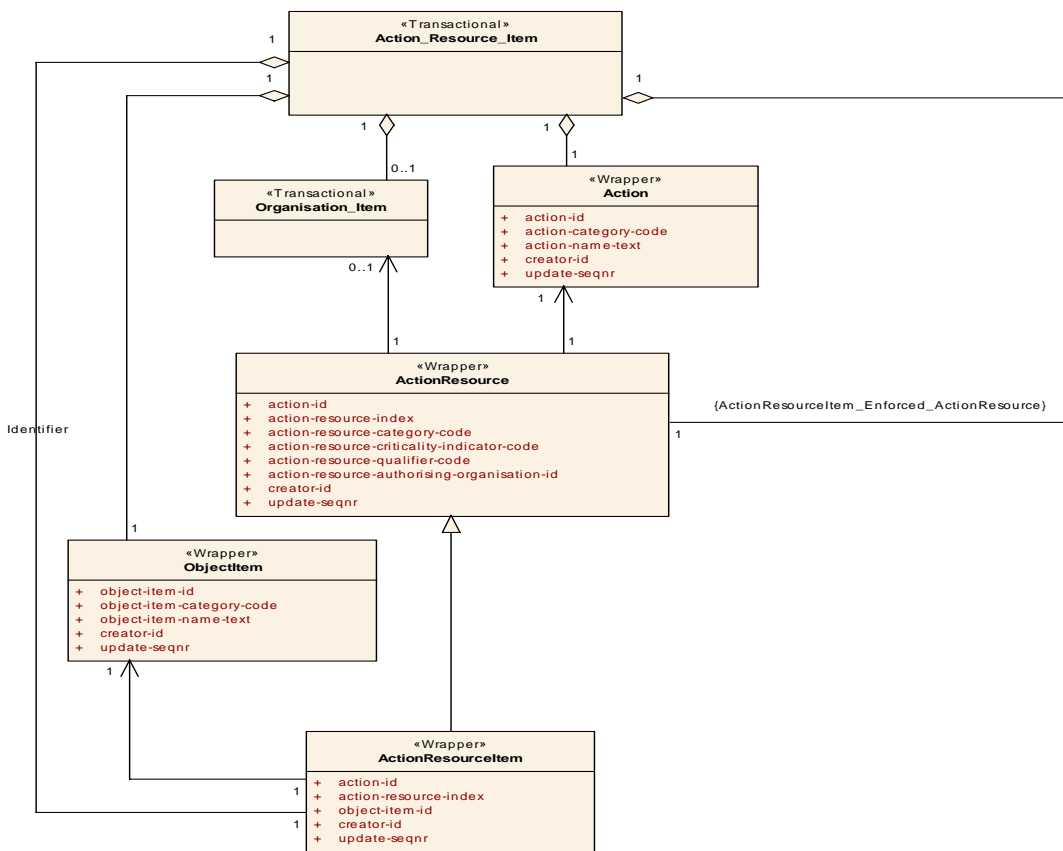


Figure 10.30 - Action_Resource_Item

10.1.31 Action_Resource_Type

The Action_Resource_Type Transactional Artifact captures information regarding the resources (Object_Types) that have been specified as things executing, things being used in or allocated to, or things whose use is qualified in some way in the conduct of a specific action.

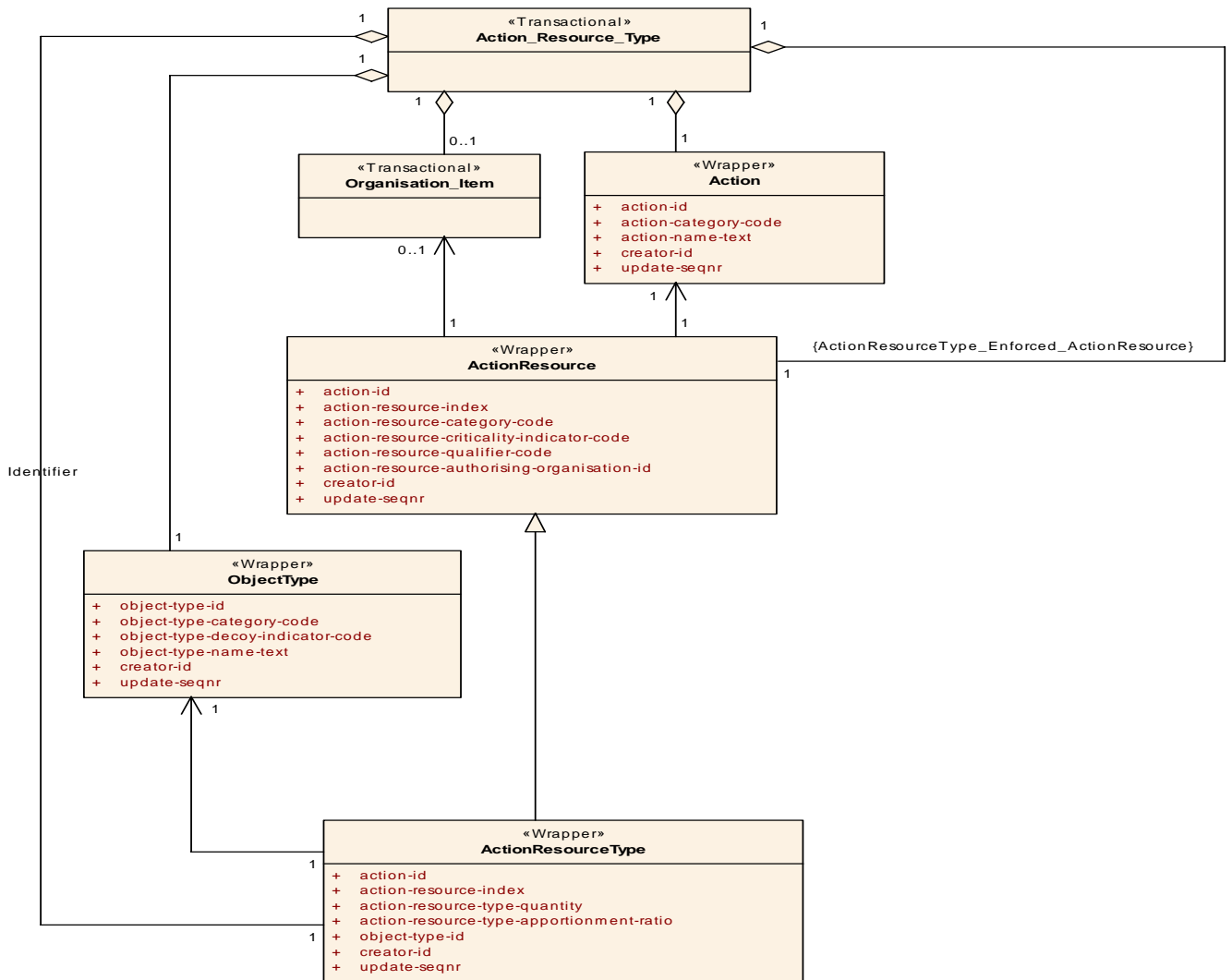


Figure 10.31 - Action_Resource_Type

10.1.32 ActionTask_Composite

The ActionTask_Composite Transactional Artifact captures the planning details of a specific action or activity (planned or realized), such as those typically found in plans, orders and requests. A request is a type of ActionTask normally soliciting information about an activity, situation, or entity. Requests for reconnaissance and surveillance information are supported by this transactional, as is a CandidateTargetList that contains the objective of the activity. The transactional encloses the Organisational_Structure Transactional Artifact to capture information about the structure of the organization or task force established to conduct the specific action or activity.

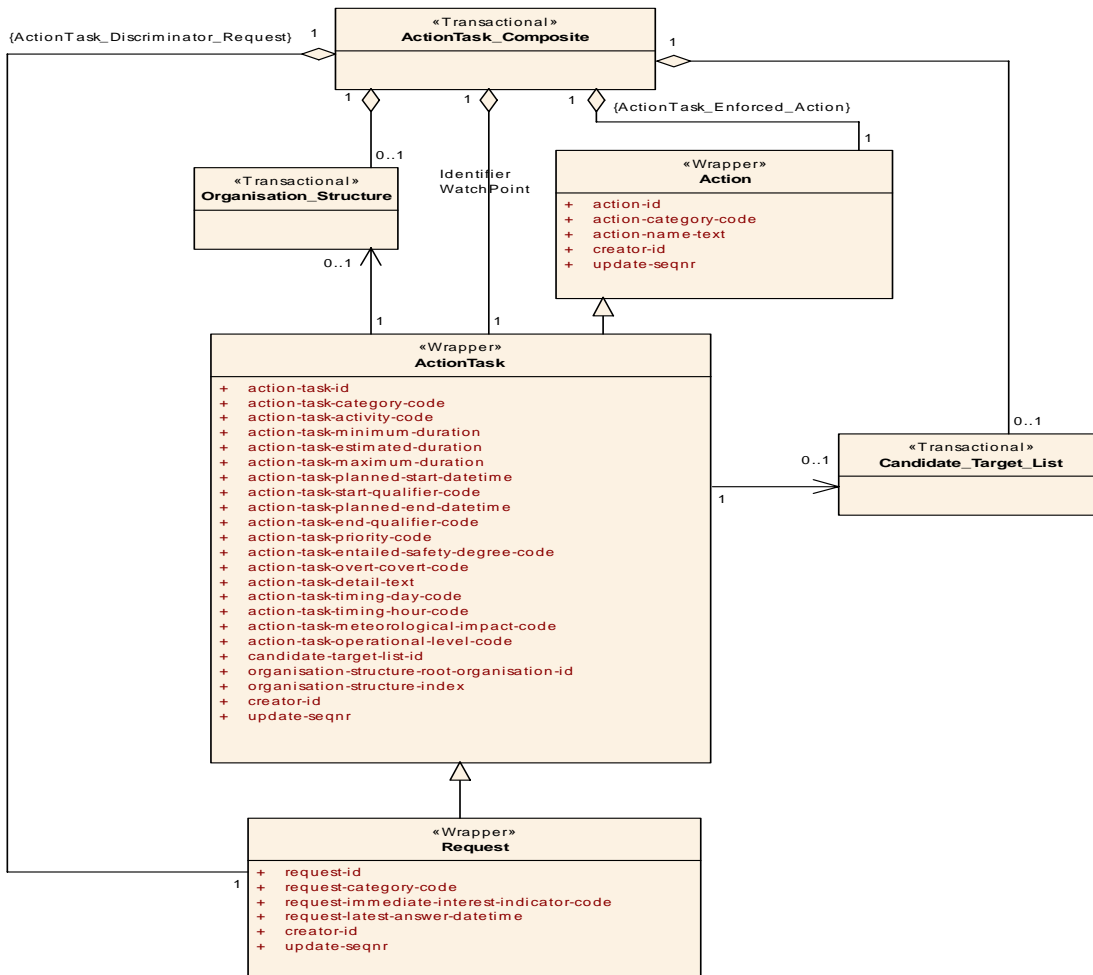


Figure 10.32 - ActionTask_Composite

10.1.33 ActionTask_Status

The ActionTask_Status Transactional Artifact captures the perceived appraisal of the planning and execution progress of a specific action task as determined by the reporting organization. The transactional encloses both the ActionTask_Composite Transactional Artifact to relate the status of the action task to the action itself, and the Absolute_Reporting_Data Transactional Artifact in which information about the progress estimate is captured.

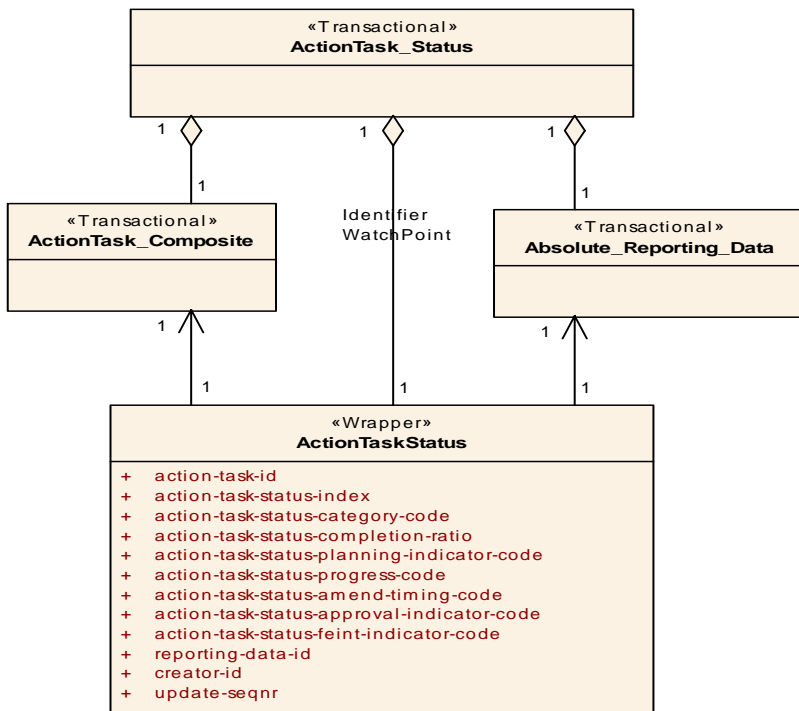


Figure 10.33 - ActionTask_Status

10.1.34 ActionTask_ROE

The ActionTask_ROE Transactional Artifact captures the engagement rules (mandatory guidance specified) that apply to the execution of a specific action or activity. The rules are authorized by an authorizing organization, which is also included in the transactional.

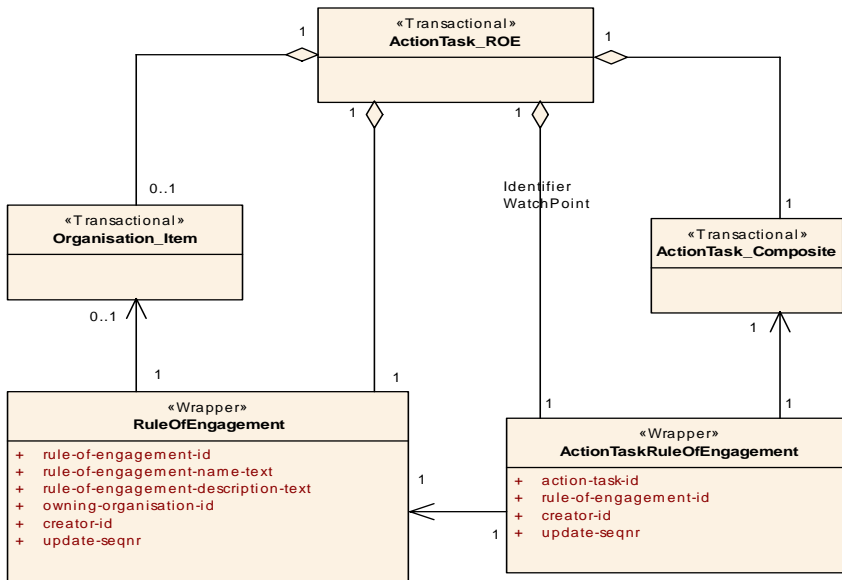


Figure 10.34 - ActionTask_ROE

10.1.35 Action_Temporal_Assoc

The Action_Temporal_Association Transactional Artifact captures information regarding the temporal association (dependency) between a pair of individual actions. These provide a means to create more complex sets or sequences of activities, such as those represented by an operational plan or order. Examples of temporal associations include: starts after end of, starts after start of, ends after start of, etc.

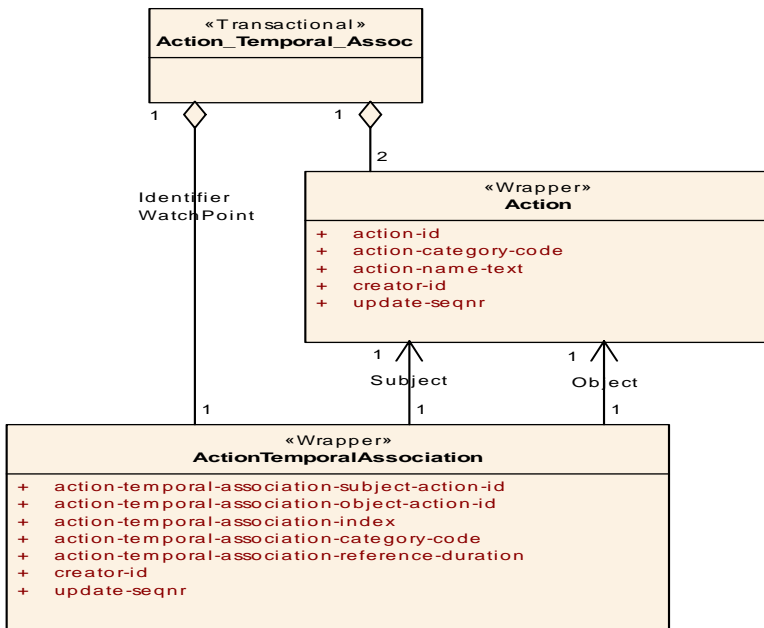


Figure 10.35 - Action_Temporal_Assoc

10.1.36 Associated_Target_Detail

The Associated_Target_Detail Transactional Artifact captures the minimum acceptable information to allow two instances of TargetDetail to be assigned as linked elements in a specialized relationship.

Associated_Target_Detail is a support transactional of Transactional Artifact Candidate_Target_Detail_Assoc.

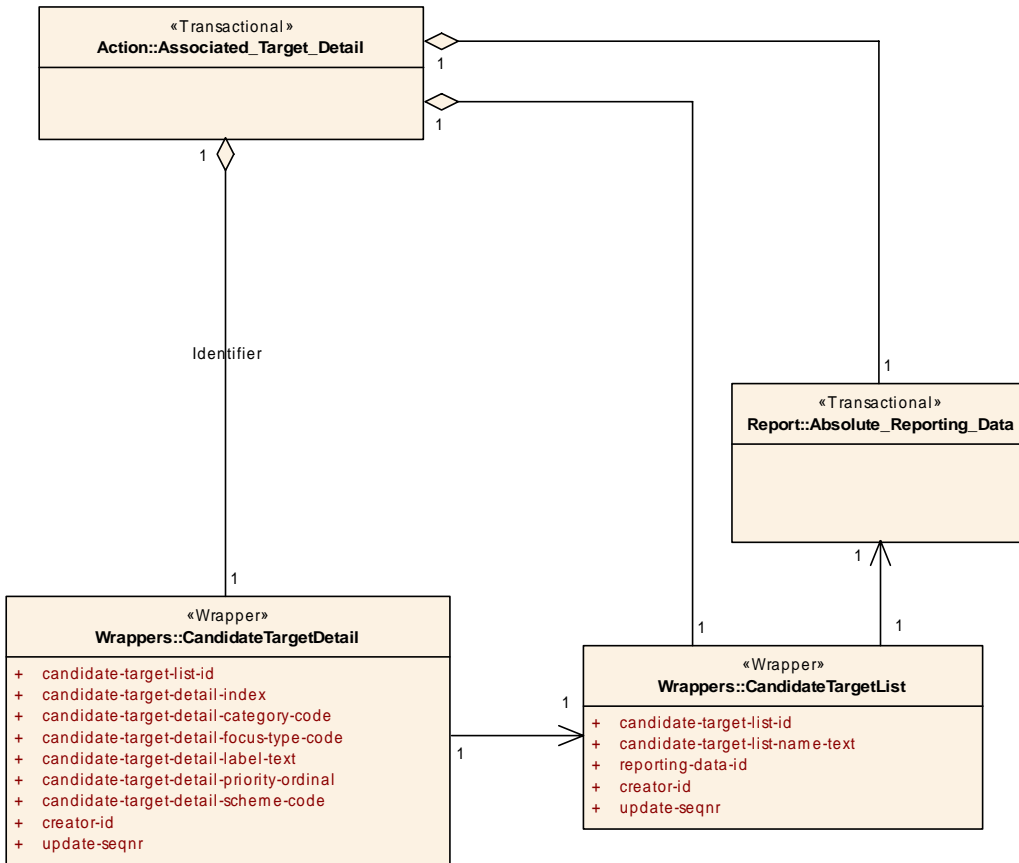


Figure 10.36 - Associated_Target_Detail

10.1.37 Candidate_Target_Detail

The Candidate_Target_Detail Transactional Artifact captures information about an individual element on a CandidateTargetList (i.e., a Target). The information captured about the Target includes its specification as a unique Object_Item or Object_Type, the general class of actions intended by the nominating organization to be conducted against it, and the priority for doing so. This transactional encloses the Candidate_Target_Detail_Authorisation Transactional Artifact in order to capture the information pertaining to the organization(s) that designated the objective (target) as approved in planning battle-space activities.

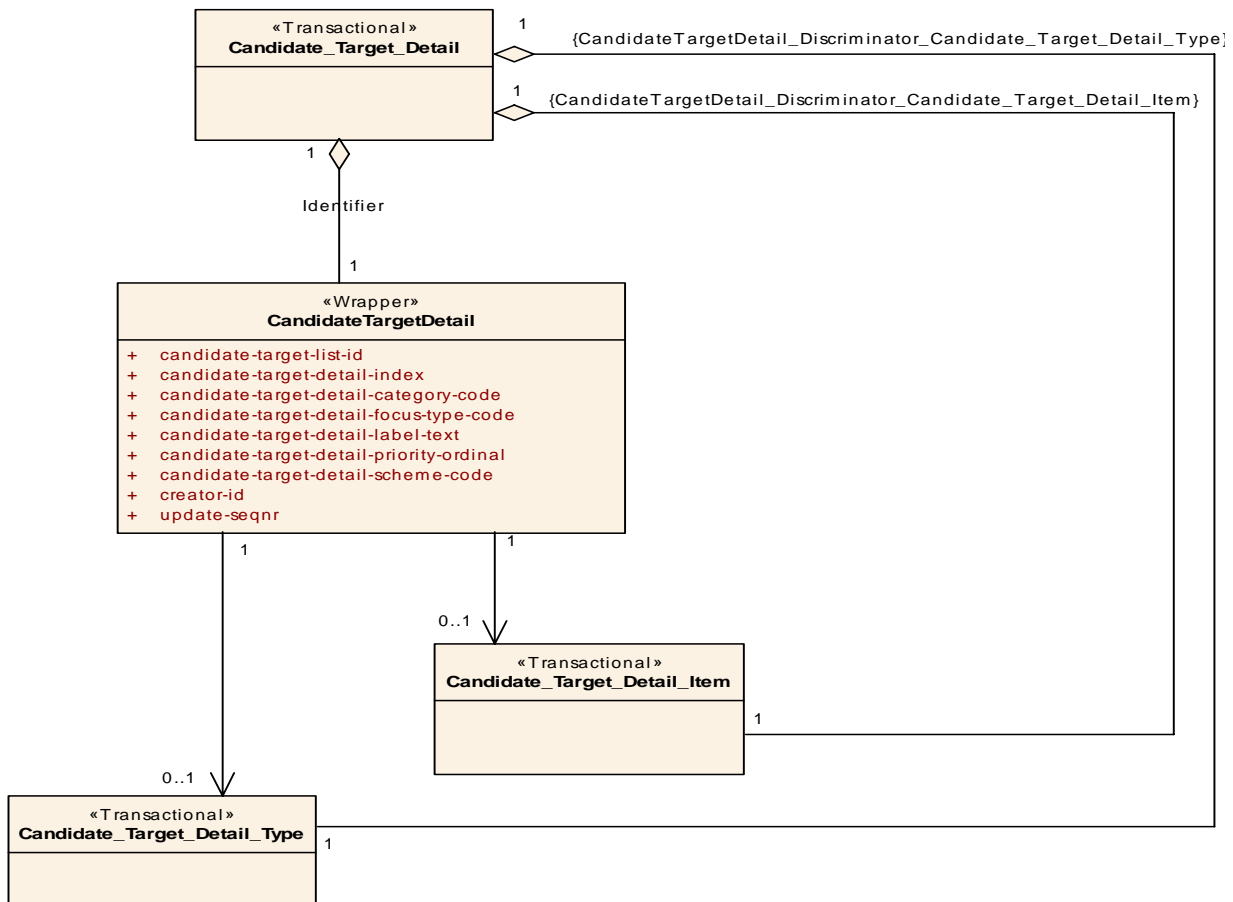


Figure 10.37 - Candidate_Target_Detail

10.1.38 Candidate_Target_Detail_Assoc

The Candidate_Target_Detail_Assoc Transactional Artifact captures information about the relationship between a pair of elements of a CandidateTargetList (i.e., a pair of Targets). The information captured specifies the nature of the relationship; for example the two targets might be co-located.

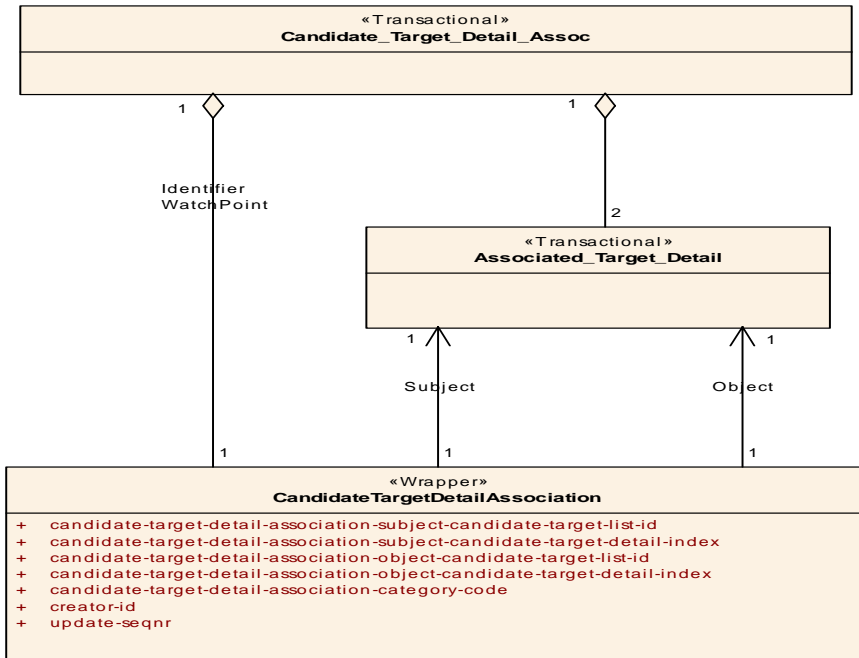


Figure 10.38 - Candidate_Target_Detail_Assoc

10.1.39 Candidate_Target_Detail_Authorisation

The Candidate_Target_Detail_Authorisation Transactional Artifact captures information about the designation by a competent authority of an instance of a Candidate_Target_Detail (i.e., a Target) as an approved objective in battle-space planning activities. Multiple instances of authorization may be recorded where there are different views of the desired outcome. This transactional encloses the Absolute_Reporting_Data Transactional Artifact in which information about the authorisation is captured.

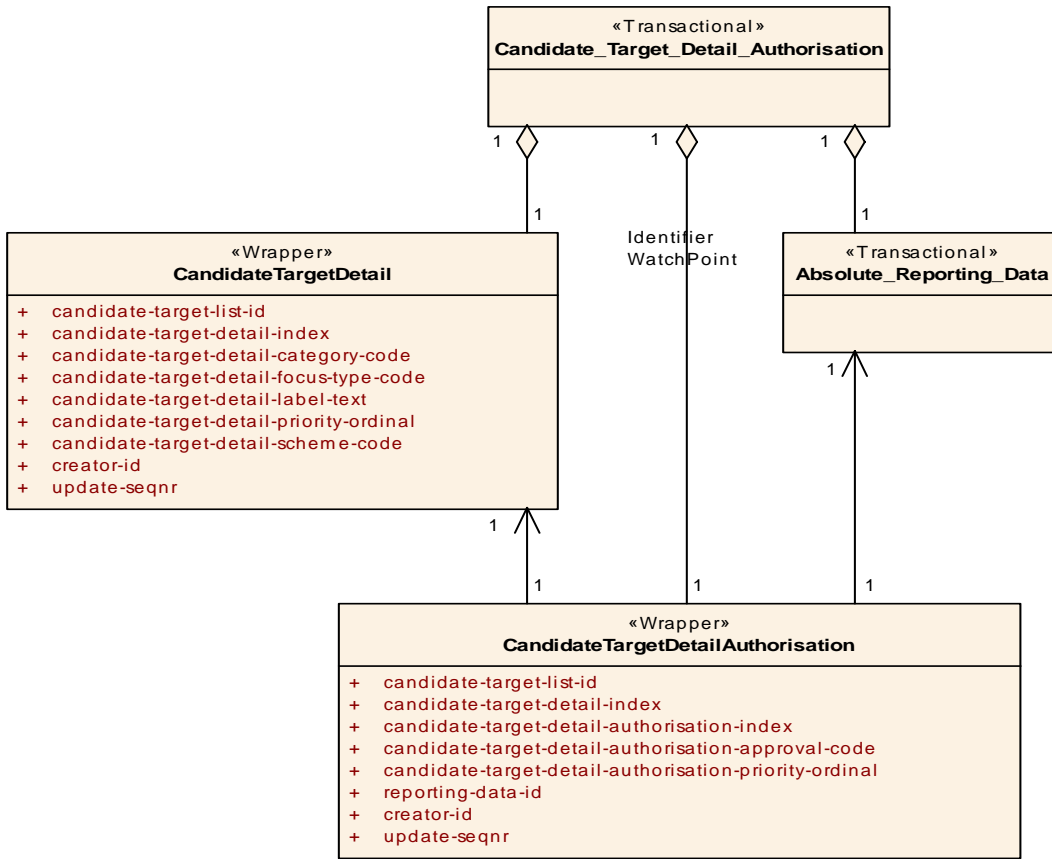


Figure 10.39 - Candidate_Target_Detail_Authorisation

10.1.40 Candidate_Target_Detail_Item

The Candidate_Target_Detail_Item Transactional Artifact captures information about an instance of a Candidate_Target_Detail (i.e., a Target) that is an object-item, enabling the specific instance to be identified as such.

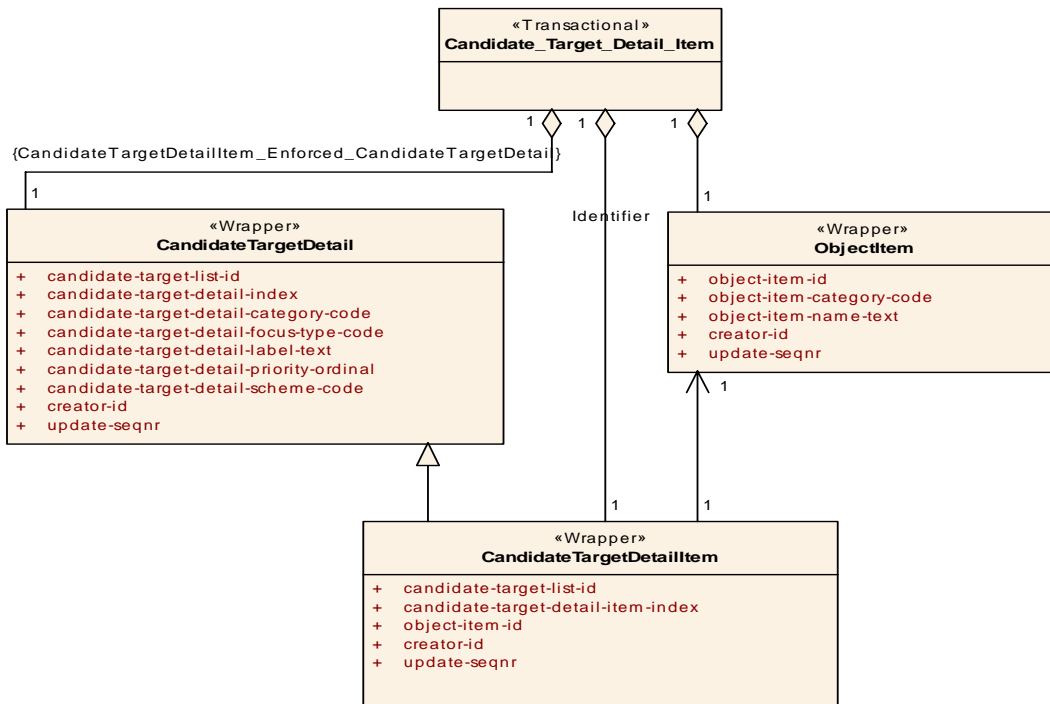


Figure 10.40 - Candidate_Target_Detail_Item

10.1.41 Candidate_Target_Detail_Type

The Candidate_Target_Detail_Type Transactional Artifact captures information about an instance of a Candidate_Target_Detail (i.e., a Target) that is an object-type, enabling the specific instance to be identified as such.

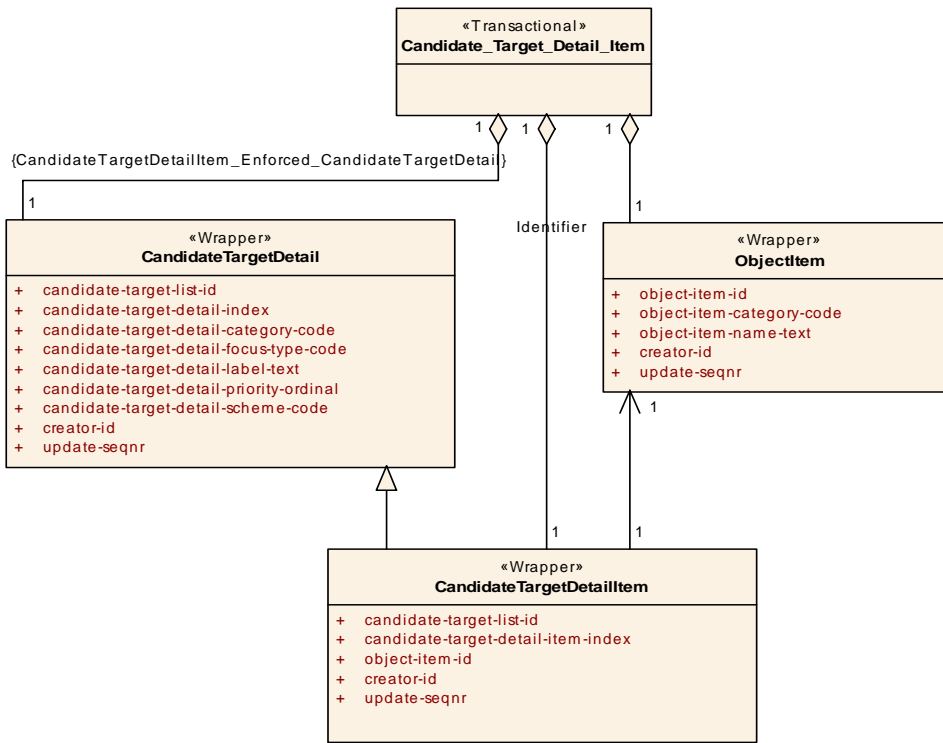


Figure 10.41 - Candidate_Target_Detail_Type

10.1.42 Candidate_Target_List

The Candidate_Target_List Transactional Artifact captures information about the set of battle-space objects or types that have potential value for destruction or exploitation (i.e., potential targets) nominated by competent authority for consideration in battle-space planning activities. The transactional enclosed three supporting Transactional Artifacts. The first is Candidate_Target_Detail (normally there are multiple instances of this), each of which captures information about an individual element (i.e., the potential target) on the list. The second is Absolute_Reporting_Data in which information about the list creation is captured, and the third is Candidate_Target_List_Authorisation, which captures information about the approval(s) of the list as a source of objectives in battle-space planning activities.

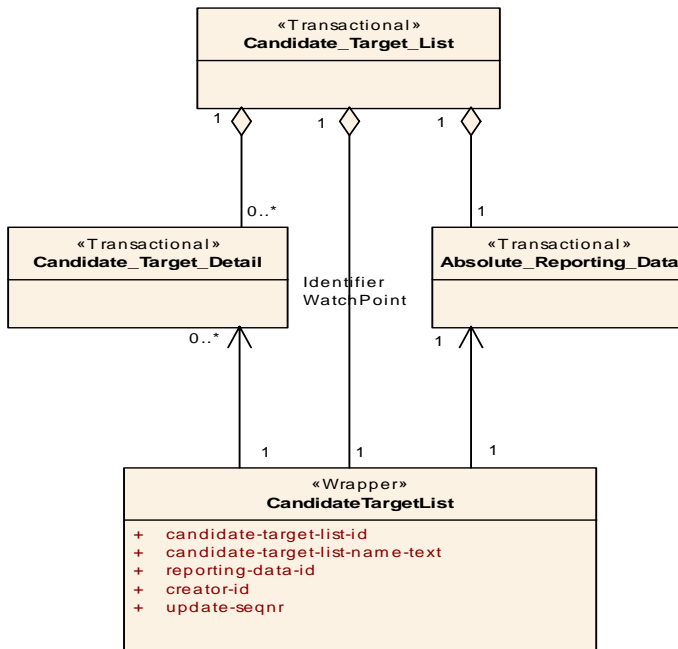


Figure 10.42 - Candidate_Target_List

10.1.43 Candidate_Target_List_Assoc

The Candidate_Target_List_Assoc Transactional Artifact captures information about the relationship between a pair of CandidateTargetList. The information captured specifies the nature of the relationship; for example one of the lists might incorporate parts of or replace the other.

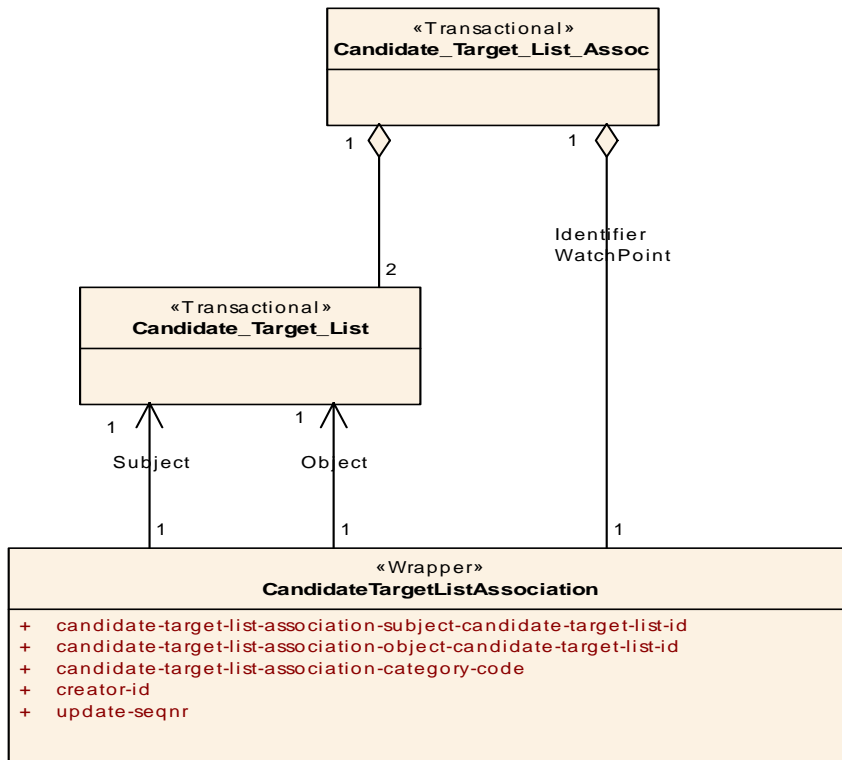


Figure 10.43 - Candidate_Target_List_Assoc

10.1.44 Candidate_Target_List_Authorisation

The Candidate_Target_List_Authorisation Transactional Artifact captures information about the designation by a competent authority of a CandidateTargetList as an approved source of objectives in battle-space planning activities. Multiple instances of authorization may be recorded where there are different views of the functional needs among the authorizers. This transactional encloses the Absolute_Reporting_Data Transactional Artifact in which information about the authorisation is captured.

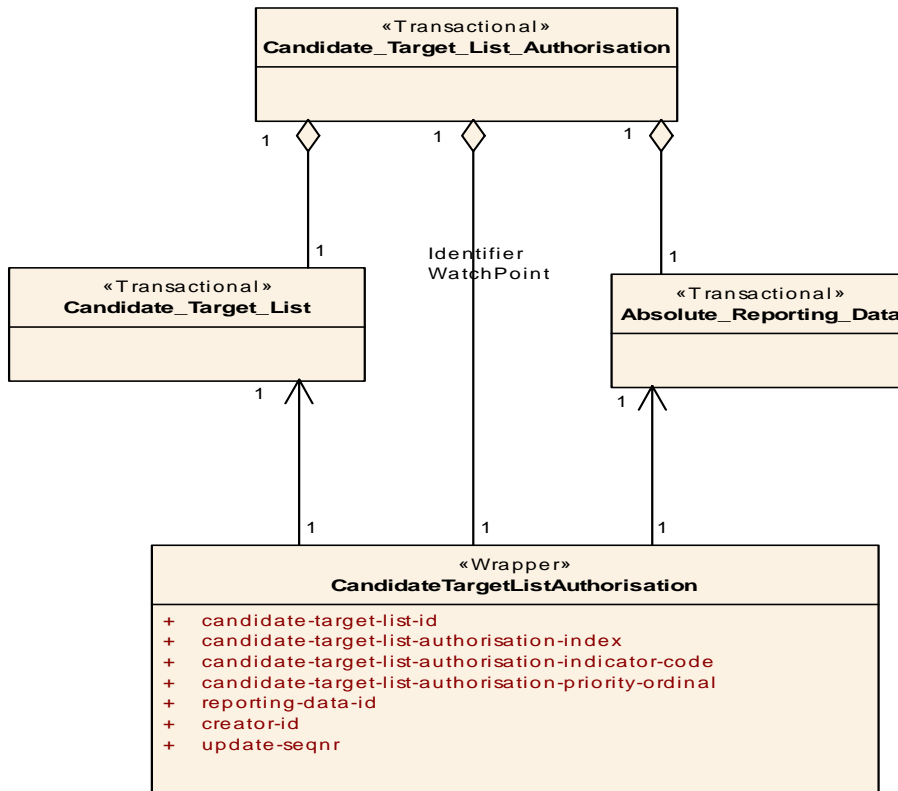


Figure 10.44 - Candidate_Target_List_Authorisation

10.1.45 Request_Answer

The Request_Answer Transactional Artifact captures information about the nature of a response to a specific Request. Because the answer to a Request may consist of a number of items of dynamic data each of which is linked to a Reporting Data instance, an associative entity is included to identify the items that constitute a response. This transactional also encloses two instances of the Absolute_Reporting_Data Transactional Artifact in which information about both the Request_Answer report and the cited dynamic data reports are captured.

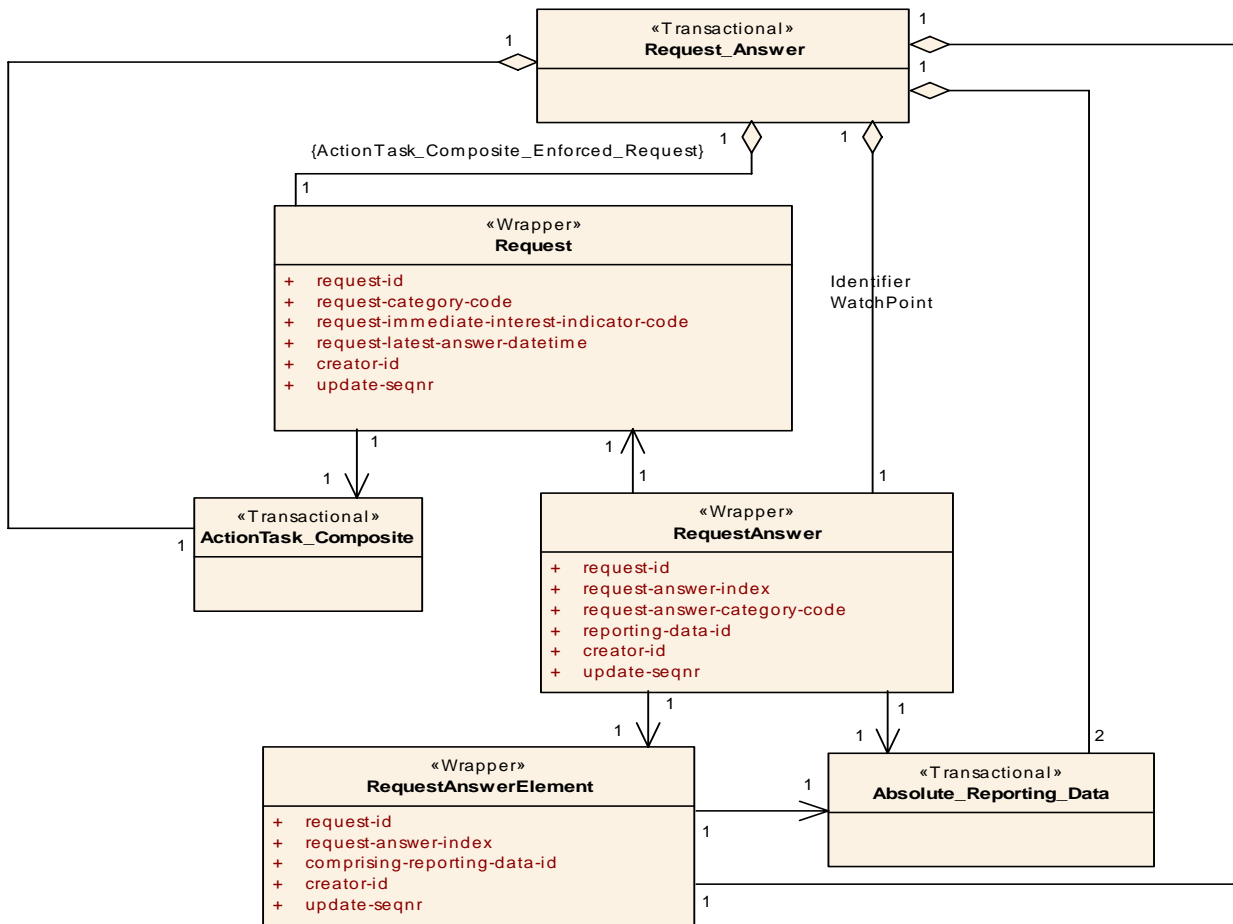


Figure 10.45 - Request_Answer

10.2 Capability

This package focuses on information exchange policy related to defining and specifying a capability in terms of JC3IEDM information elements.

10.2.1 Capability_Composite

The Capability_Composite Transactional Artifact captures information about generic capabilities (the potential ability to do work, perform a function or mission, achieve an objective or provide a service) that can be ascribed to the types of objects in the battle-space. The transactional encloses four support transactionals (EngineeringCapability_Type, FireCapability_Type, StorageCapability_Type, and TransmissonCapability_Type) that provide further information about these specific capabilities when they are ascribed to the types of objects in the battle-space.

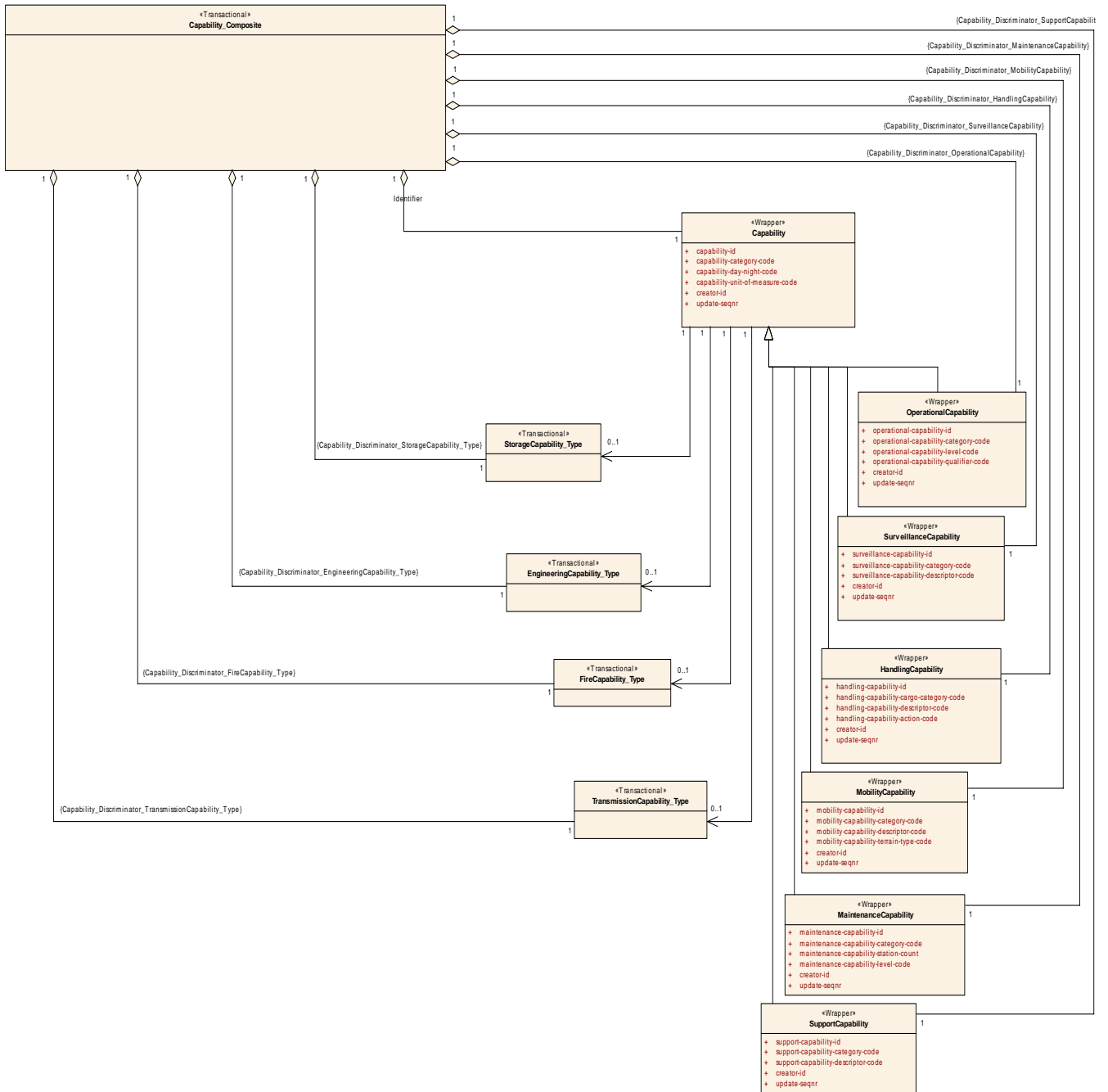


Figure 10.46 - Capability_Composite

10.2.2 Capability_Reference_Assoc

The Capability_Reference_Assoc Transactional Artifact captures information about the nature of the association between a specific capability and a specific reference. The domain values are: is amplified by, is defined in, and is described by. Because the reference information may have a security classification, this information is also included in this transactional.

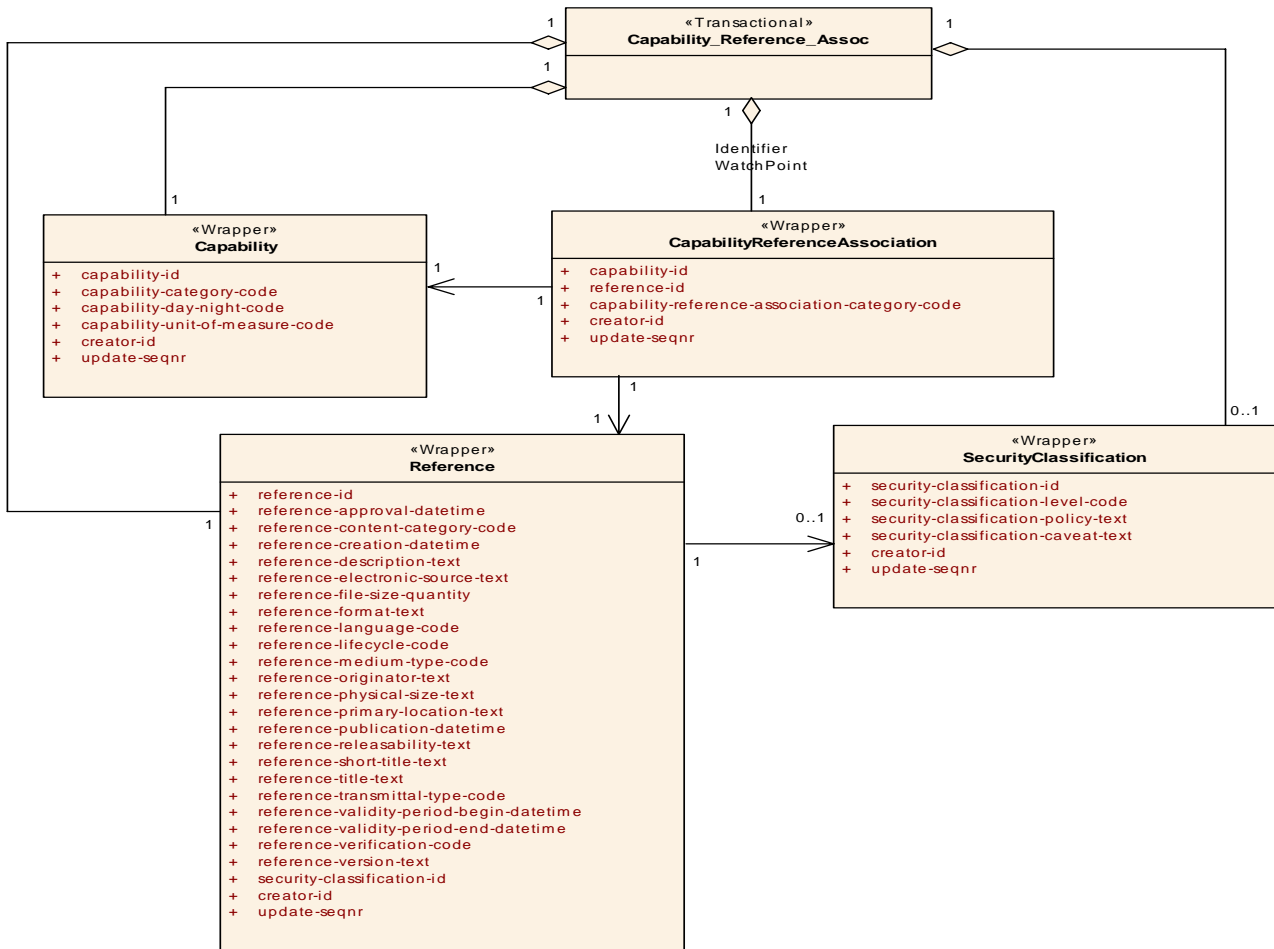


Figure 10.47 - Capability_Reference_Assoc

10.2.3 EngineeringCapability_Type

The EngineeringCapability_Type Transactional Artifact captures information about engineering capabilities that can be ascribed to the types of objects in the operational space. EngineeringCapability_Type is a support transactional to CapabilityComposite.

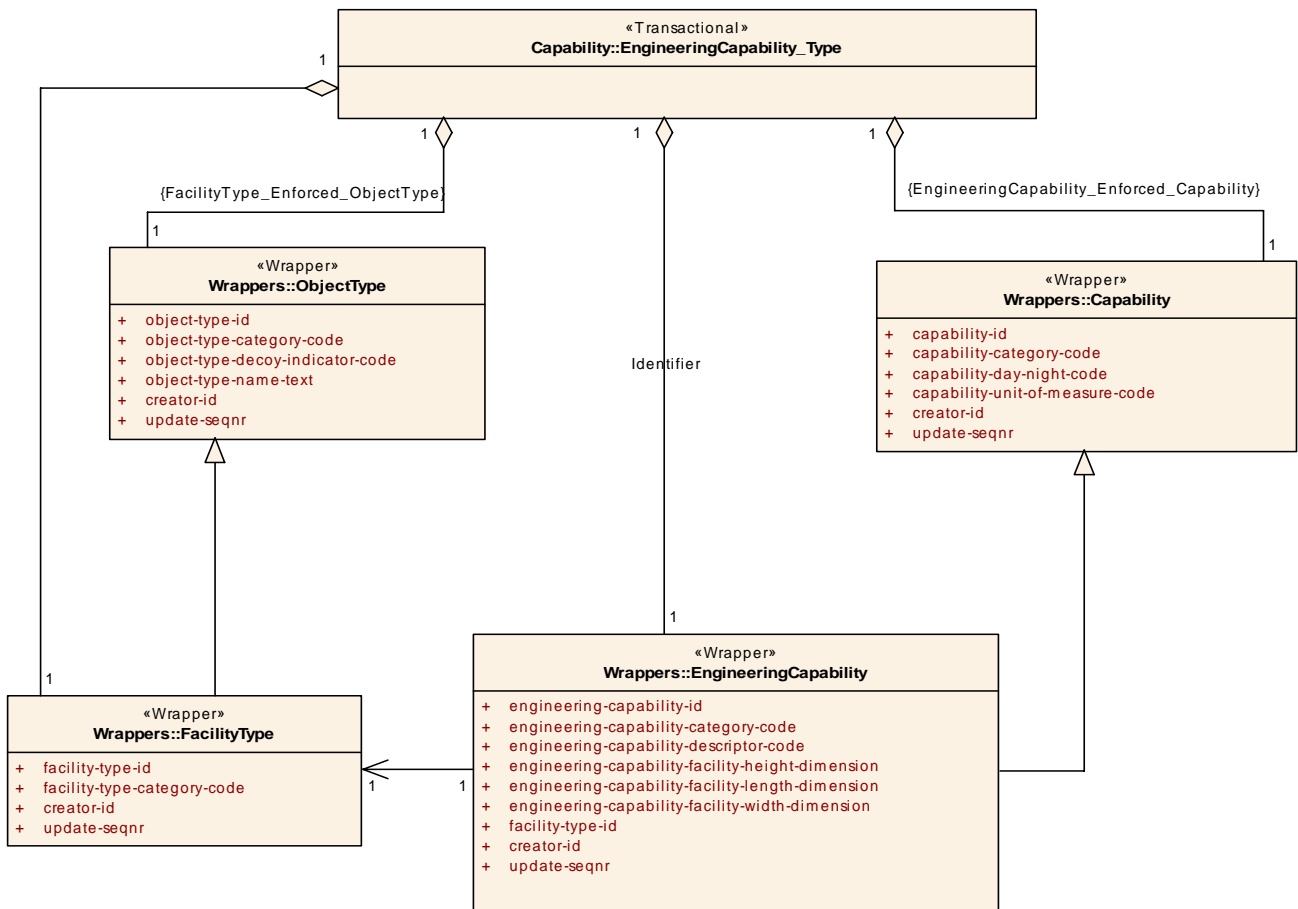


Figure 10.48 - EngineeringCapability_Type

10.2.4 FireCapability_Type

The FireCapability_Type Transactional Artifact captures information about fire capabilities that can be ascribed to the types of objects in the operational space. FireCapability_Type is a support transactional to CapabilityComposite.

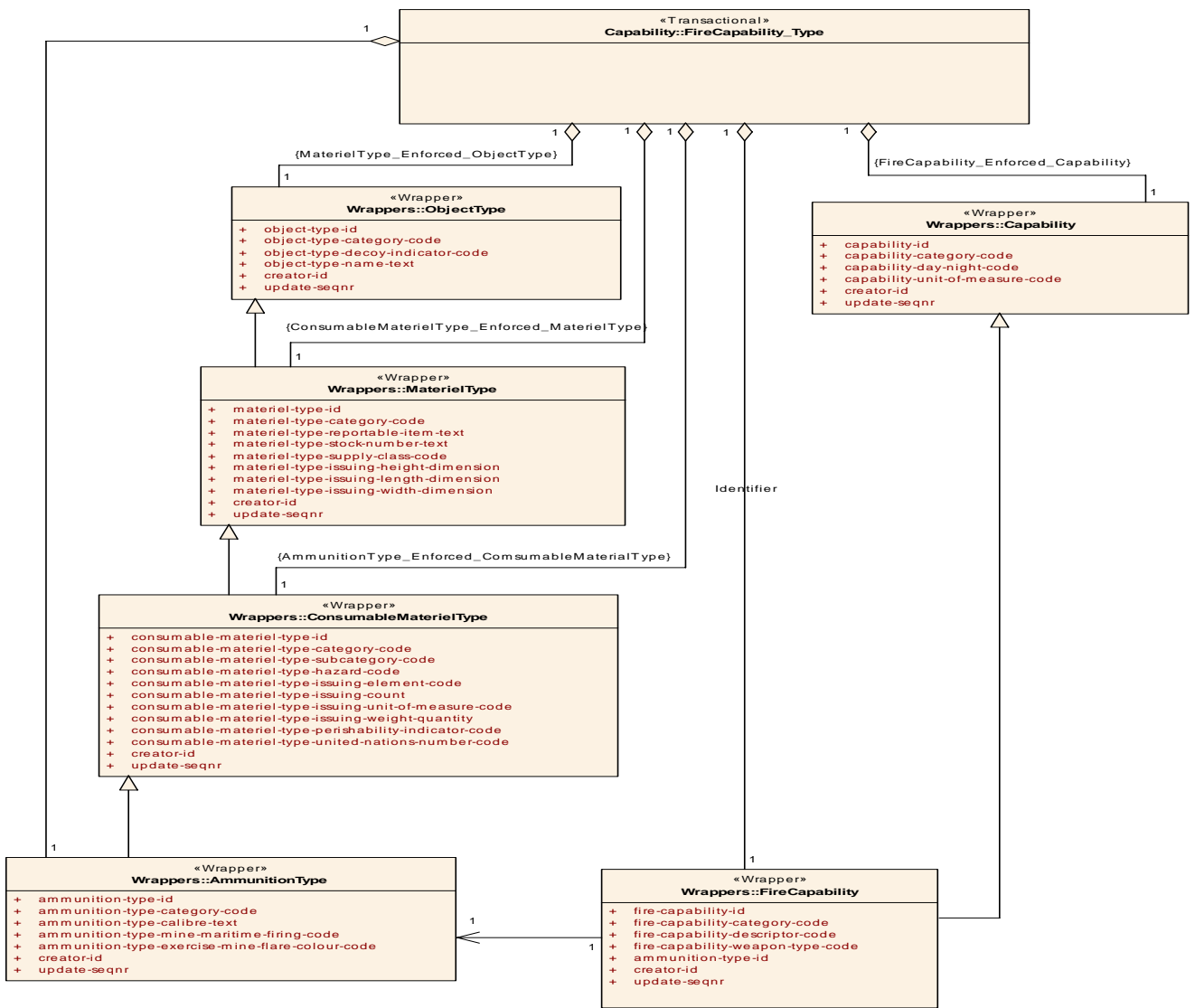


Figure 10.49 - FireCapability_Type

10.2.5 StorageCapability_Type

The StorageCapability_Type Transactional Artifact captures information about storage capabilities that can be ascribed to the types of objects in the operational space. StorageCapability_Type is a support transactional to CapabilityComposite.

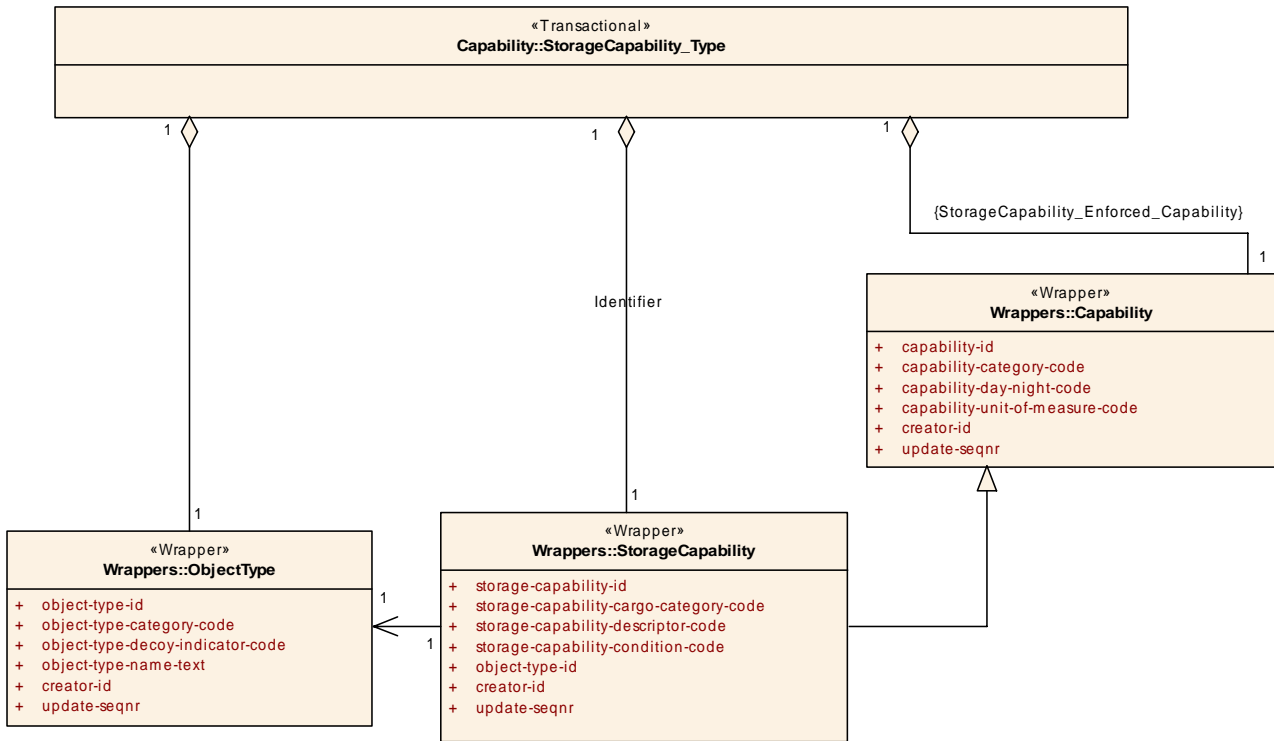


Figure 10.50 - StorageCapability_Type

10.2.6 TransmissionCapability_Type

The TransmissionCapability_Type Transactional Artifact captures information about storage capabilities that can be ascribed to the types of objects in the operational space. TransmissionCapability_Type is a support transactional to CapabilityComposite.

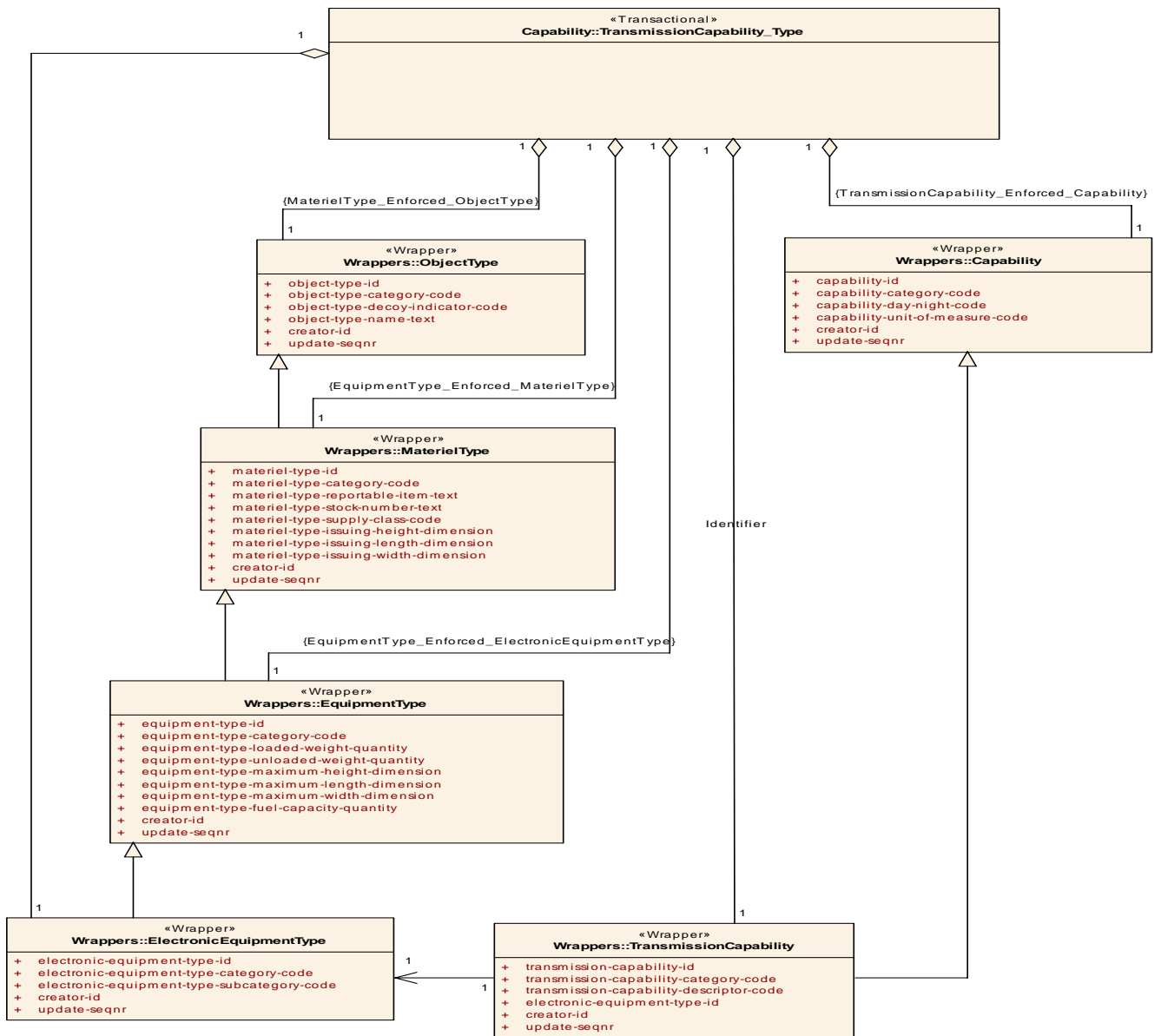


Figure 10.51 - TransmissionCapability_Type

10.3 Context

The Context package presents data patterns that define and specify the context of an item in terms of JC3IEDM information elements.

10.3.1 Context_Assessment

The Context_Assessment Transactional Artifact captures information about the appraisal by a specific organization regarding the information that is referenced by a specific context. This transactional encloses the Absolute_Reporting_Data Transactional Artifact in which information about the assessment is captured.

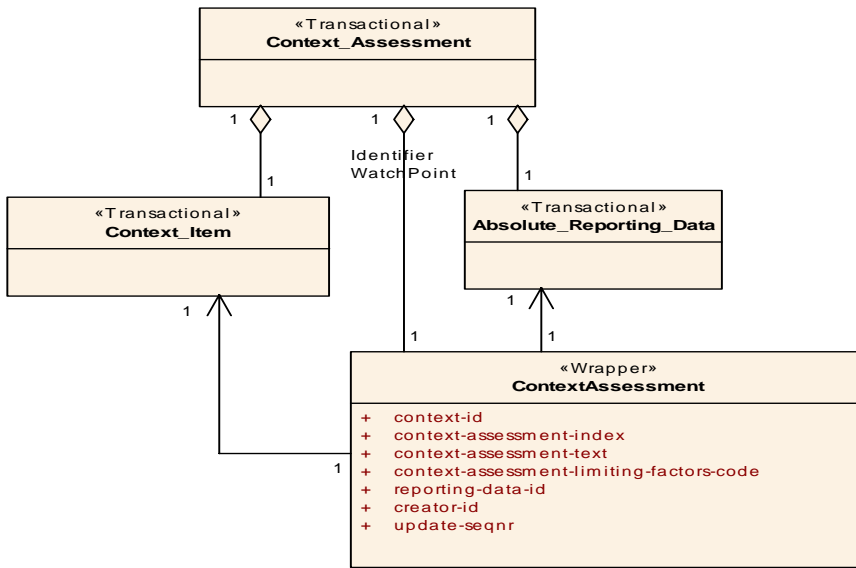


Figure 10.52 - Context_Assessment

10.3.2 Context_Context_Assoc_Status

The Context_Context_Assoc_Status Transactional Artifact captures information about the perceived state of a context association as determined by the establishing organization. The domain values for a relationship between a pair of contexts are: is next after, is part of, is sub-context of, supersedes, and supplements.

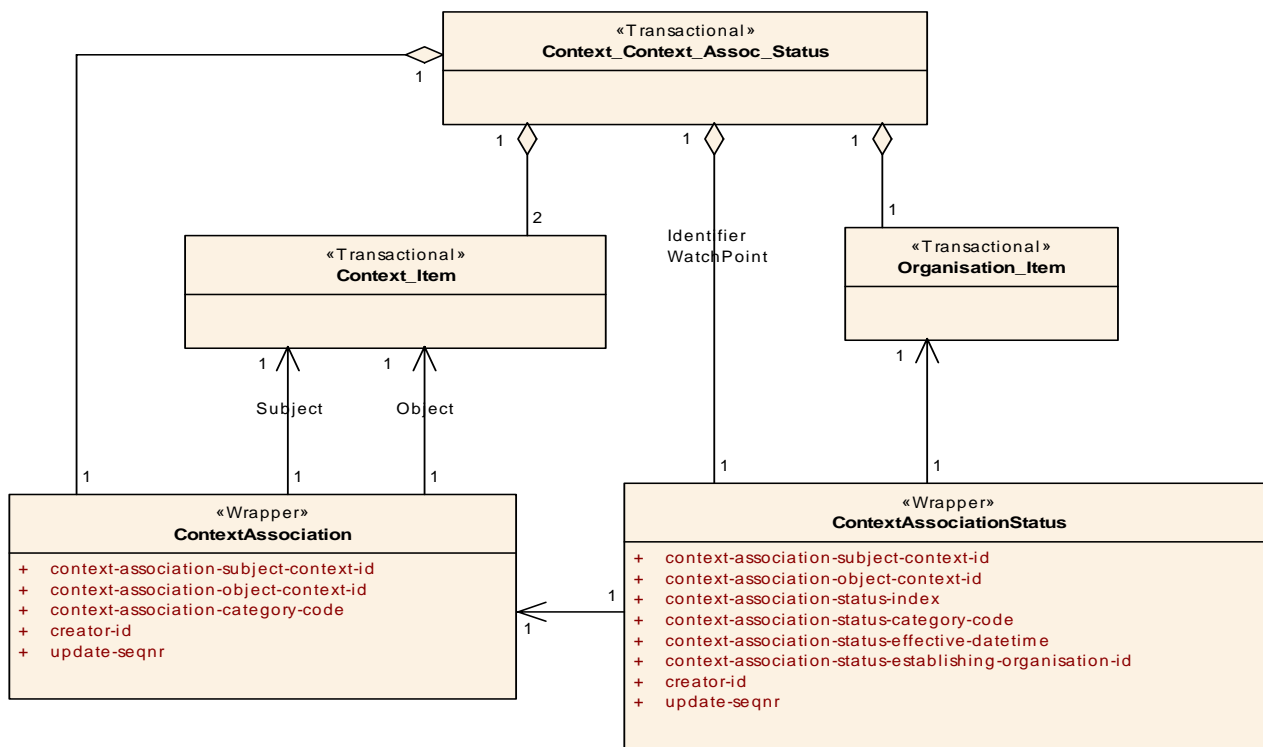


Figure 10.53 - Context_Context_Assoc_Status

10.3.3 Context_Element

The Context_Element Transactional Artifact captures information about data that are to be associated with an instance of a context. A context is built primarily through indirect reference to information via Reporting Data; in fact, an instance of context is essentially a collection of Reporting Data instances. This transactional encloses two support transactionals; Context_Element_Reporting_Data_Item and Context_Element_Status that together define the context element.

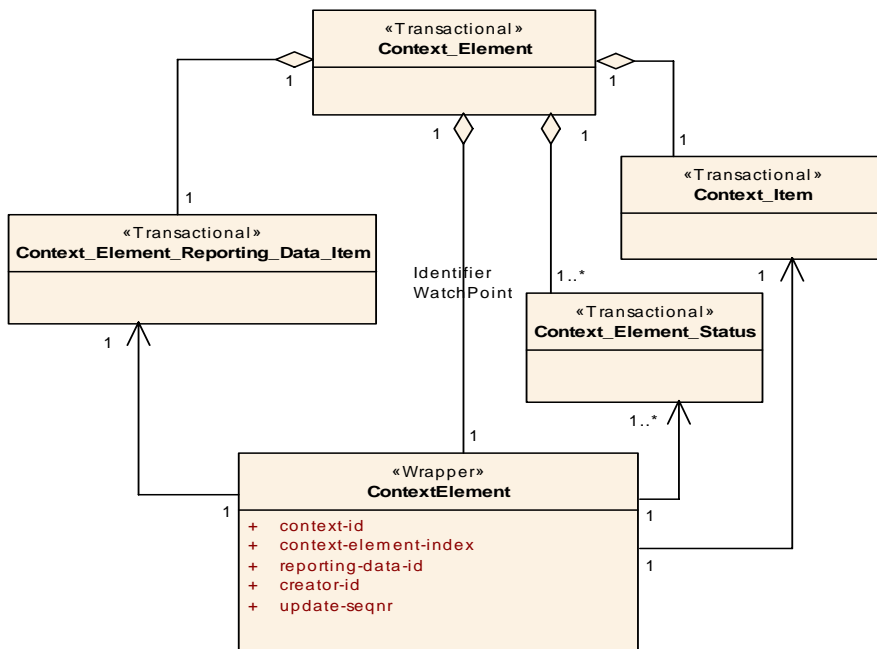


Figure 10.54 - Context_Element

10.3.4 Context_Element_Reporting_Data_Item

The **Context_Element_Reporting_Data_Item** is a support transactional used in the **Context_Element** Transactional Artifact. It captures information about the instances of Reporting Data that together comprise a specific context. This information includes the reporting organization and any references associated with the Reporting Data.

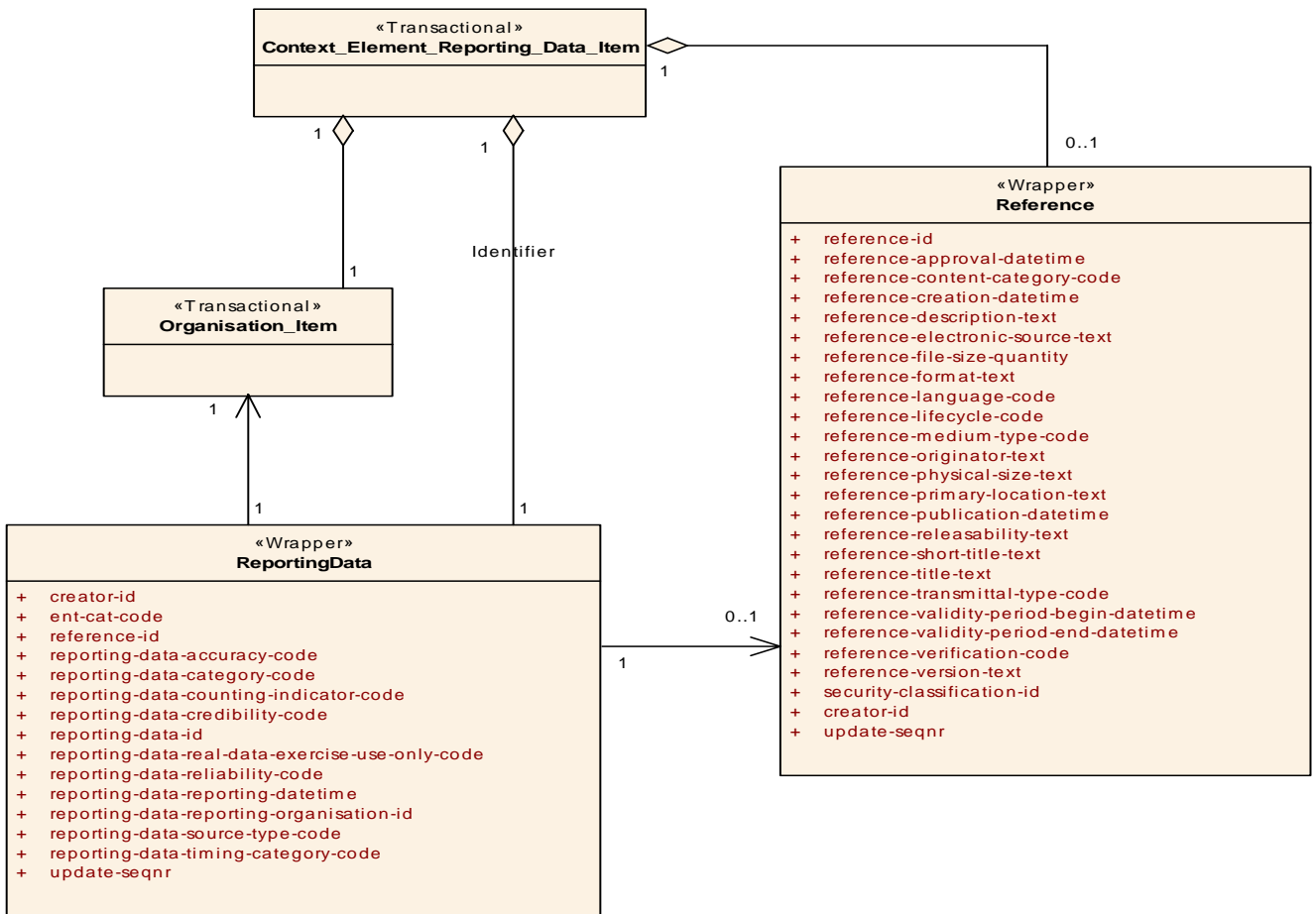


Figure 10.55 - Context_Element_Reporting_Data_Item

10.3.5 Context_Element_Status

The Context_Element_Status Transactional Artifact is a support transactional used in the Context_Element Transactional Artifact. It captures information about the status of instances of Reporting Data (together these comprise a specific context), so that those that apply can be determined. This transactional encloses the Organisation_Item Transactional Artifact in order to capture the information pertaining to the organization that established the status.

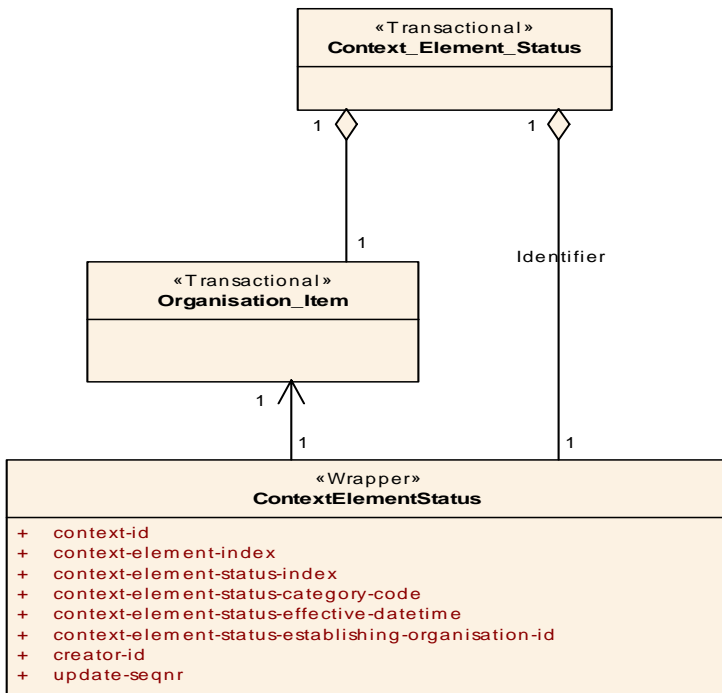


Figure 10.56 - Context_Element_Status

10.3.6 Context_Item

The Context_Item Transactional Artifact captures information to be associated with an instance of a context and with its optional SecurityClassification.

Context_Item is a support transactional in the Transactional Artifacts Context_Assessment, Context_Context_Assoc_Status, Context_Element, Context_Object_Item_Assoc_Status and Operational_Information_Group_Organisation_Assoc.

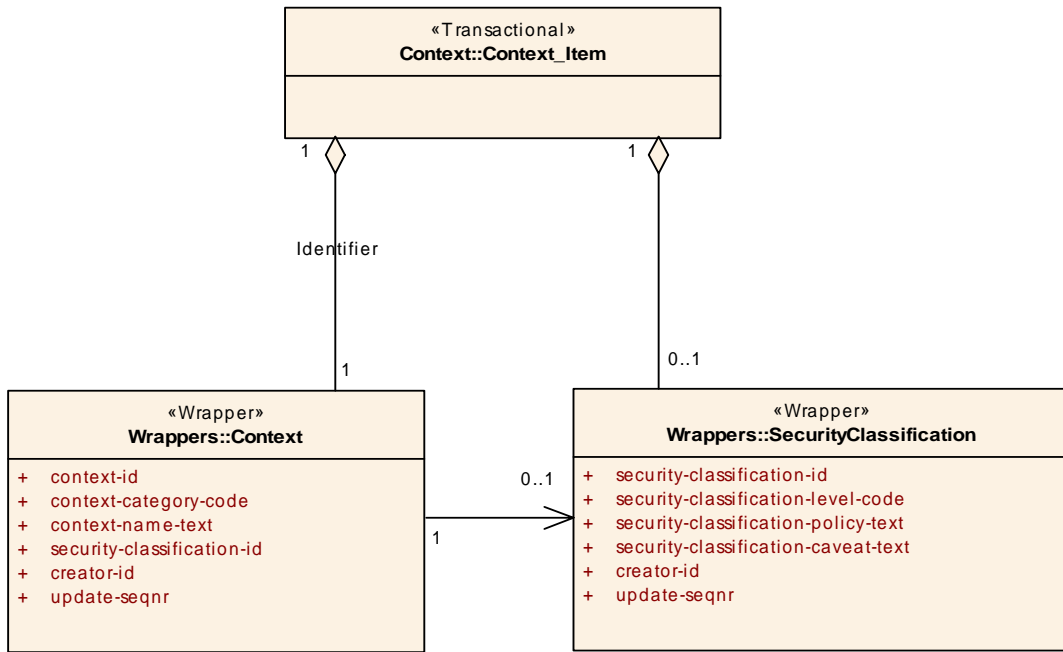


Figure 10.57 - Context_Item

10.3.7 Context_Object_Item_Assoc_Status

The Context_Object_Item_Assoc_Status Transactional Artifact captures information about the nature of the association between a specific context and an Object_Item. The domain values are: includes, and is relevant to. This transactional encloses the Organisation_Item Transactional Artifact in order to capture the information pertaining to the organization that established the status.

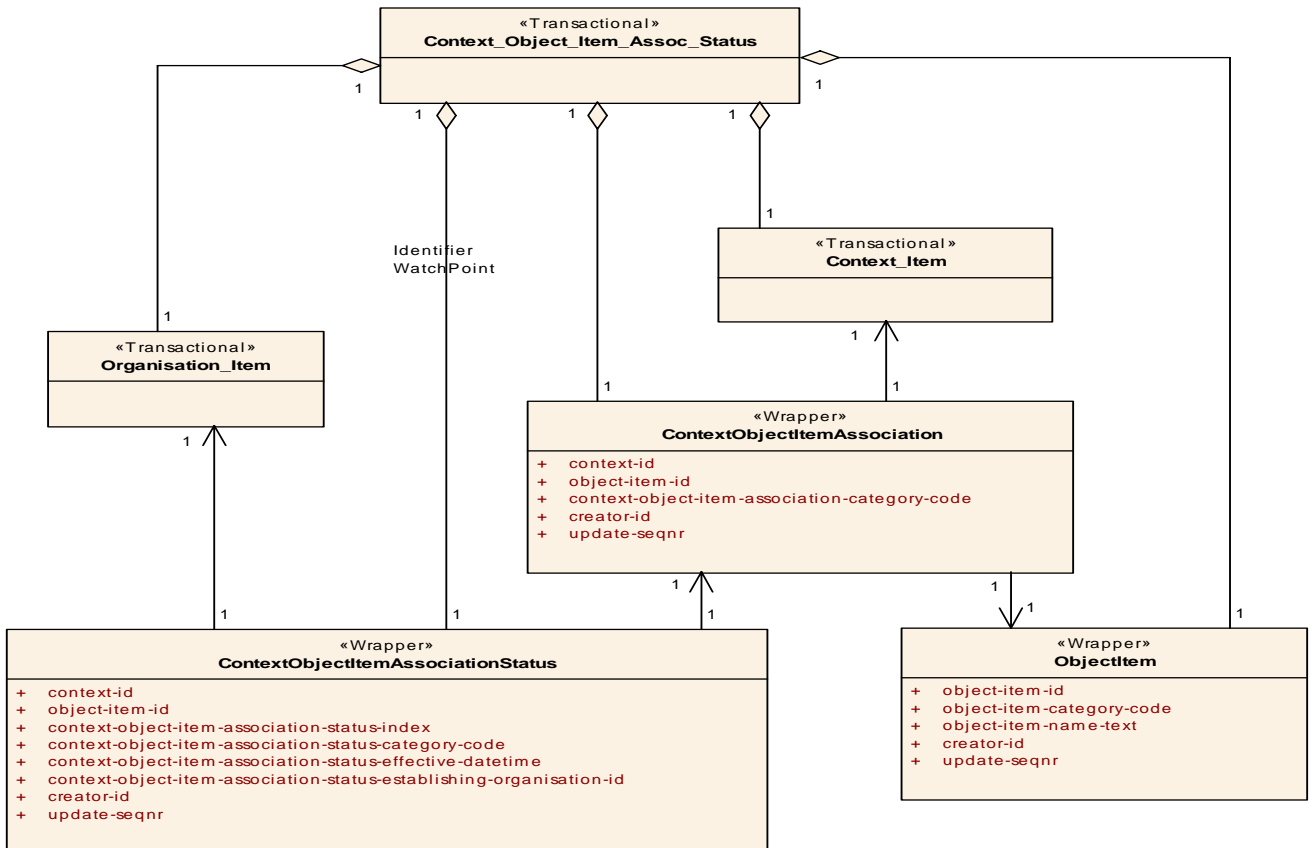


Figure 10.58 - Context_Object_Item_Assoc_Status

10.3.8 Context_Reporting_Data_Assoc

The Context_Reporting_Data_Assoc Transactional Artifact captures information about the type of relationship between a specific context and a specific Reporting Data. It is primarily used in data fusion activities. The domain values are: implies, is confirmed by, is a correction of, is defined to be, is negated by, and is superseded by. This transactional encloses the Context_Specification Transactional Artifact in order to capture the specific context of focus. This transactional encloses the Absolute_Reporting_Data Transactional Artifact in order to capture the specific Absolute_Reporting_Data that is the focus of the association.

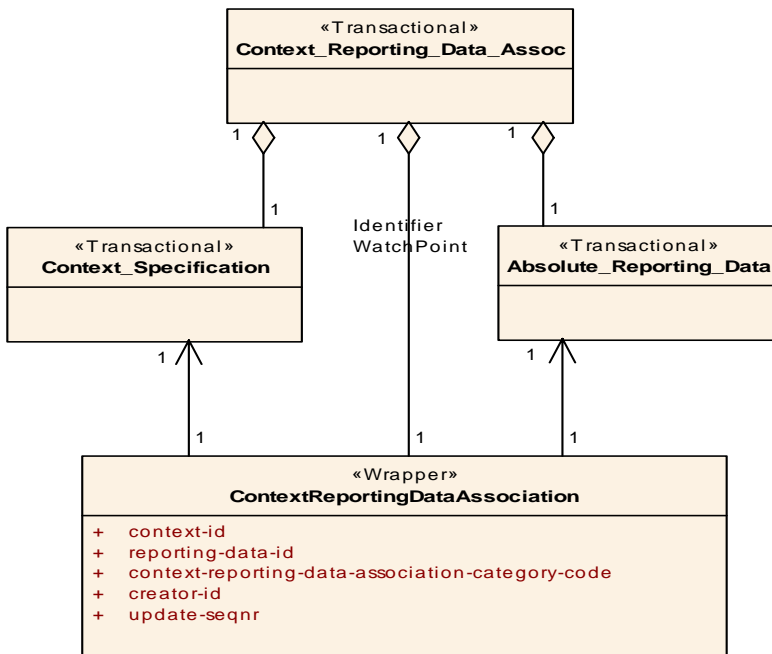


Figure 10.59 - Context_Reporting_Data_Assoc

10.3.9 Context_Specification

The Context_Specification Transactional Artifact captures information that specifies a specific context. It encloses two supporting Transactional Artifacts that may have multiple instances. The first is Context_Assessment, and the second is Context_Element.

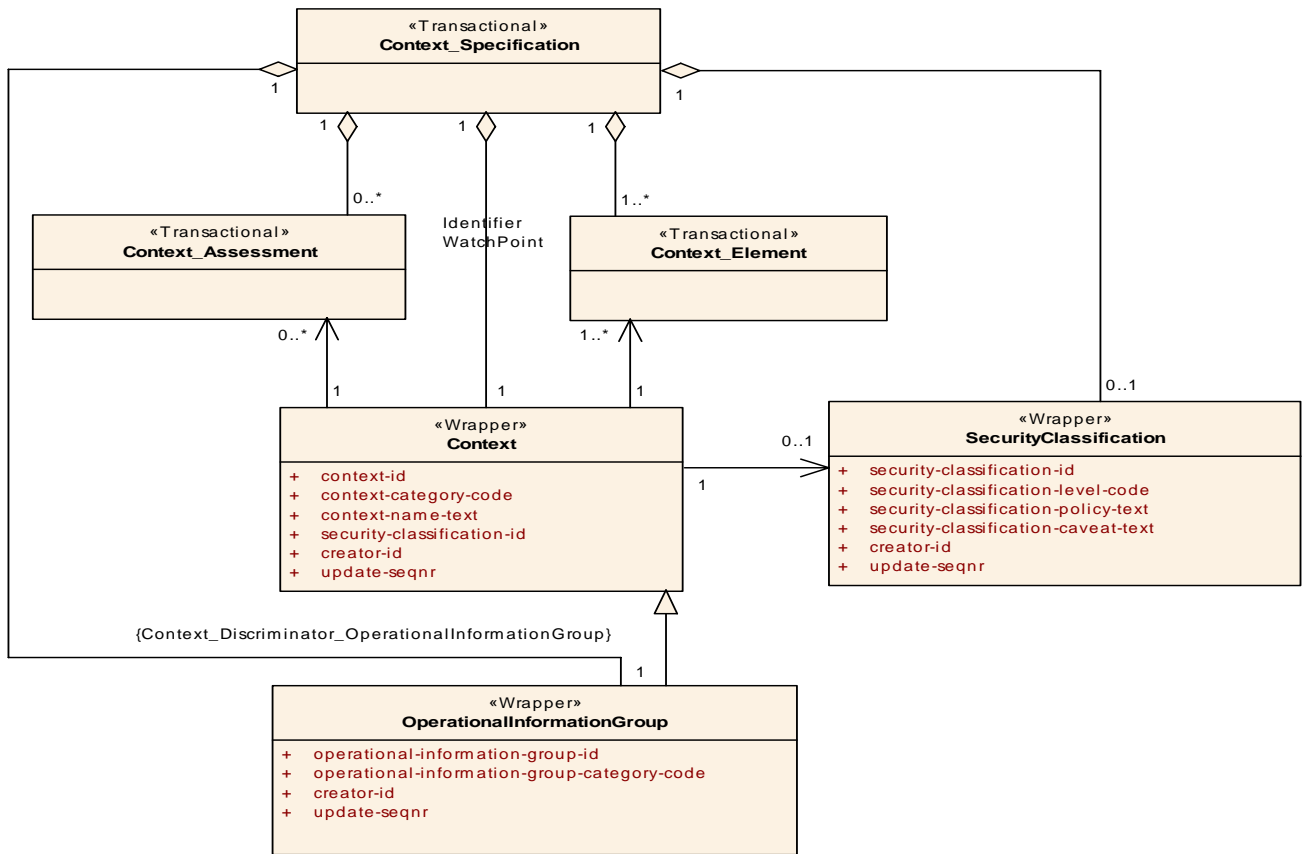


Figure 10.60 - Context_Specification

10.3.10 Operational_Information_Group_Organisation_Assoc

The `Operational_Information_Group_Organisation_Assoc` Transactional Artifact captures information about the nature of the relationship between a specific operational-information-group and an organization by specifying the role of the organization (e.g., operationally responsible for) with respect to the operational-information-group.

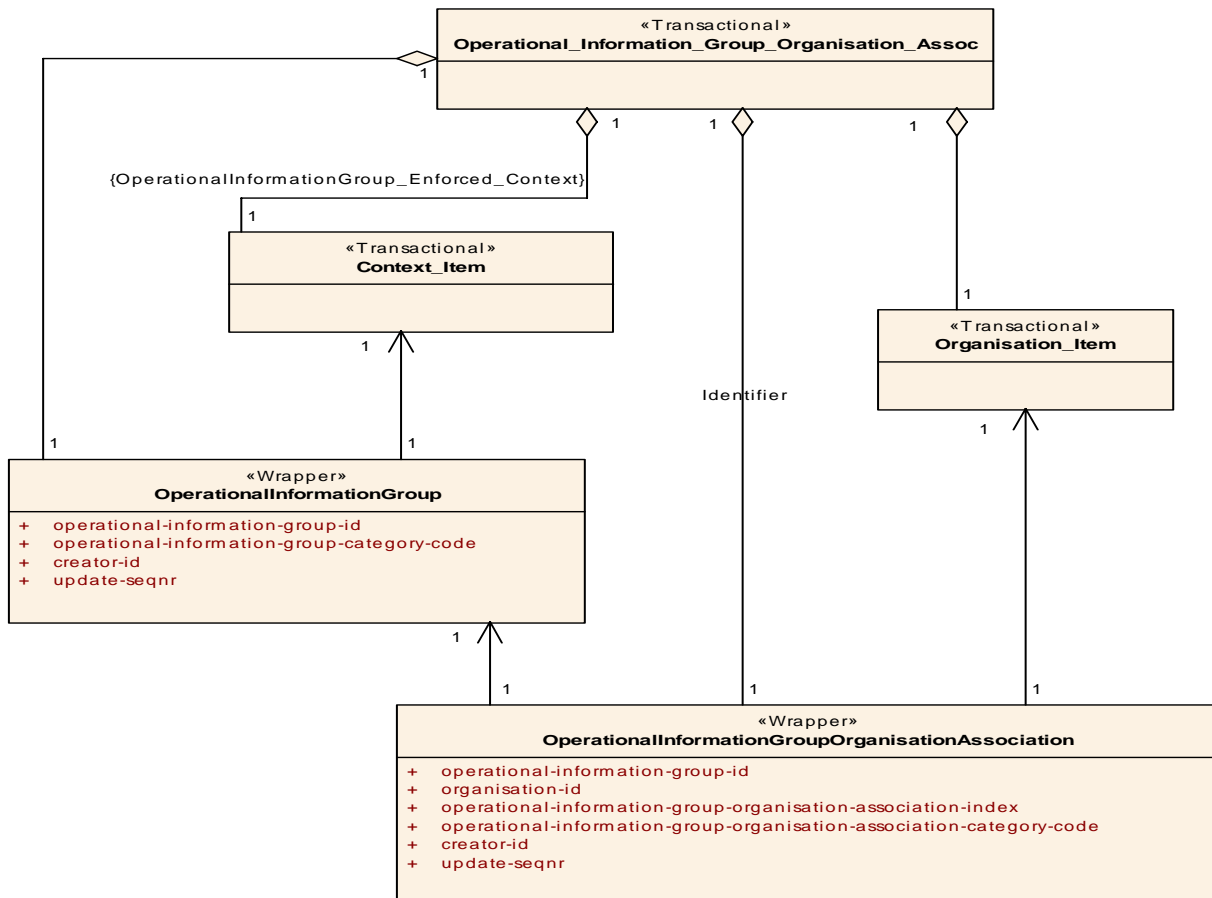


Figure 10.61 - Operational_Information_Group_Organisation_Assoc

10.3.11 Operational_Information_Group_Organisation_Assoc_Status

The Operational_Information_Group_Organisation_Assoc_Status Transactional Artifact captures information about the perceived state of the specific operational-information-group-organisation-assoc-status as determined by the establishing organization. This transactional encloses the Operational_Information_Group_Organisation_Assoc Transactional Artifact.

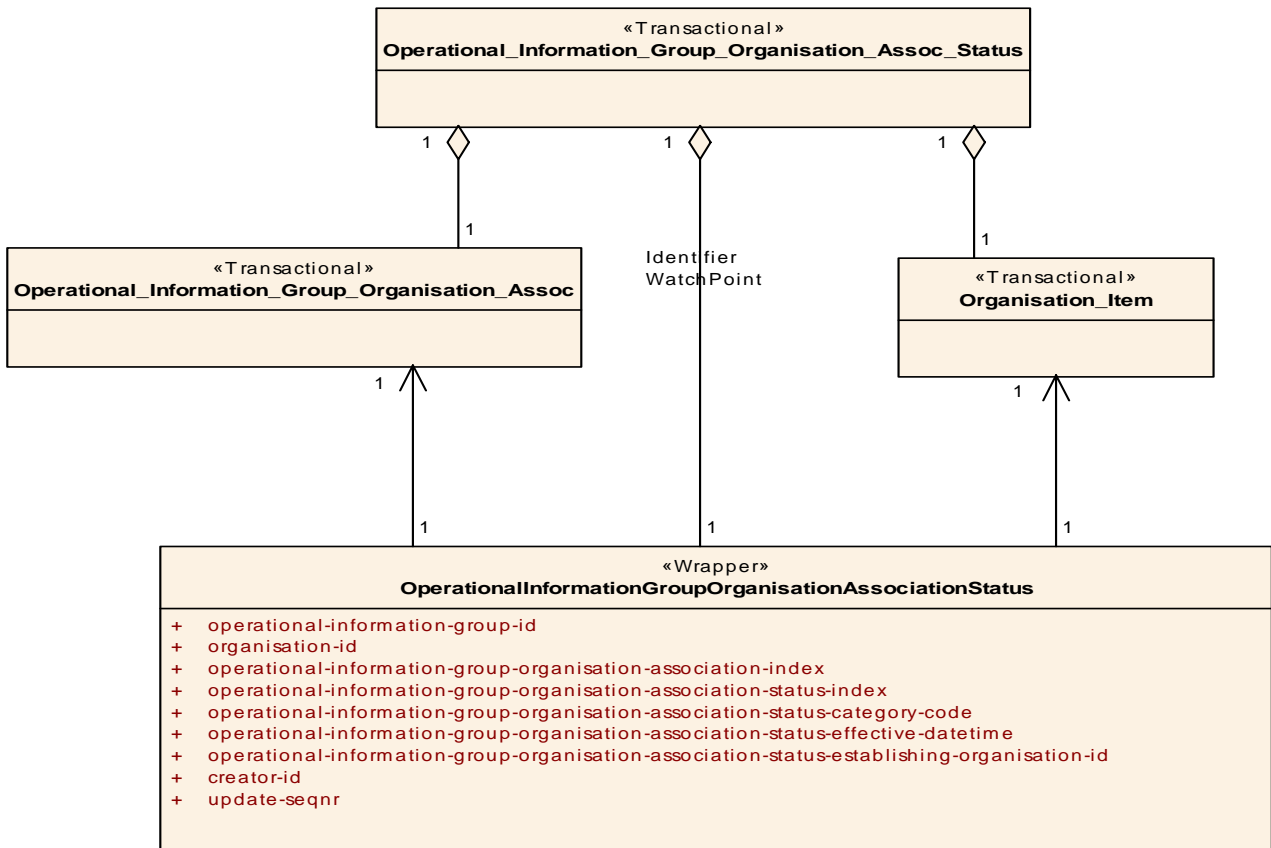


Figure 10.62 - Operational_Information_Group_Organisation_Assoc_Status

10.3.12 Operational_Information_Group_Plan_Order_Content

The Operational_Information_Group Plan_Order_Content Transactional Artifact captures information about the association of a specific Operational Information Group to a specific plan-order. This transactional encloses the Plan_Item Transactional Artifact.

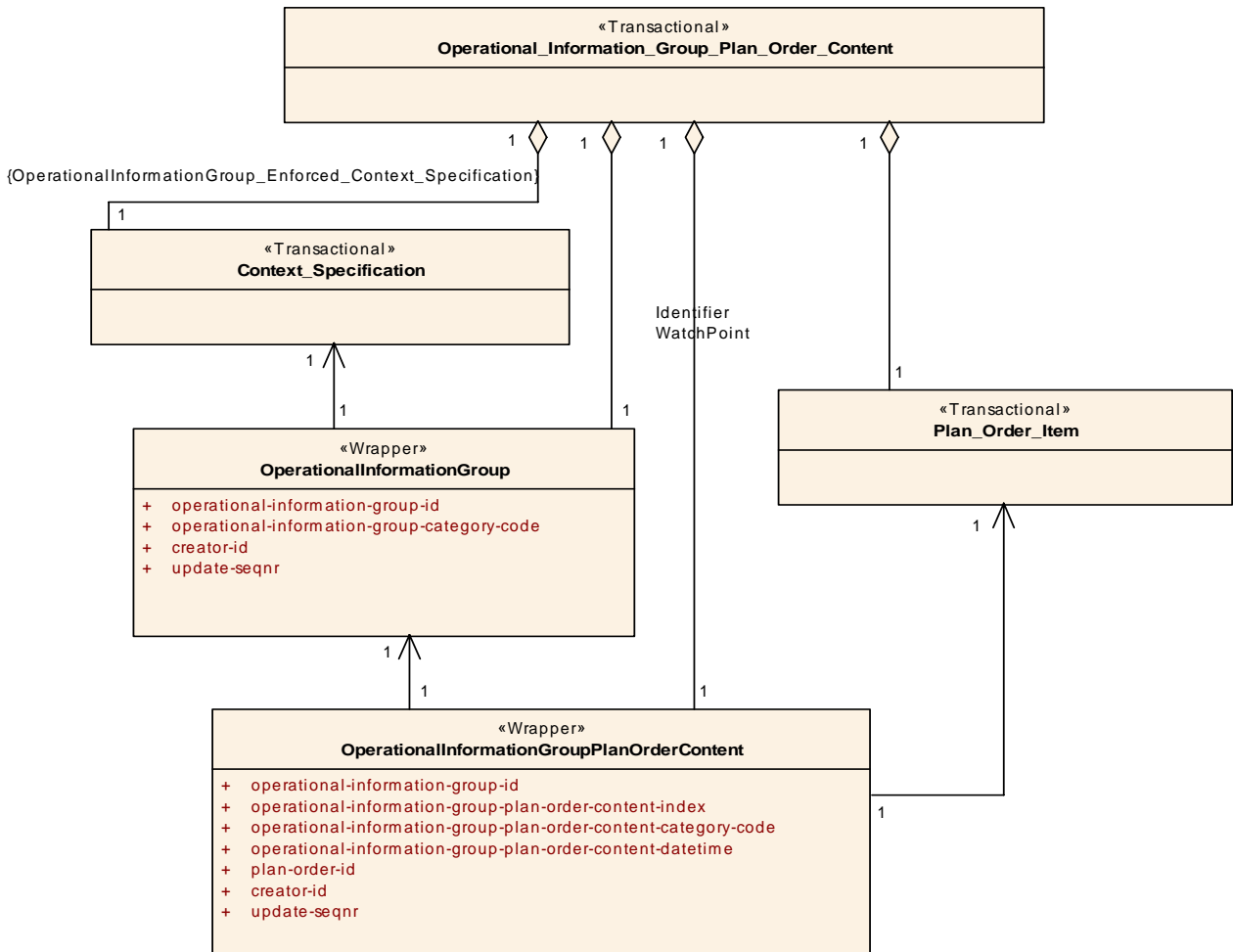


Figure 10.63 - Operational_Information_Group_Plan_Order_Content

10.3.13 Reference_Assoc

The Reference_Assoc Transactional Artifact captures information about the nature of the association between specific pairs of Reference, such as is superseded by.

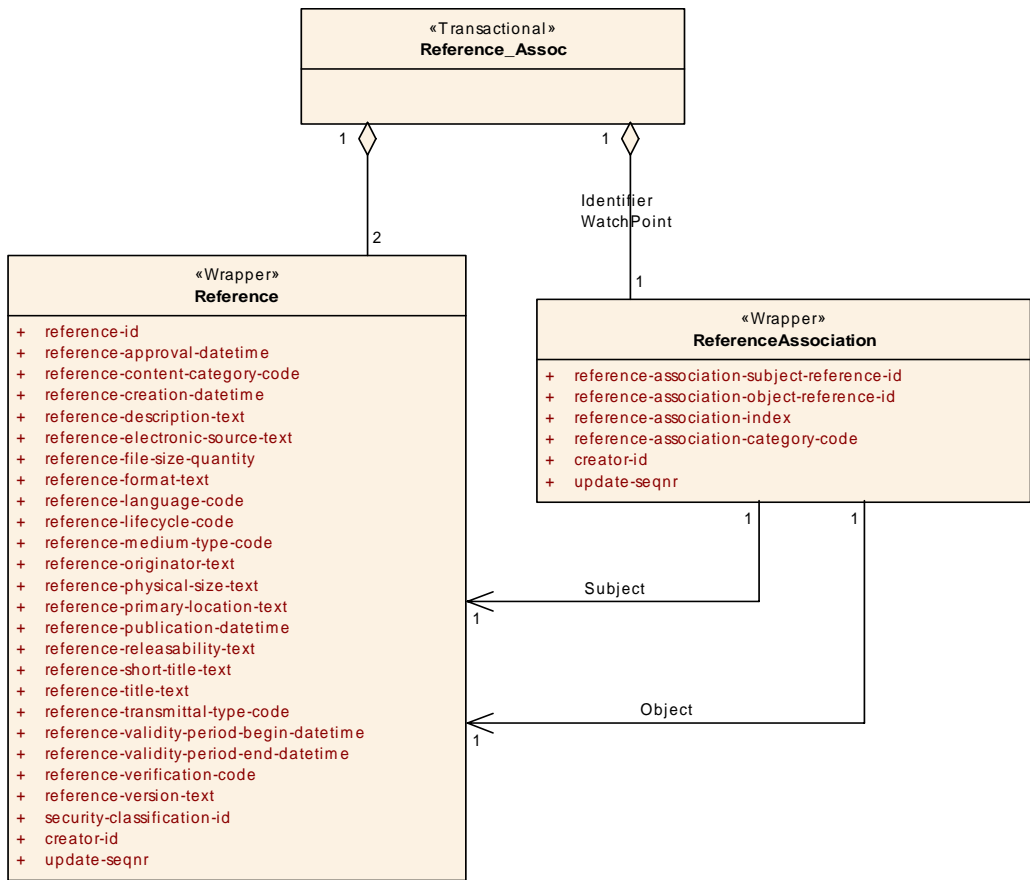


Figure 10.64 - Reference_Assoc

10.4 ControlFeature

The ControlFeature package presents data patterns that define and specify non-tangible features of interest in terms of JC3IEDM information elements.

10.4.1 ApproachDirection_Item

The ApproachDirection_Item Transactional Artifact captures information about the approach direction pertaining to aircraft takeoff and landing operations. An approach direction is a non-tangible feature of interest that is administratively specified, may be represented by a geometric figure, and is associated with the conduct of operations.

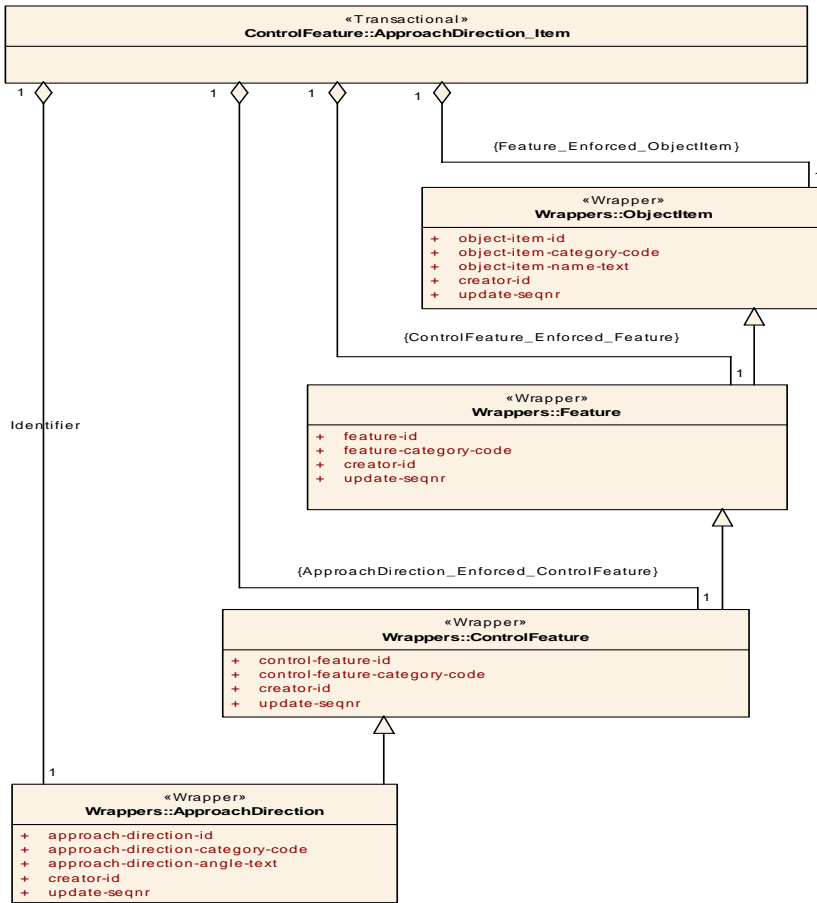


Figure 10.65 - ApproachDirection_Item

10.4.2 ControlFeature_Item

The ControlFeature_Item Transactional Artifact captures information about an individually identified instance of a non-tangible feature of (ECM or military) interest that is administratively specified, may be represented by a geometric figure, and is associated with the conduct of operations.

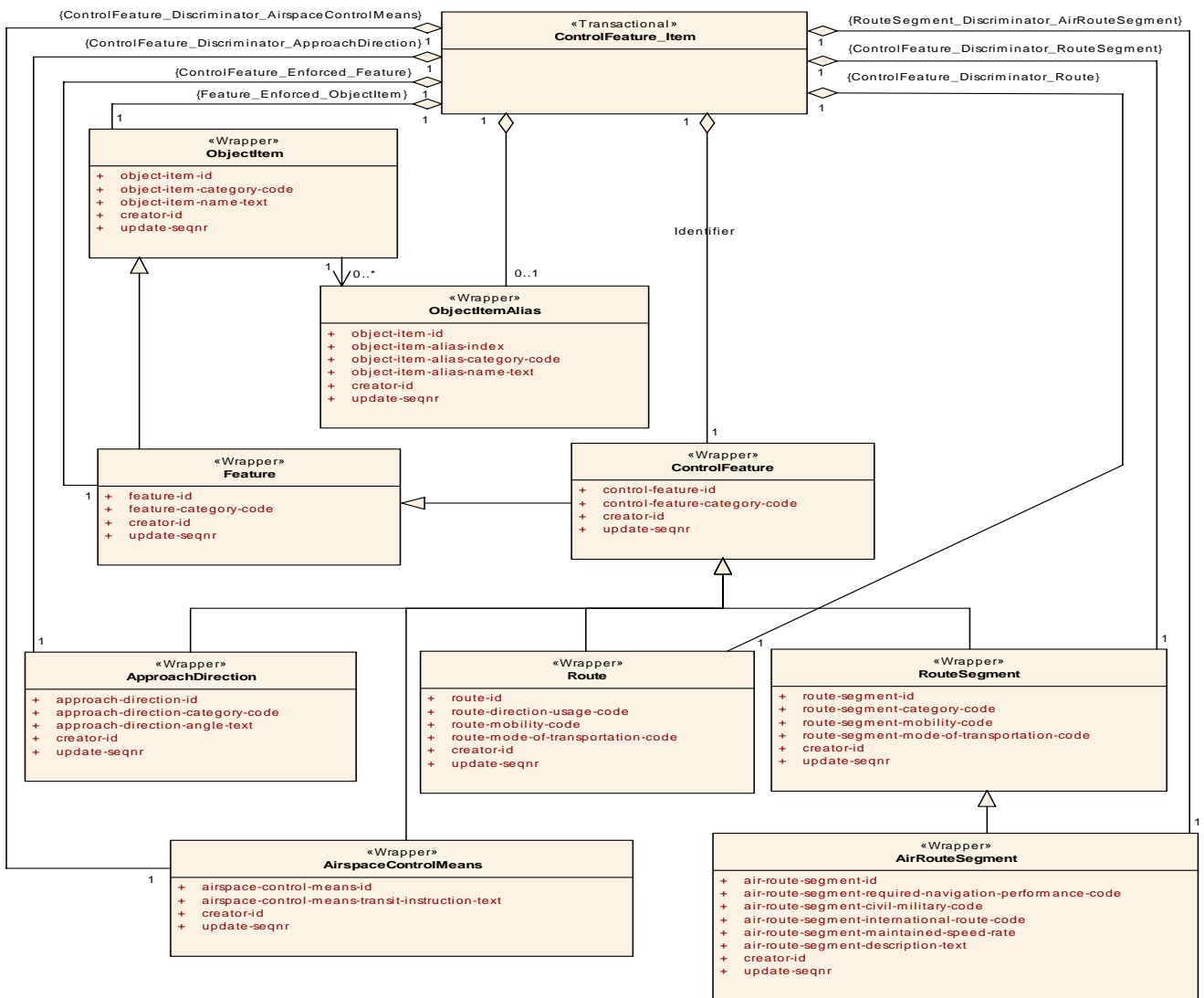


Figure 10.66 - ControlFeature_Item

10.4.3 ControlFeature_Item_Type

The ControlFeature_Item_Type Transactional Artifact captures information about the perceived classification of a specific control-feature-item as a specific control-feature-type. This transactional encloses the Absolute_Reporting_Data Transactional Artifact in which information about the type classification is captured.

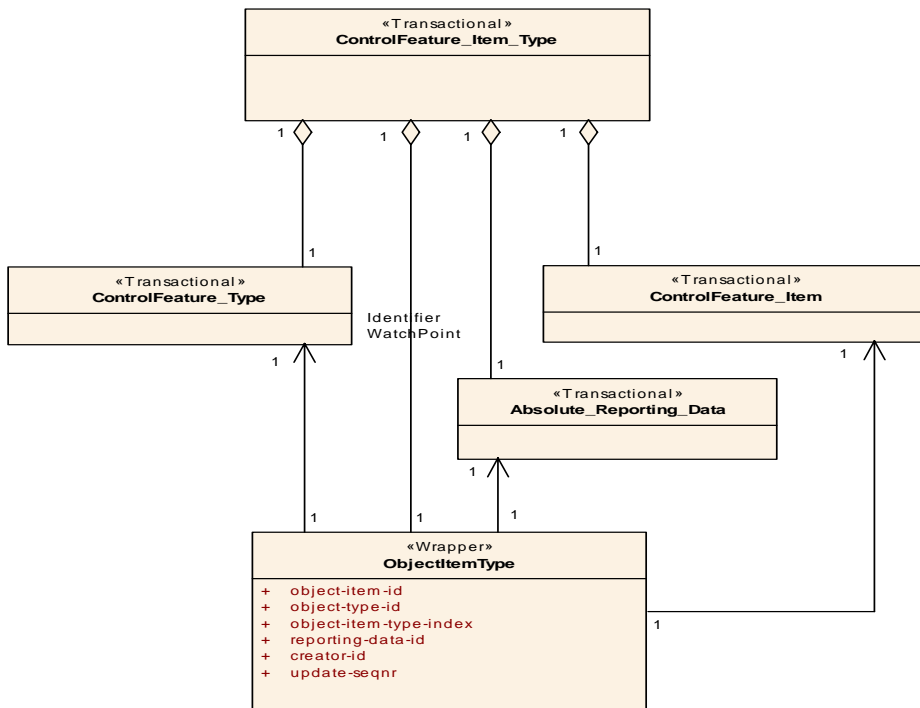


Figure 10.67 - ControlFeature_Item_Type

10.4.4 ControlFeature_Position

The ControlFeature_Position Transactional Artifact captures information about the association of a control-feature to a location so that the geographic position of the control-feature can be specified. This transactional encloses the Location_Composite Transactional Artifact to support the specification of the location in geometrical terms. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the location association is captured.

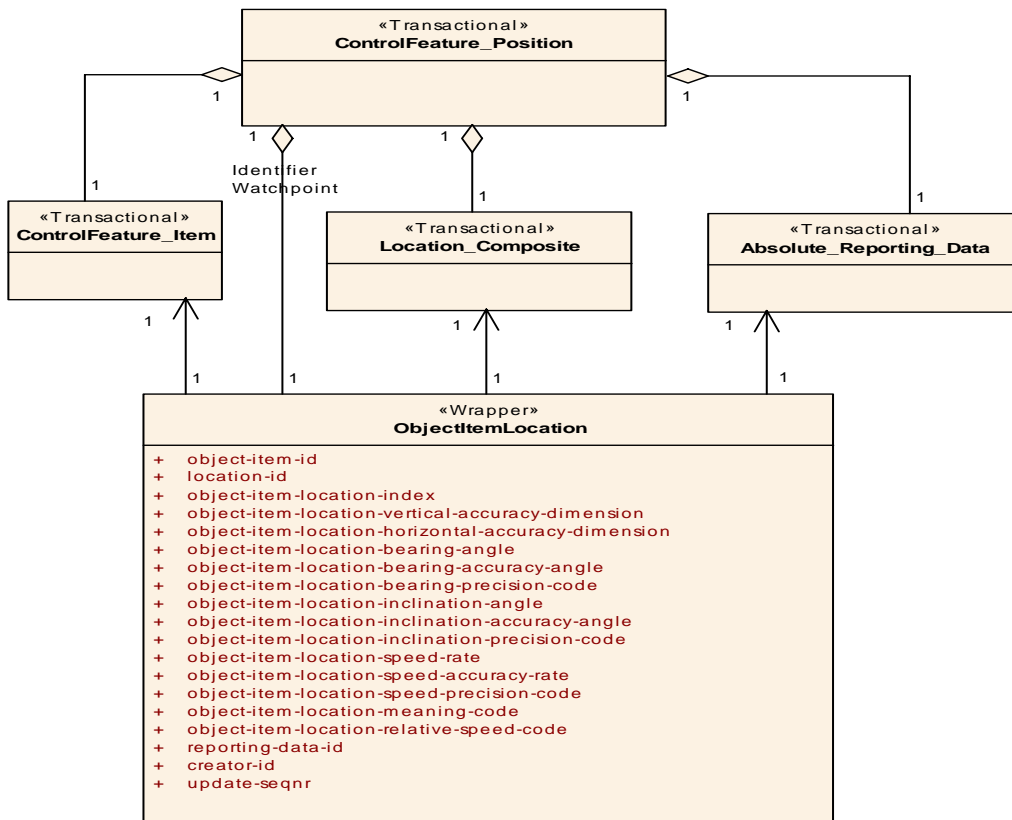


Figure 10.68 - ControlFeature_Position

10.4.5 ControlFeature_Status

The ControlFeature_Status Transactional Artifact captures information about the condition or status of a specific Control Feature. The status information captured pertains to the site encompassed by the Control Feature, in terms of whether or not the site: has been investigated, and with what results; presents any CBRN threat, and if so at what level; is guarded. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the location association is captured.

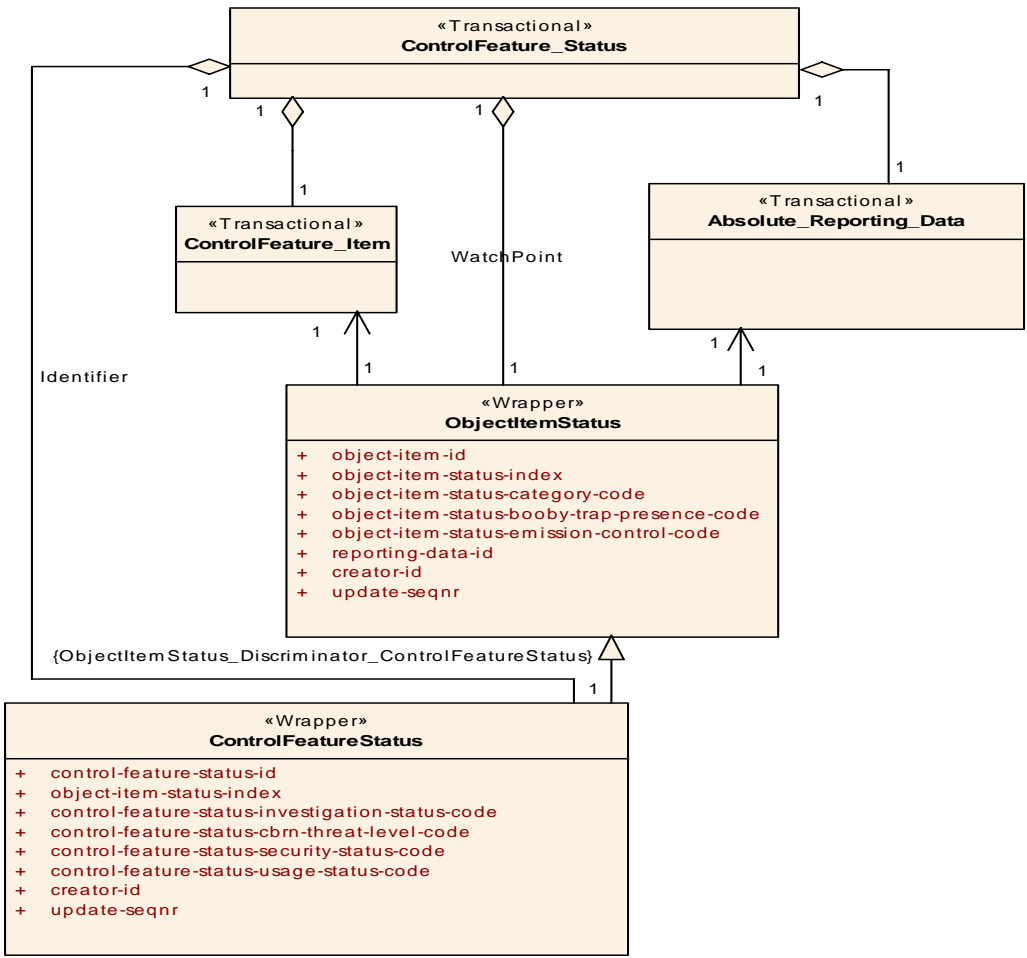


Figure 10.69 - ControlFeature_Status

10.4.6 ControlFeature_Type

The ControlFeature_Type Transactional Artifact captures information about a non-tangible Feature Type of military interest that may be represented by a geometric figure, and is associated with the conduct of military operations. The Control Feature type includes the subtype Route Type.

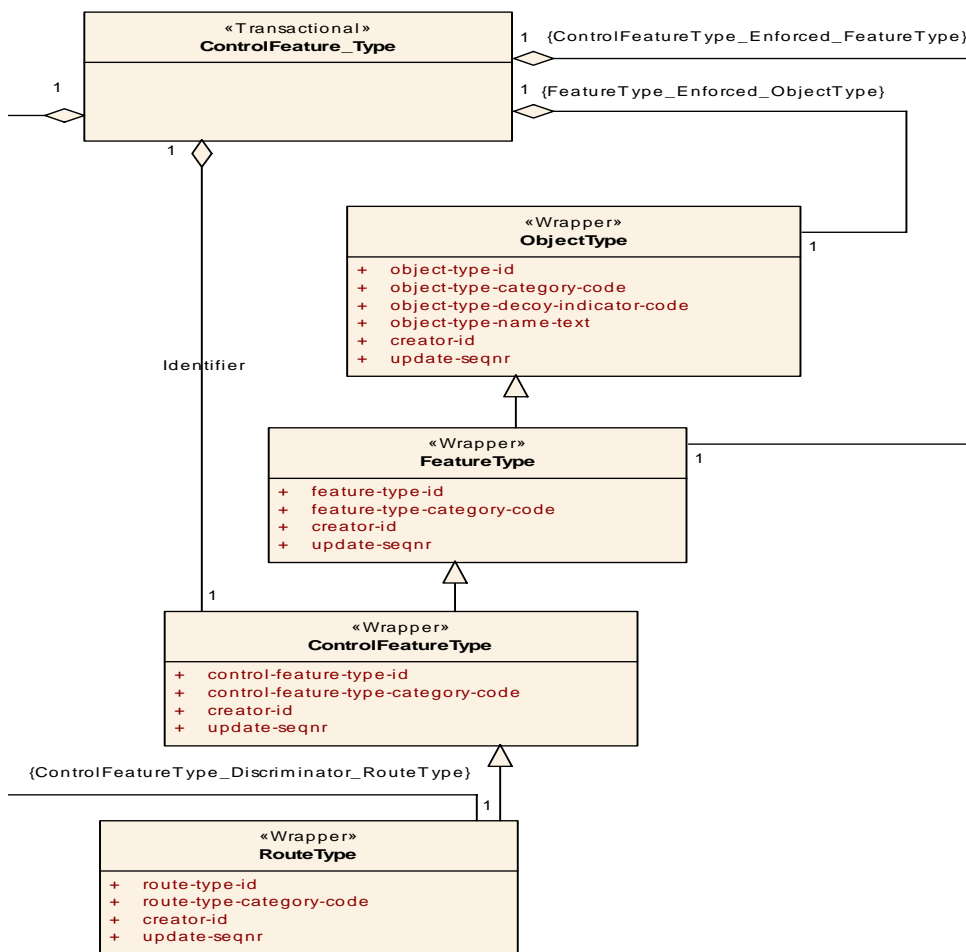


Figure 10.70 - ControlFeature_Type

10.5 Facility

The Facility package presents data patterns that describe constructs built, installed or established to serve some particular propose to which operational significance is attached, in terms of JC3IEDM information elements.

10.5.1 Facility_Item

The Facility_Item Transactional Artifact captures information about an individually identified instance of a Facility, to which military or civilian significance is attached. A facility is built, installed or established to serve some particular propose, and is identified by the service it provides rather than by its content. There are many subtypes of facility including Airfield, Anchorage, Bridge, etc.

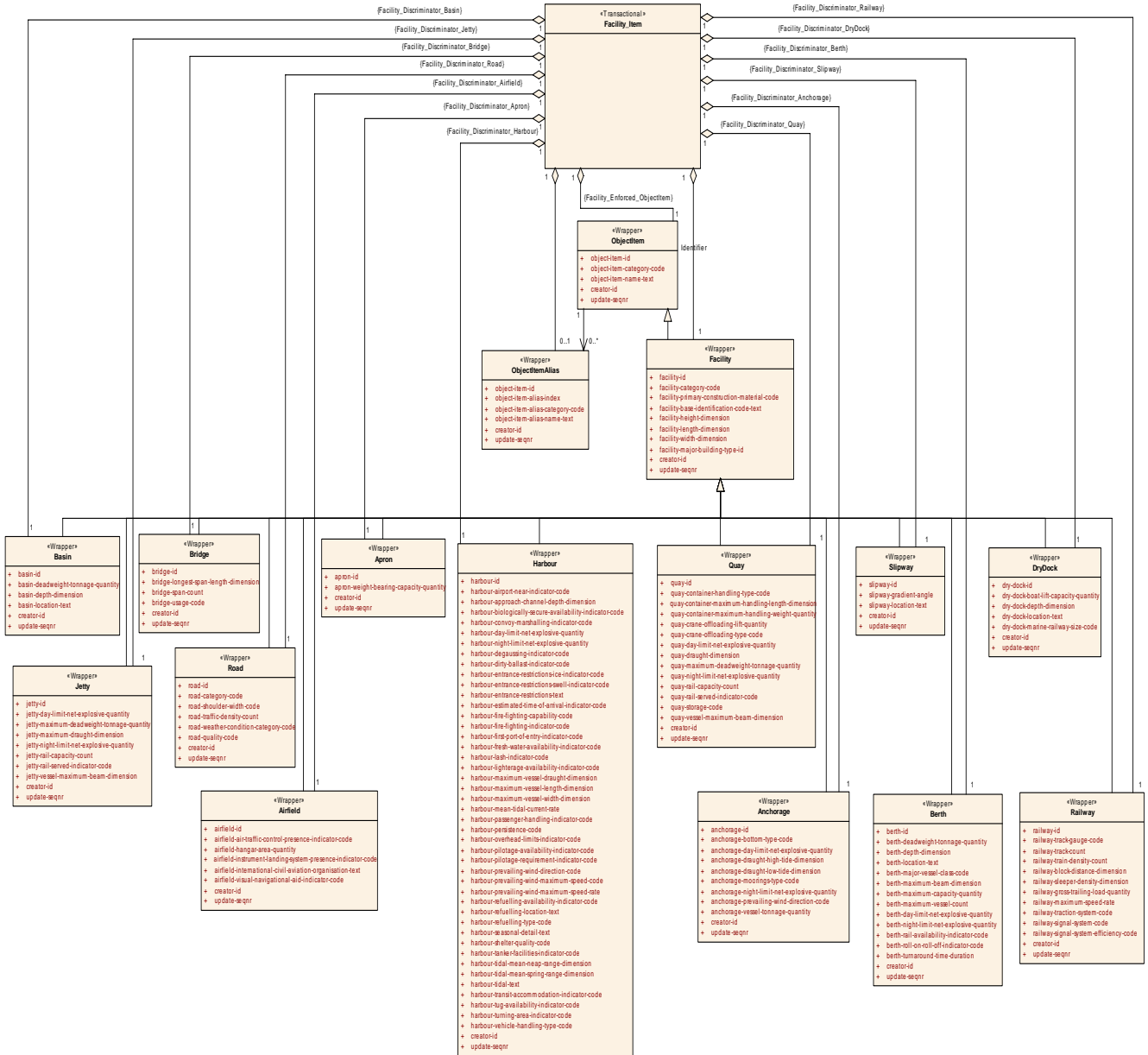


Figure 10.71 - Facility_Item

10.5.2 Facility_Item_Type

The Facility_Item_Type Transactional Artifact captures information about the perceived classification of a specific facility-item as a specific facility-type. This transactional encloses the Absolute_Reporting_Data Transactional Artifact in which information about the type classification is captured.

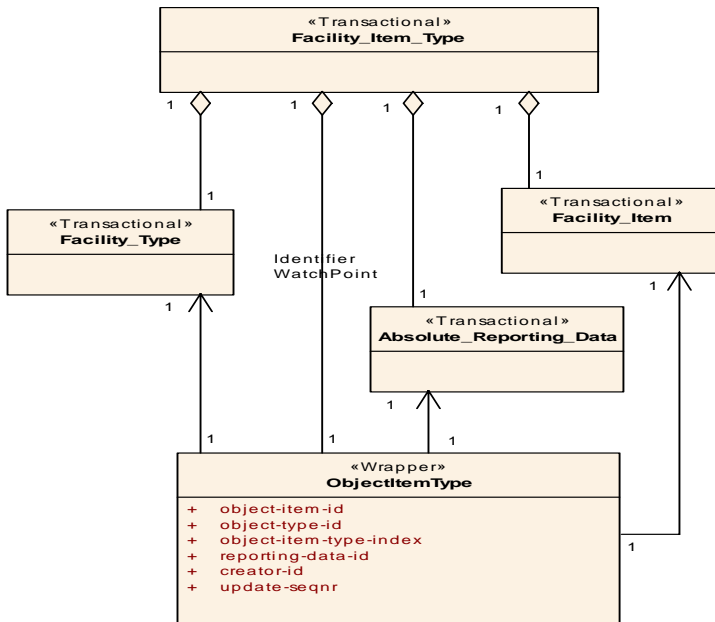


Figure 10.72 - Facility_Item_Type

10.5.3 Facility_Position

The Facility_Position Transactional Artifact captures information about the association of a facility to a location so that the geographic position of the facility can be specified. This transactional encloses the Location_Composite Transactional Artifact to support the specification of the location in geometrical terms. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the location association is captured.

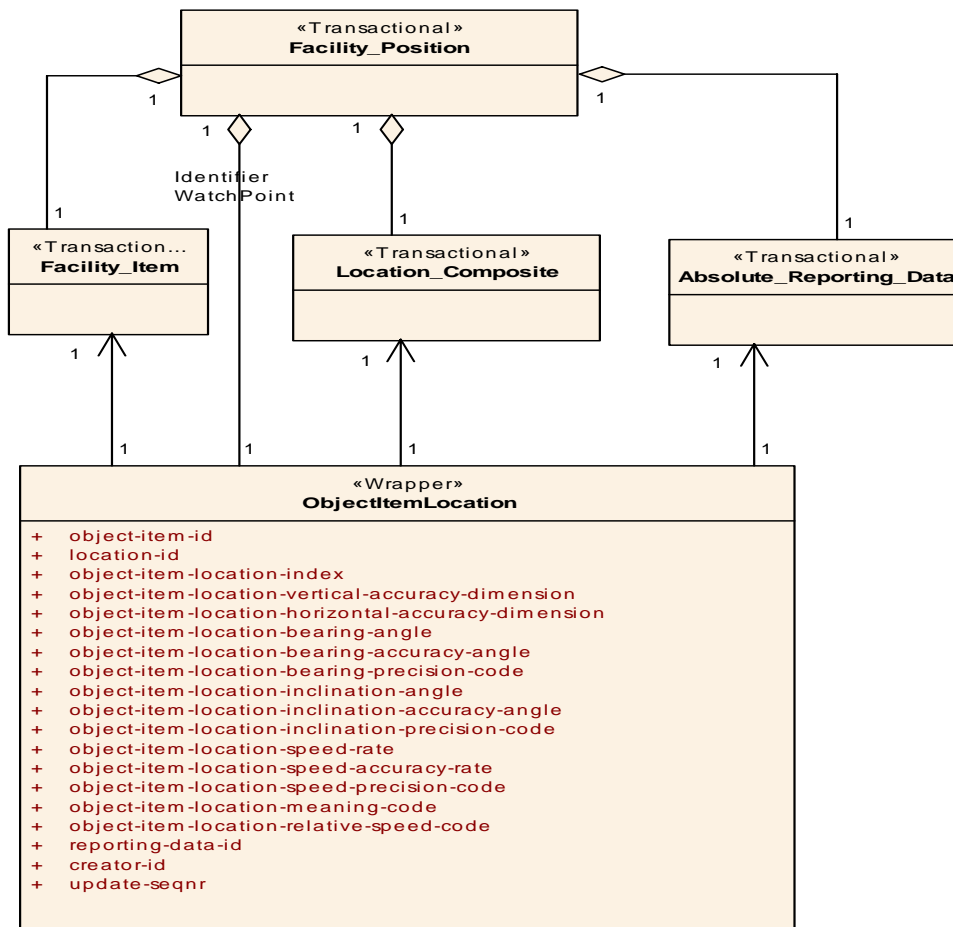


Figure 10.73 - Facility_Position

10.5.4 Facility_Status

The Facility_Status Transactional Artifact captures information about the condition or status of a specific Facility. The status information captured pertains primarily to the operational status and usage of the facility, although it also conveys the status of enemy action around or at the facility, and its safety status. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the location association is captured.

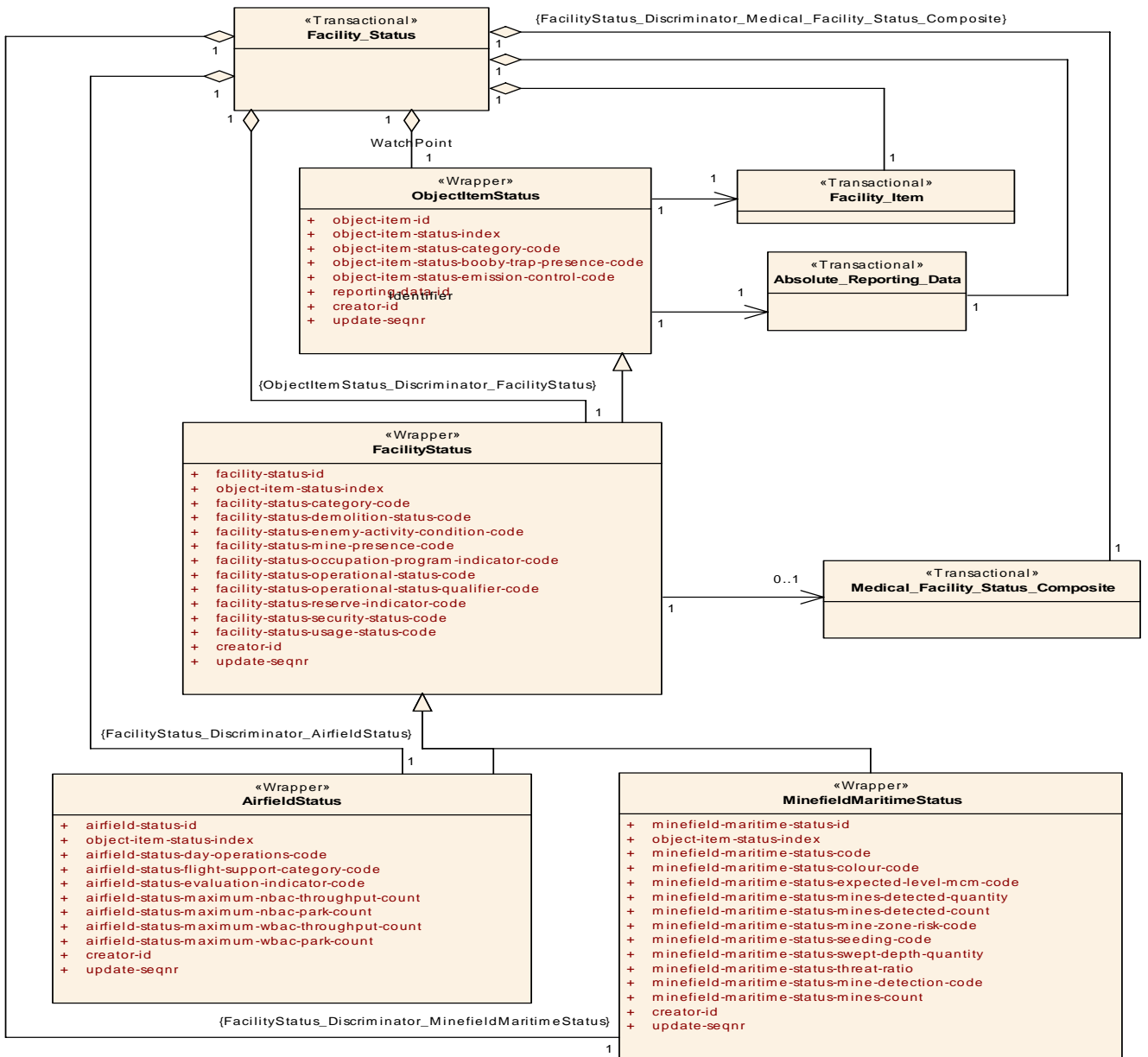


Figure 10.74 - Facility_Status

10.5.5 Facility_Type

The Facility_Type Transactional Artifact captures information about a specific type of Facility that is of operational interest and is built, installed or established to serve some particular propose, and is identified by the service it provides rather than by its content. There are many types of Facility, but only four: Airfield Type, Bridge Type, Harbor Type, and Military Obstacle Type have additional information characteristics that result in their specifications as separate subtypes of Facility Type.

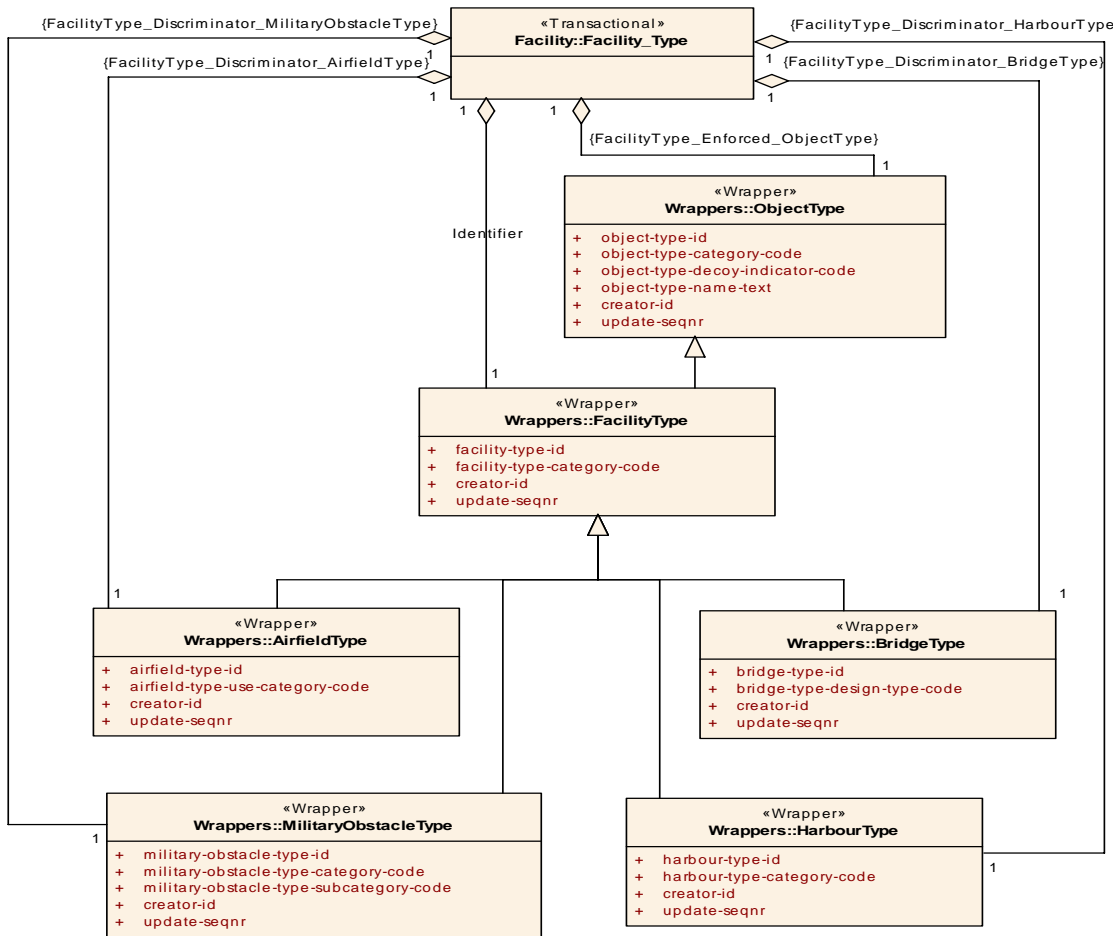


Figure 10.75 - Facility_Type

10.5.6 MFSI_Casualty_Group

The Medical Facility Status Interval (MFSI) Casualty Group Transactional Artifact captures information about a specific casualty group status of Medical Facility during a prescribed interval. It is a support transactional in the Medical_Facility_Status_Composite Transactional Artifact.

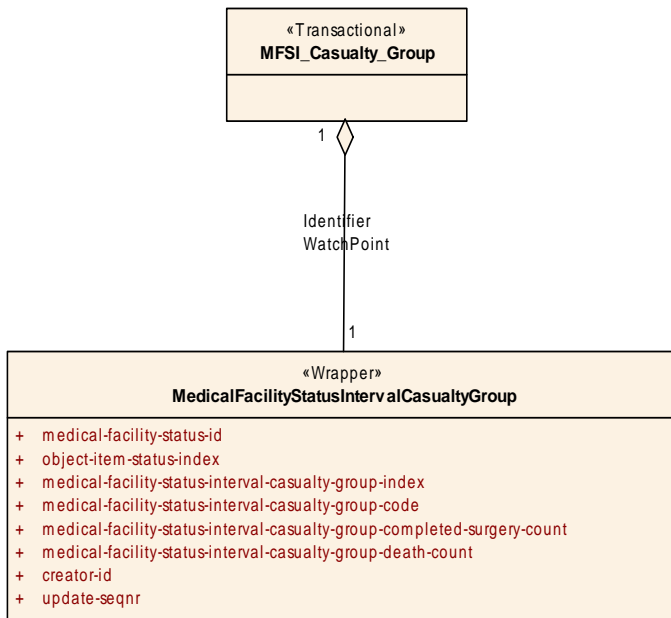


Figure 10.76 - MFSI_Casualty_Group

10.5.7 MFSI_Casualty_Type

The Medical Facility Status Interval (MFSI) _Casualty_Type Transactional Artifact captures information about a specific casualty type status of Medical Facility during a prescribed interval. It is a support transactional in the Medical_Facility_Status_Composite Transactional Artifact.

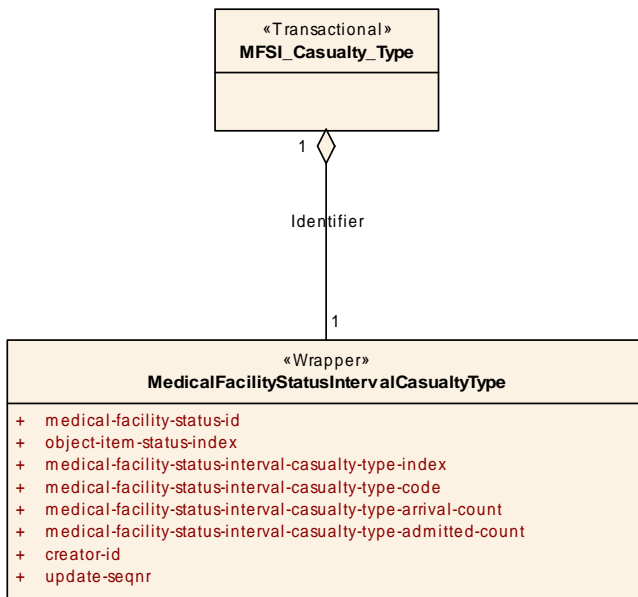


Figure 10.77 - MFSI_Casualty_Type

10.5.8 MFSI_Evacuation

The Medical Facility Status Interval (MFSI) _Evacuation Transactional Artifact captures information about a about a specific casualty evacuation status of Medical Facility during a prescribed interval. It is a support transactional in the Medical_Facility_Status_Composite Transactional Artifact.

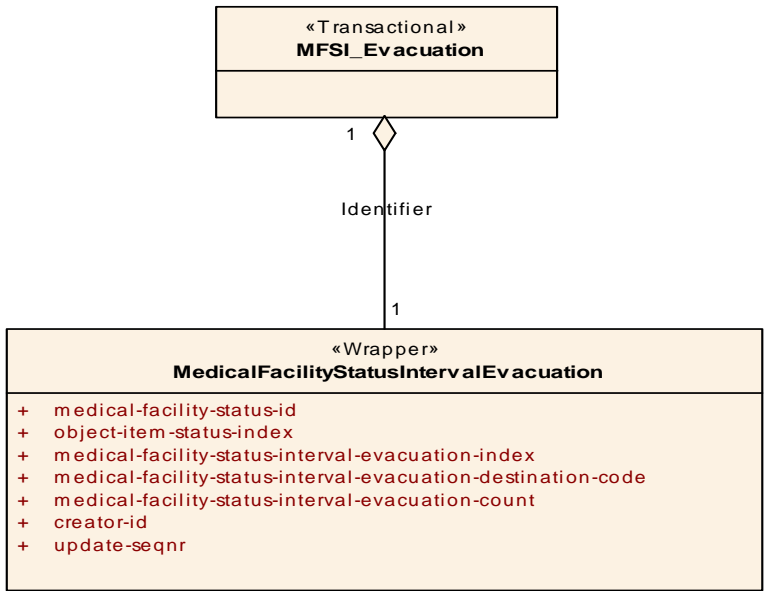


Figure 10.78 - MFSI_Evacuation

10.5.9 MFS_Casualty_Bed_Occupancy

The MFS_Casualty_Bed_Occupancy Transactional Artifact captures information about the casualty bed occupancy status of Medical Facility. It is a support transactional in the Medical_Facility_Status_Composite Transactional Artifact.

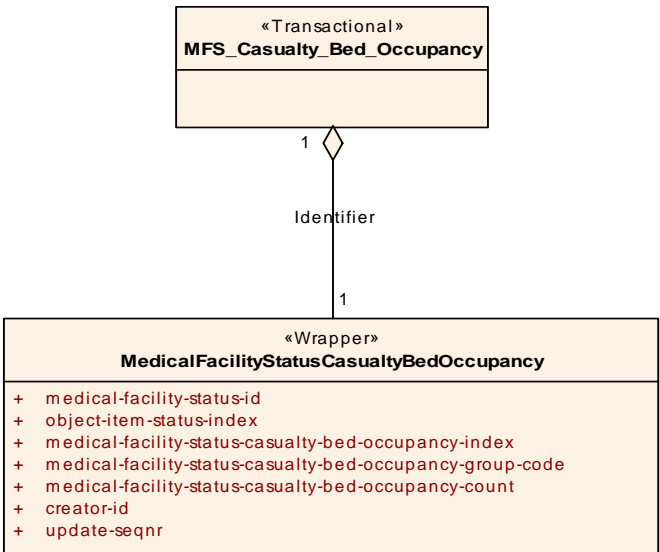


Figure 10.79 - MFS_Casualty_Bed_Occupancy

10.5.10 MFS_Pending_Casualty_Evacuation

The Medical Facility Status (MFS)_Pending_Casualty_Evacuation Transactional Artifact captures information about the pending casualty evacuation status of Medical Facility. It is a support transactional in the Medical_Facility_Status_Composite Transactional Artifact.

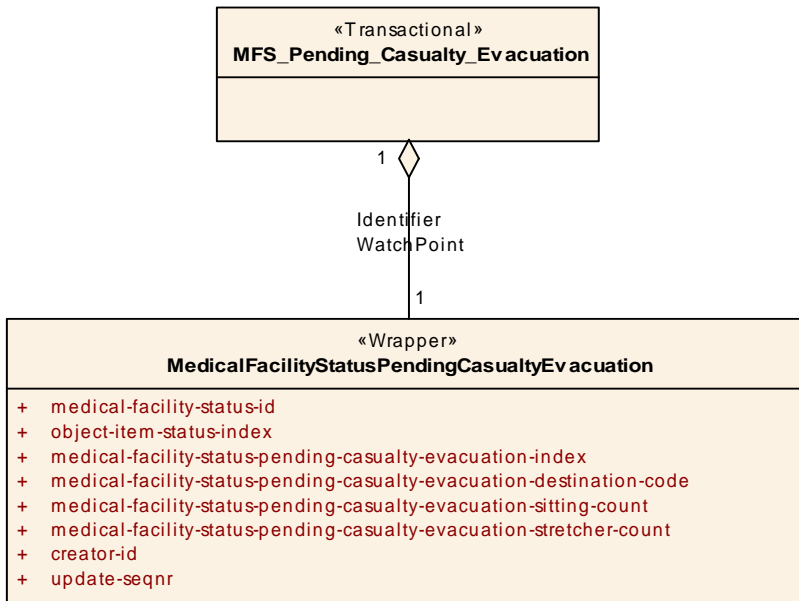


Figure 10.80 - MFS_Pending_Casualty_Evacuation

10.5.11 MFS_Pending_Surgery

The Medical Facility Status (MFS)_Pending_Surgery Transactional Artifact captures information about the casualty pending surgery status of Medical Facility. It is a support transactional in the Medical_Facility_Status_Composite Transactional Artifact.

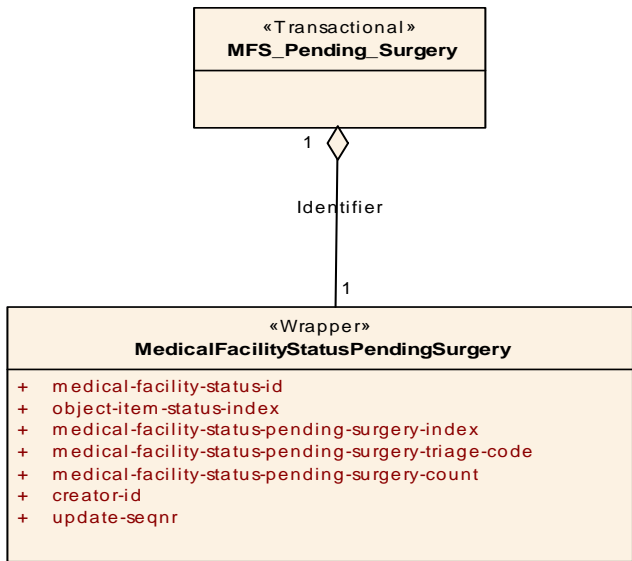


Figure 10.81 - MFS_Pending_Surgery

10.5.12 Medical_Facility_Status_Composite

The Medical_Facility_Status_Composite Transactional Artifact captures information about the condition or status of a number of aspects in a medical facility where the statuses are provided as point counts (e.g., bed-occupancy count), and interval counts (e.g., new patient arrivals in the interval). The point counts that comprise the Medical Facility Status (MFS) are grouped into three child transactionals: MFS_Pending_Surgery, MFS_Casualty_Bed_Occupancy, and MFS_Pending_Casualty_Evacuation, as are the interval counts: MFSI_Casualty_Group, MFSI_Casualty_Type, and MFSI_Evacuation.

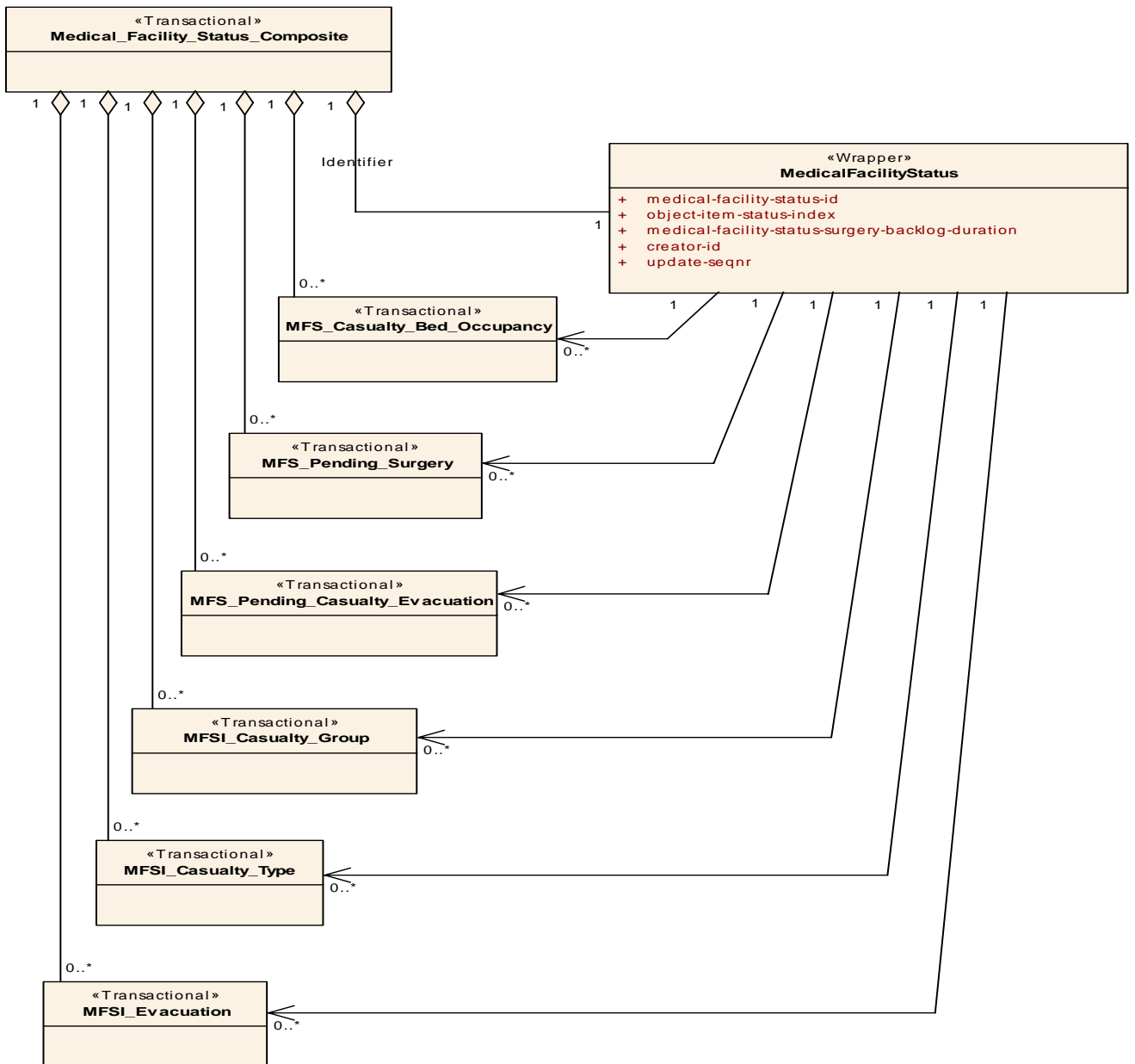


Figure 10.82 - Medical_Facility_Status_Composite

10.5.13 Military_Obstacle

The Military_Obstacle Transactional Artifact captures information about a class of man-made devices or passive defense works that are designed to stop, impede, or divert the movement of amphibious or ground forces. This transactional encloses two supporting Transactional Artifacts; Minefield_Maritime_Casualty_Estimate, and Minefield_Maritime_Sustained_Threat_Measure_Of_Effectiveness.

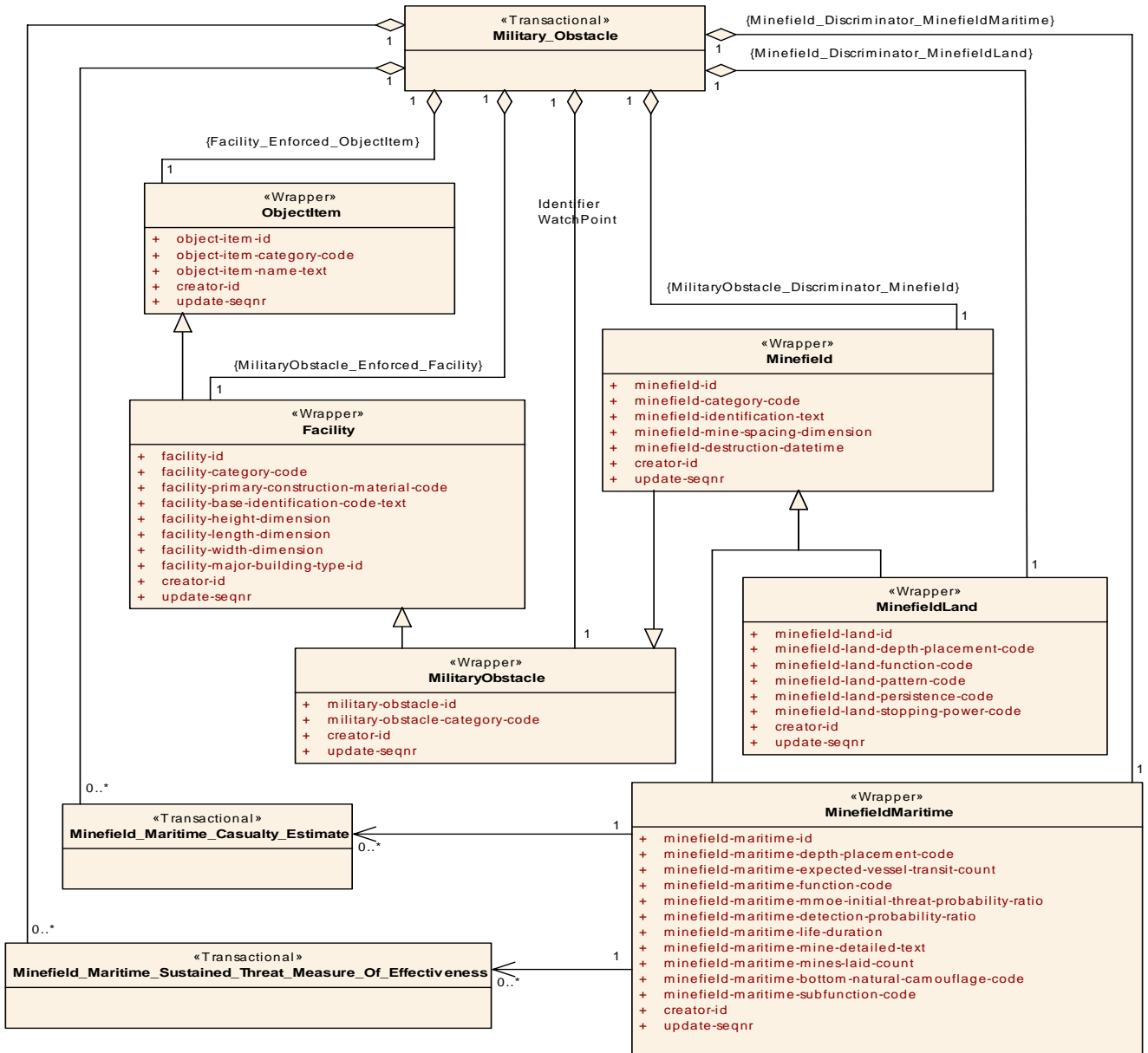


Figure 10.83 - Military_Obstacle

10.5.14 Minefield_Maritime_Casualty_Estimate

The Minefield_Maritime_Casualty_Estimate Transactional Artifact captures information about a maritime minefield, which is a type of military obstacle. This transactional is a support transactional on the Military_Obstacle Transactional Artifact.

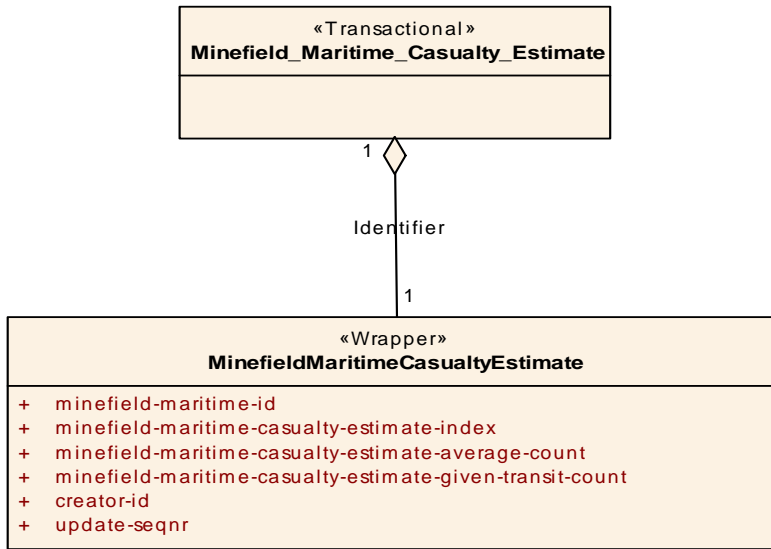


Figure 10.84 - Minefield_Maritime_Casualty_Estimate

10.5.15 Minefield_Maritime_Sustained_Threat_Measure_Of_Effectiveness

The Minefield_Maritime_Sustained_Threat_Measure_Of_Effectiveness Transactional Artifact captures information about a maritime minefield, which is a type of military obstacle. This transactional is a support transactional on the Military_Obstacle Transactional Artifact.

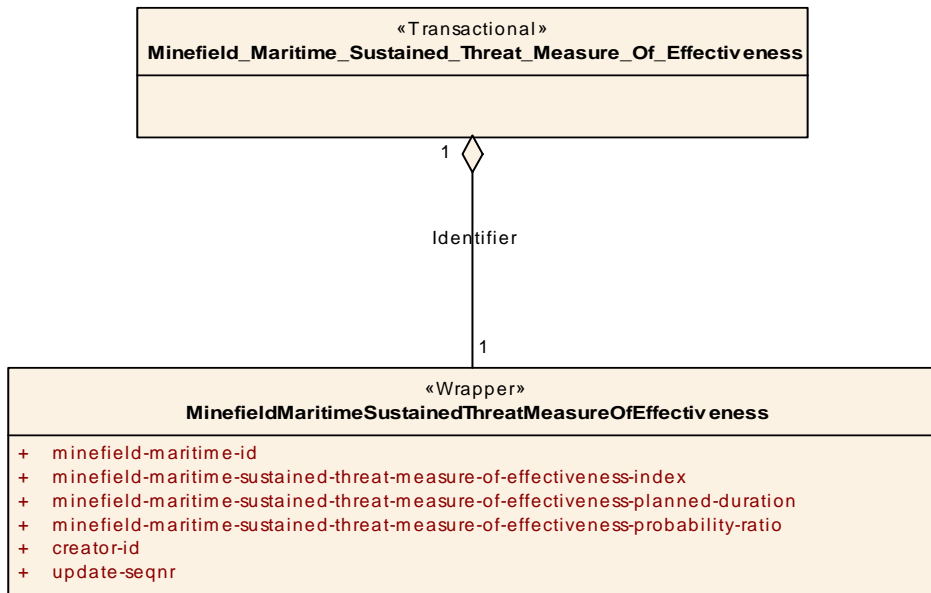


Figure 10.85 - Minefield_Maritime_Sustained_Threat_Measure_Of_Effectiveness

10.5.16 Network_Facility_Capacity

The Network_Facility_Capacity Transactional Artifact captures information about the capacity of a Network Facility. This transactional is a support transactional on the Network_Facility_Item Transactional Artifact.

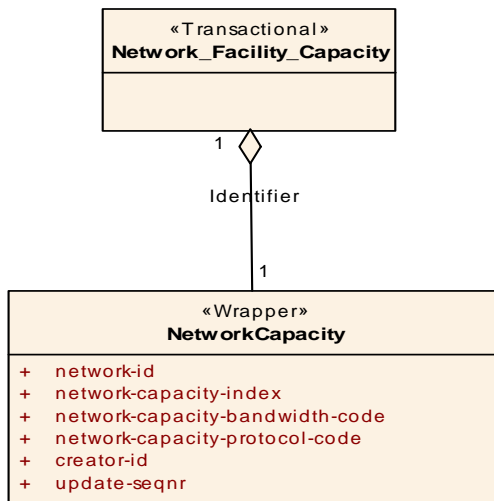


Figure 10.86 - Network_Facility_Capacity

10.5.17 Network_Facility_Frequency

The Network_Facility_Frequency Transactional Artifact captures information about the RF frequencies used by a Network Facility. This transactional is a support transactional on the Network_Facility_Item Transactional Artifact.

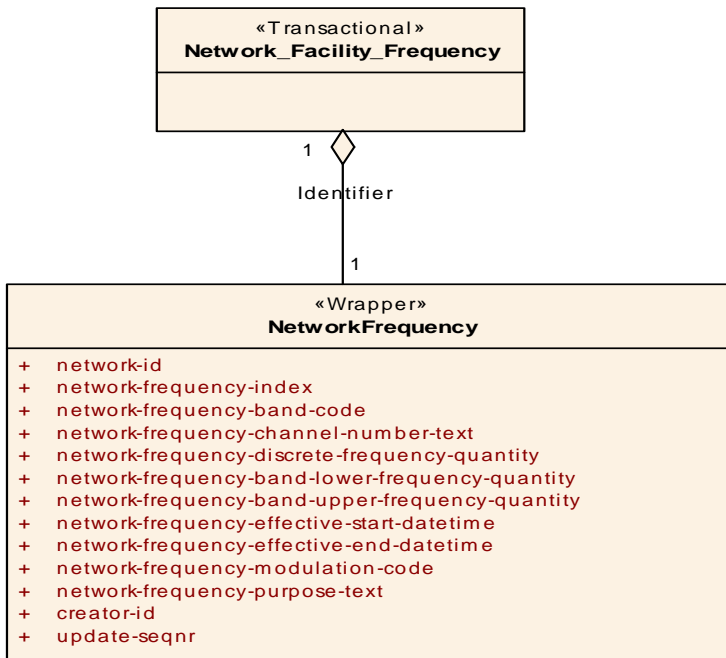


Figure 10.87 - Network_Facility_Frequency

10.5.18 Network_Facility_Item

The Network_Facility_Item Transactional Artifact captures information about a specific Network Facility. This transactional encloses two supporting Transactional Artifact Network_Facility_Capacity and Network_Facility_Frequency.

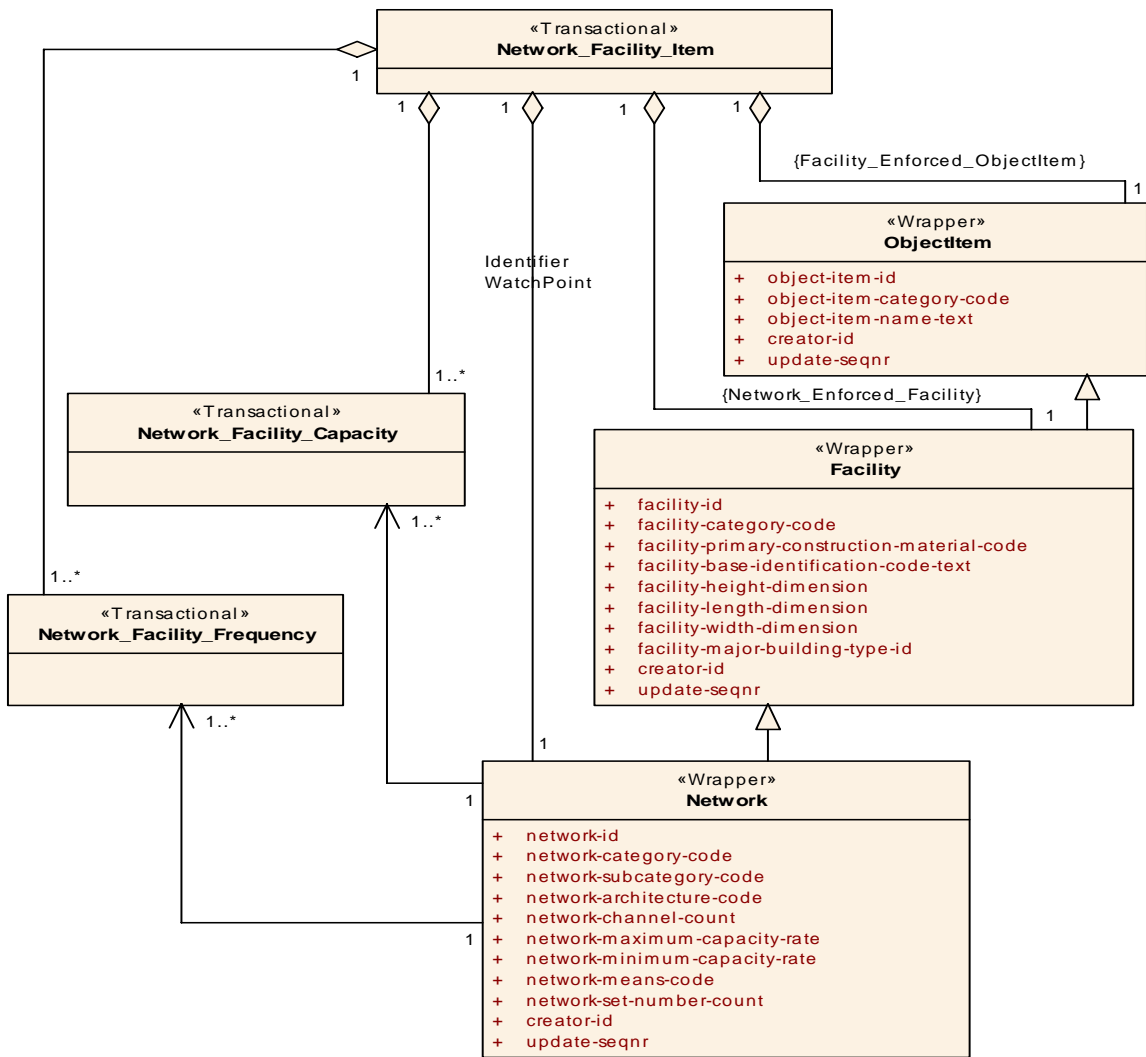


Figure 10.88 - Network_Facility_Item

10.5.19 Network_Facility_Service

The Network_Facility_Item Transactional Artifact captures information about a specific Network Facility. This transactional encloses two supporting Transactional Artifact Network_Facility_Capacity and Network_Facility_Frequency.

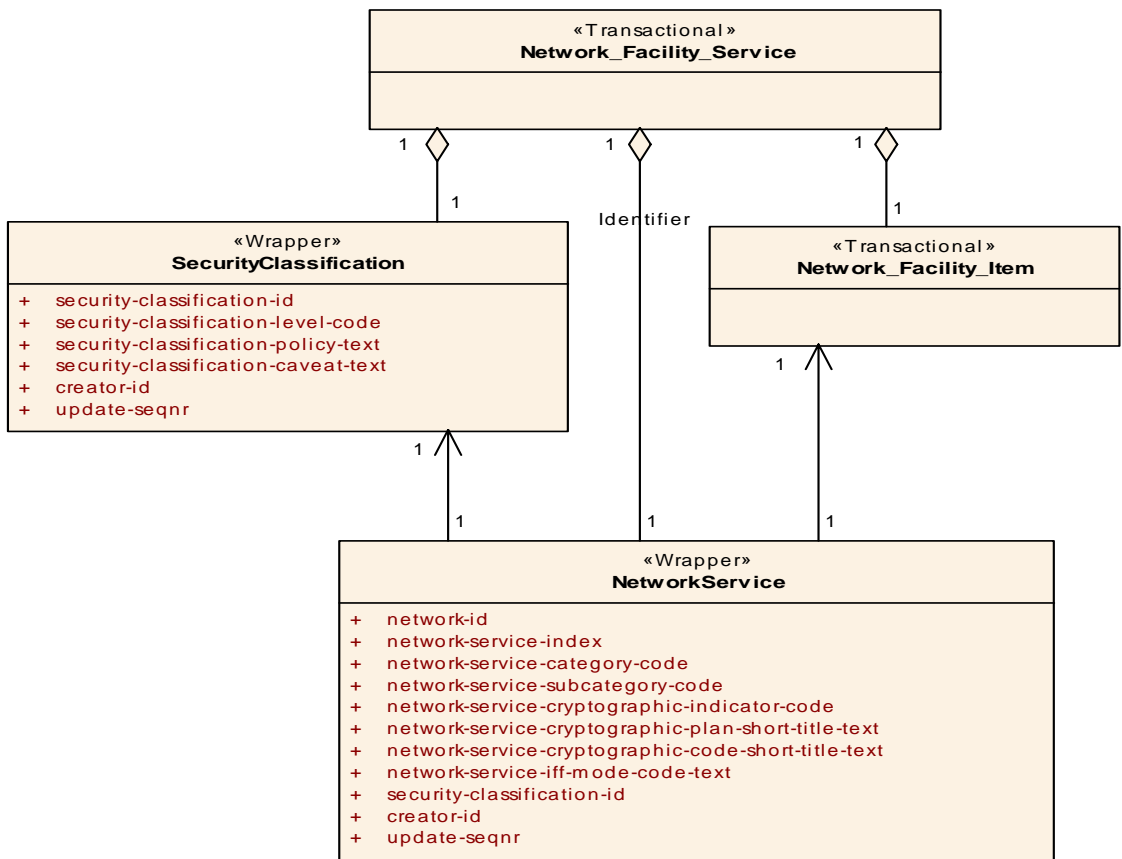


Figure 10.89 - Network_Facility_Service

10.5.20 Network_Facility_Service_Status

The Network_Facility_Service_Status Transactional Artifact captures the perceived condition of a specific network service, referred to in the Network_Facility_Item_Data Transactional Artifact, as determined by the reporting organization. The status indicates whether or not the specific network service is active. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the status report is captured.

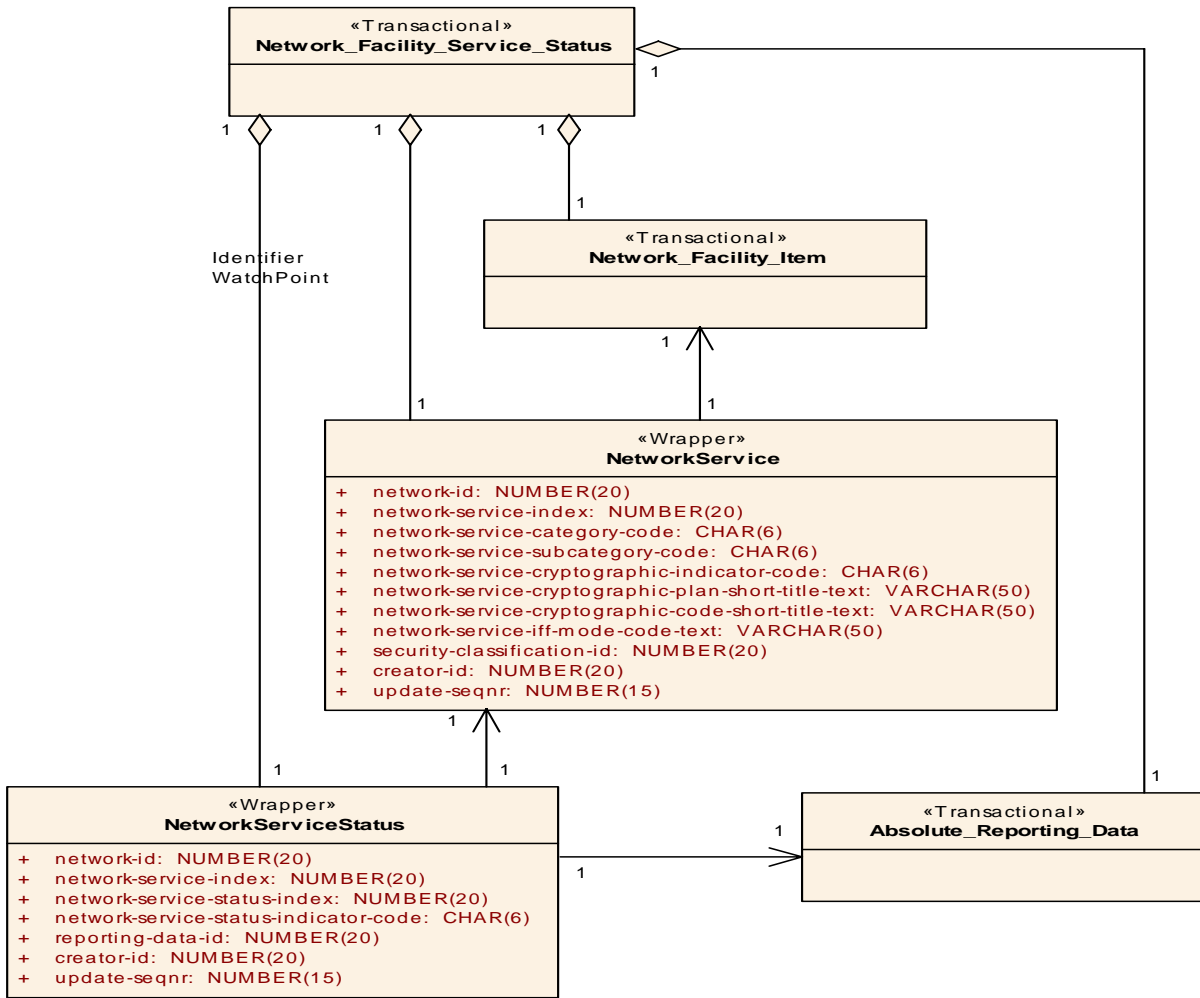


Figure 10.90 - Network_Facility_Service_Status

10.5.21 Runway_Approach_Direction_Assoc

The Runway_Approach_Direction Transactional Artifact captures information about the association between a runway (a facility) and an approach-direction (a control-feature that specifies approach directional details for takeoff and landing).

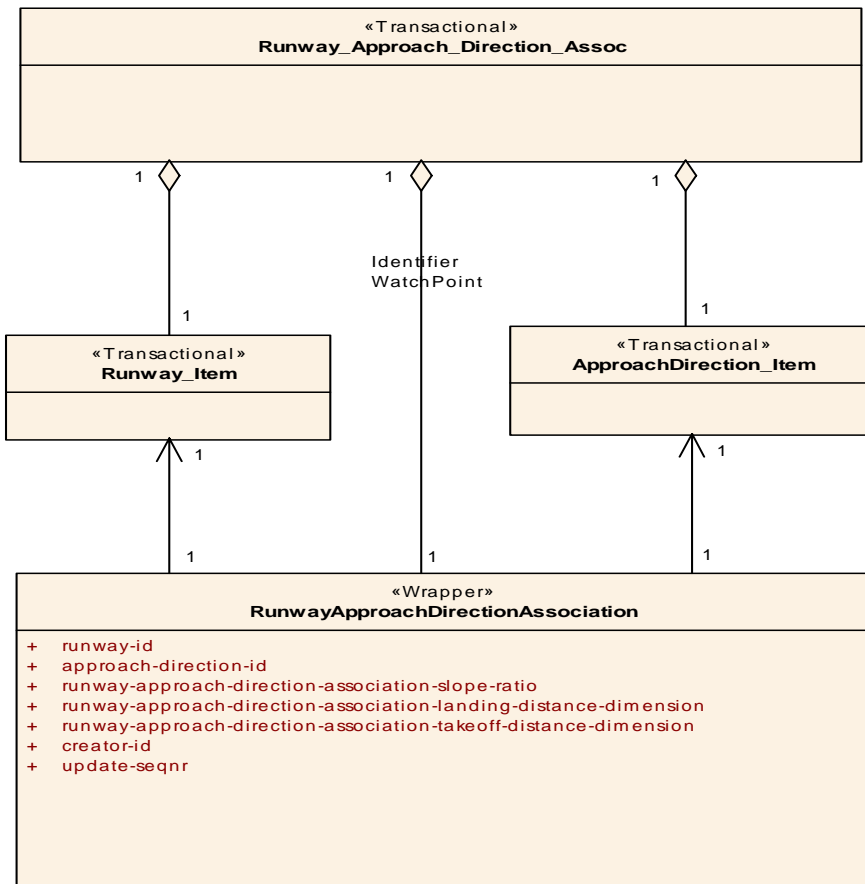


Figure 10.91 - Runway_Approach_Direction_Assoc

10.5.22 Runway_Item

The Runway_Item Transactional Artifact captures information about an individually identified instance of a Runway which can be utilized to assess the capabilities of the individual facility for aircraft landing and take-off.

Runway_Approach_Direction_Assoc is a support transactional of Transactional Artifact Runway_Approach_Direction_Assoc.

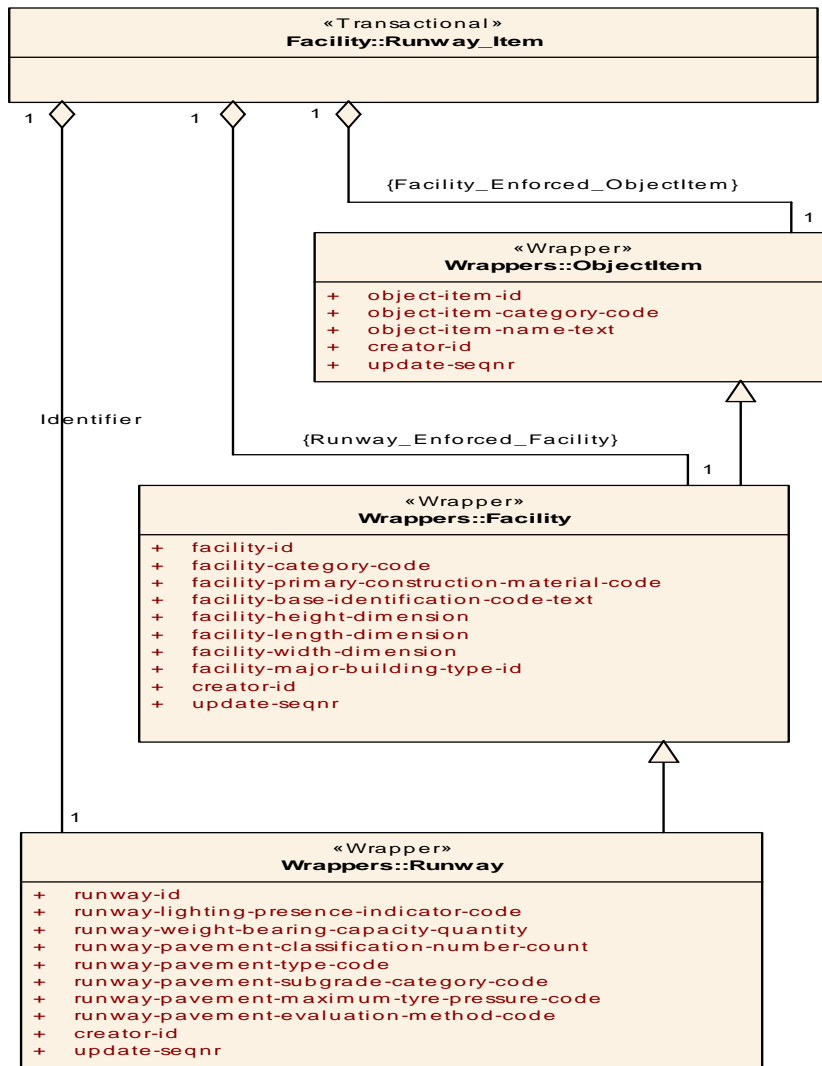


Figure 10.92 - Runway_Item

10.6 GeographicFeature

The GeographicFeature package presents data patterns that describe terrain characteristics to which operational significance is attached in terms of JC3IEDM information elements.

10.6.1 GeographicFeature_Item

The GeographicFeature_Item Transactional Artifact captures information about an individually identified instance of feature describing terrain characteristics to which operational significance is attached. The information maintained in this transactional captures characteristics of the surface such as its type, hardness, and composition, and terrain characteristics such as the vegetation cover or whether it is hilly or flat.

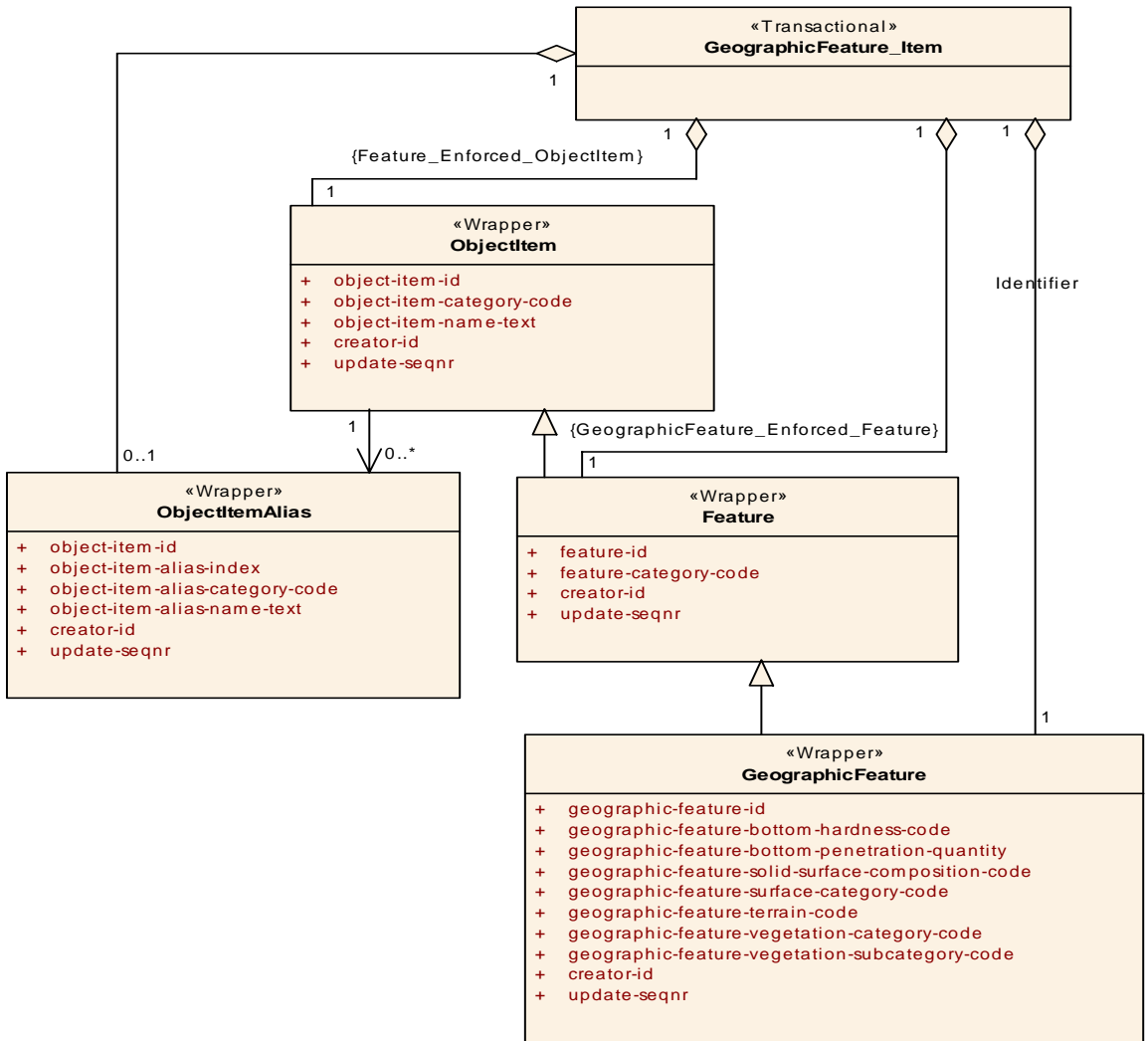


Figure 10.93 - GeographicFeature_Item

10.6.2 GeographicFeature_Item_Type

The GeographicFeature_Item_Type Transactional Artifact captures information about the perceived classification of a specific geographic-feature-item as a specific geographic-feature-type. This transactional encloses the Absolute_Reporting_Data Transactional Artifact in which information about the type classification is captured.

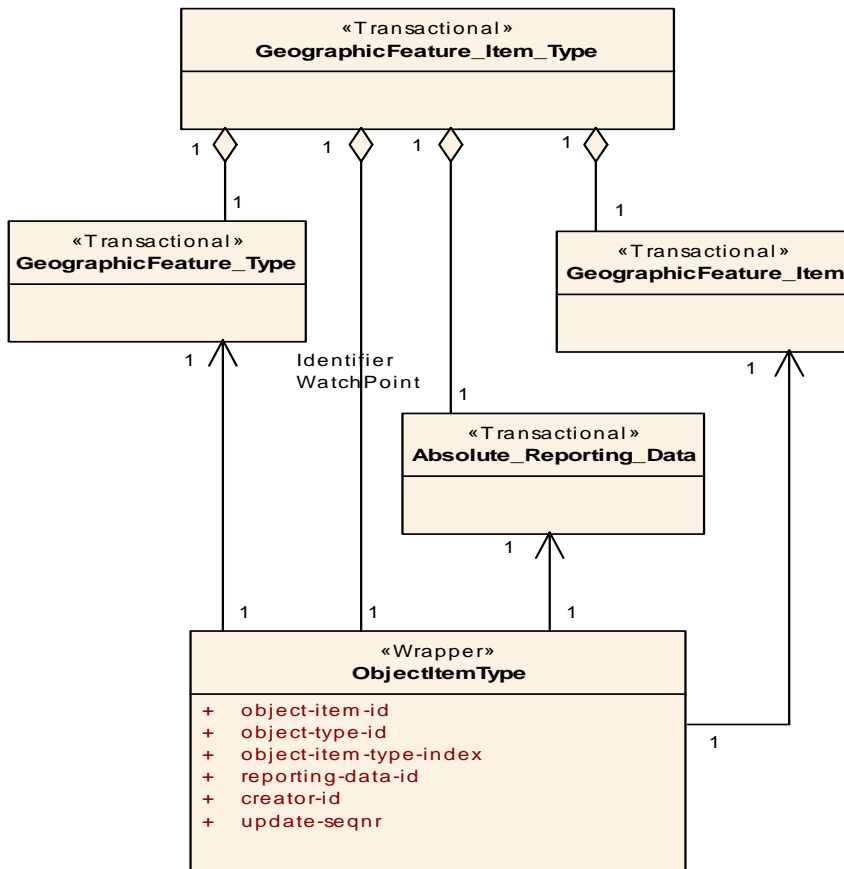


Figure 10.94 - GeographicFeature_Item_Type

10.6.3 GeographicFeature_Position

The GeographicFeature_Position Transactional Artifact captures information about the association of a geographic-feature to a location so that the geographic position of the geographic-feature can be specified. This transactional encloses the Location_Composite Transactional Artifact to support the specification of the location in geometrical terms. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the location association is captured.

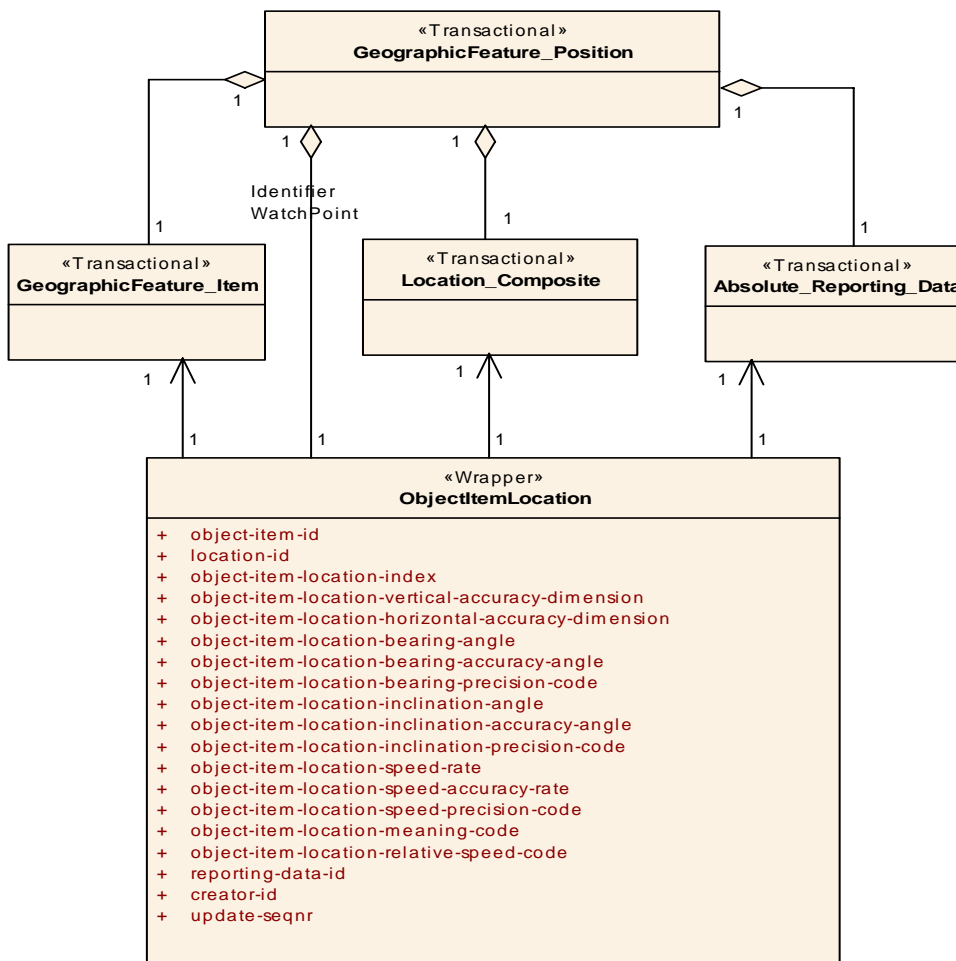


Figure 10.95 - GeographicFeature_Position

10.6.4 GeographicFeature_Status

The GeographicFeature_Status Transactional Artifact captures information about the condition or status of a specific geographic feature. The status information captured pertains to the surface of the geographic feature, in terms of whether it is liquid or solid, and whether or not it contains mines. These are captured in three subtypes of geographic-feature status: Liquid_Body_Status, Liquid_Surface_Status and Solid_Surface_Status. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the status report is captured.

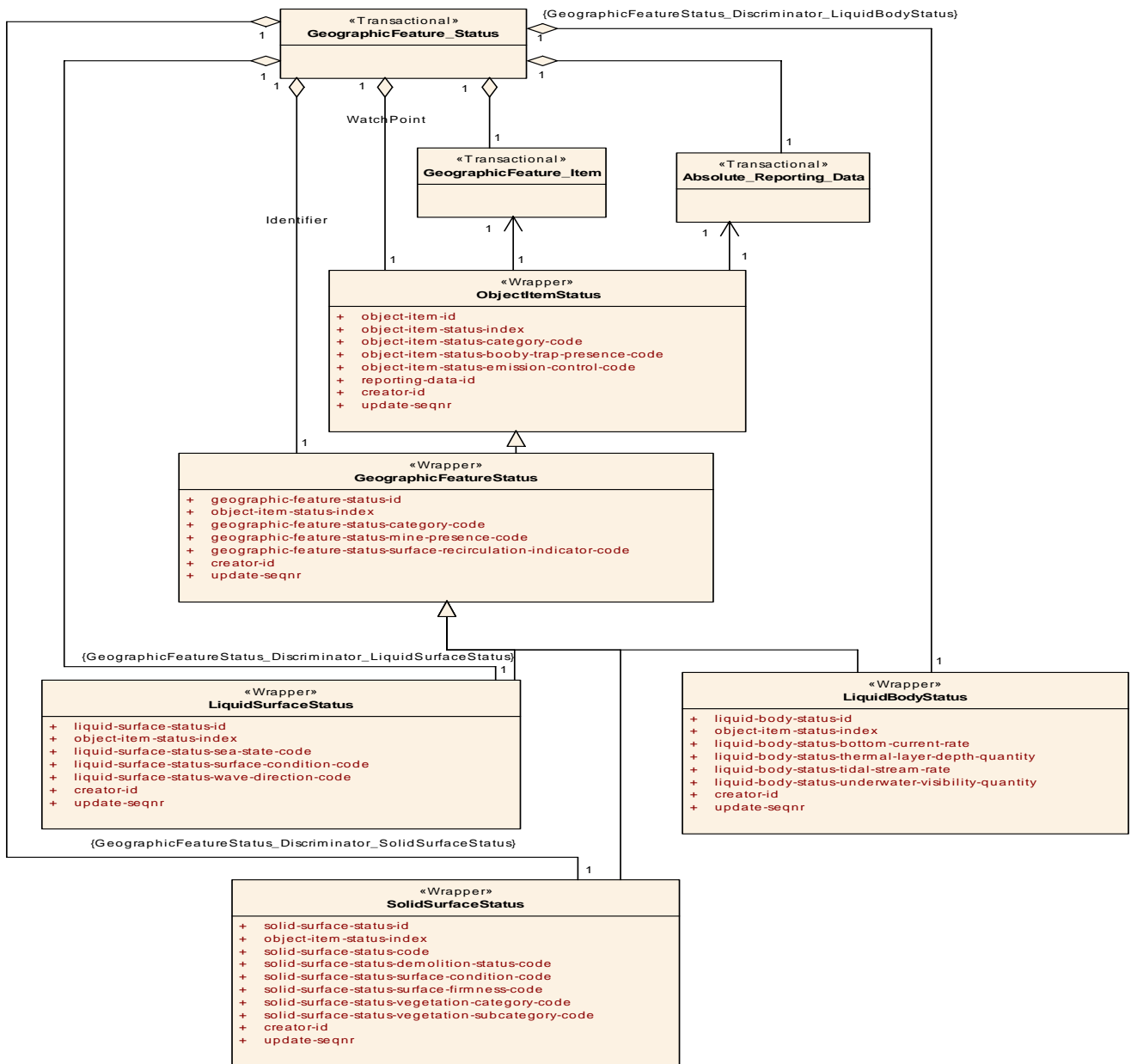


Figure 10.96 - GeographicFeature_Status

10.6.5 GeographicFeature_Type

The GeographicFeature_Type Transactional Artifact captures information about a type of permanent and durable natural feature, and describes terrain characteristics to which operational significance is attached.

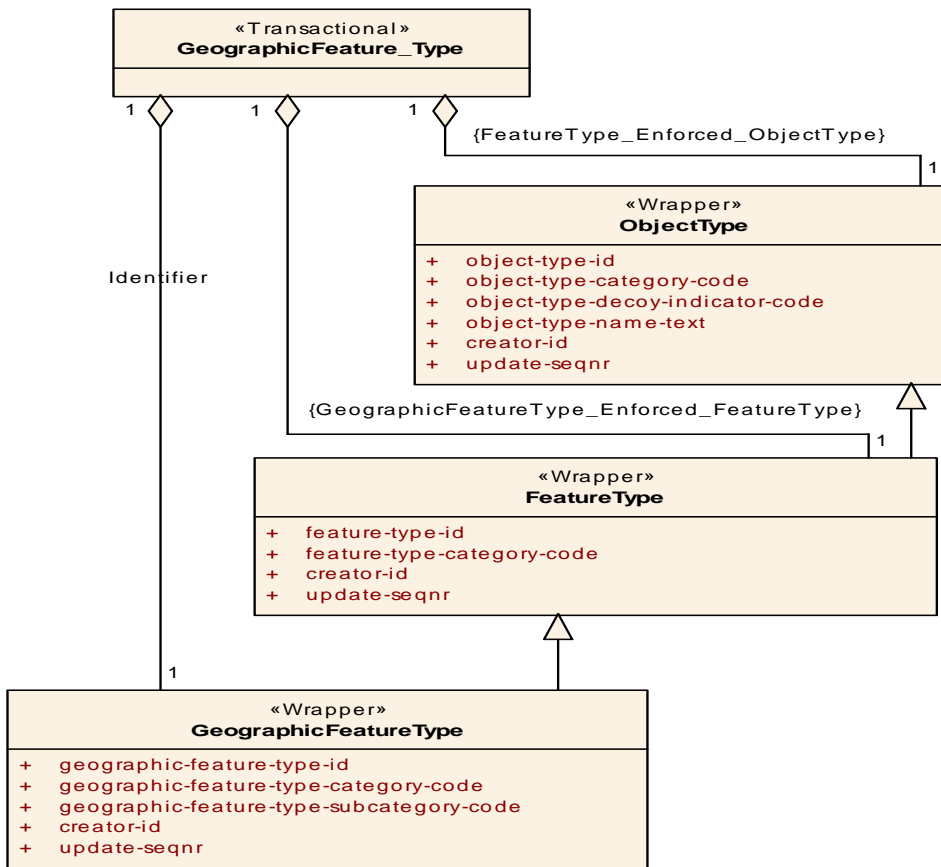


Figure 10.97 - GeographicFeature_Type

10.7 Holding

The Holding package presents data patterns that indicate the quantities of object-types that are held by, installed in, or included with object-items.

10.7.1 Holdings

The Holding Transactional Artifact captures information about the quantities of each specific object-type that is held by, installed in, or included with a specific object-item. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the holding report is captured.

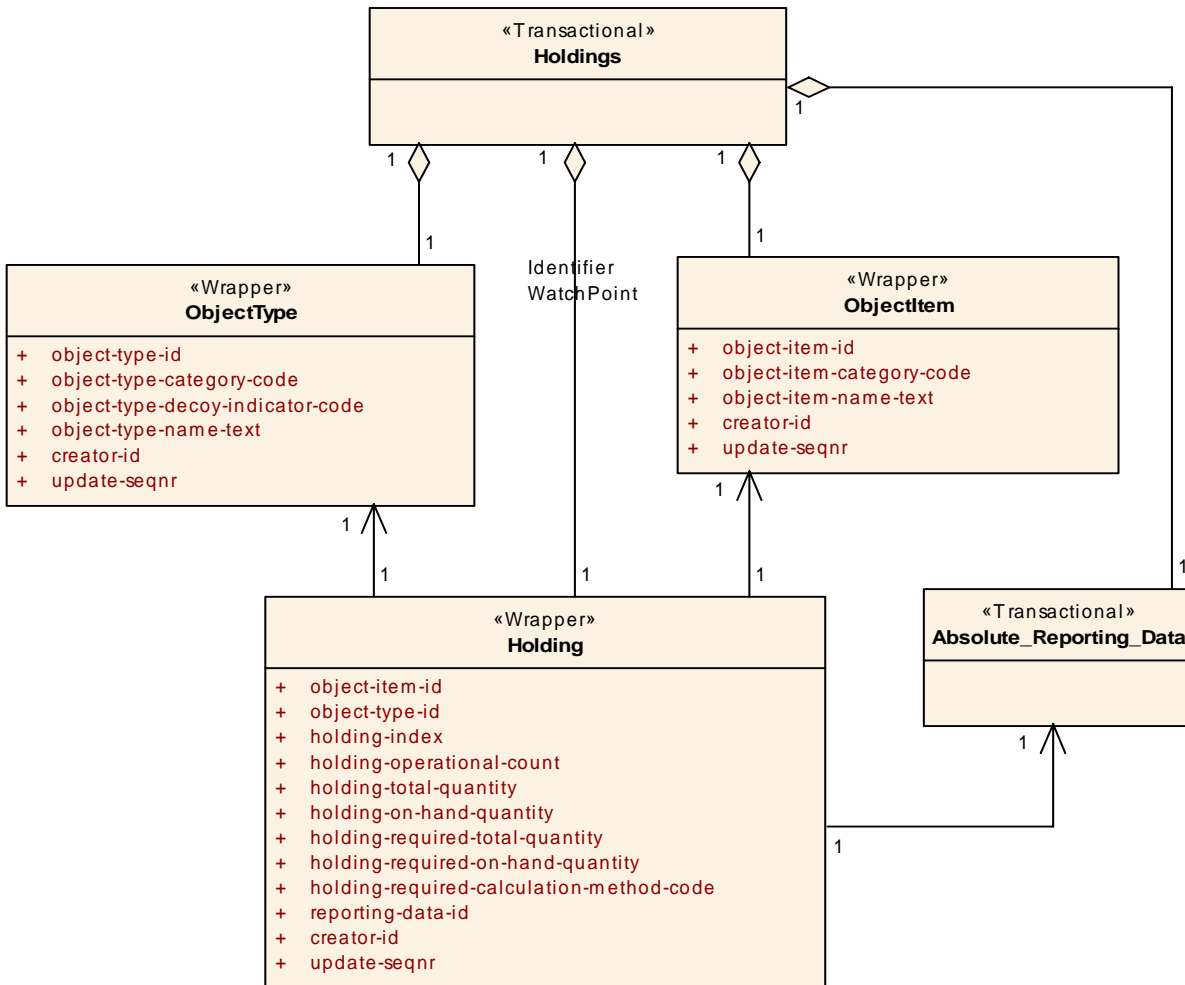


Figure 10.98 - Holdings

10.7.2 Holding_Transfer

The Holding_Transfer Transactional Artifact captures information about the quantities of each specific object-type that are expected to be added to, or subtracted from, a Holding. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the holding report is captured.

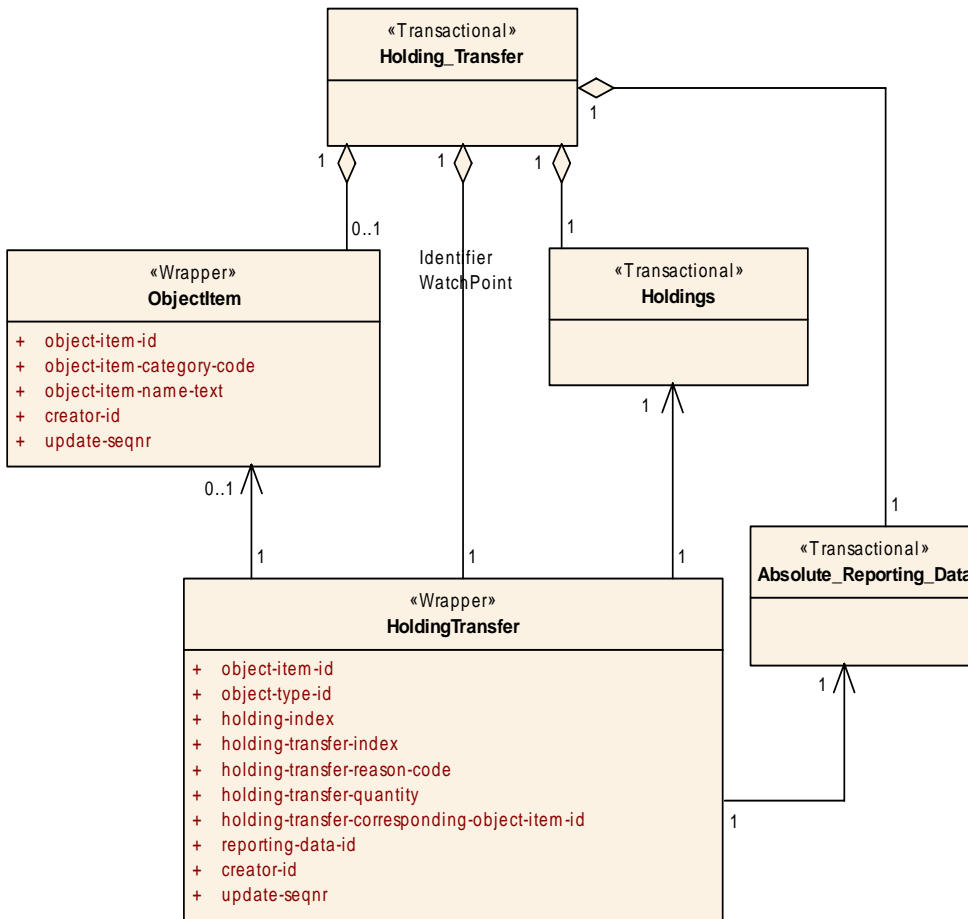


Figure 10.99 - Holding_Transfer

10.8 Location

The Geometry package presents data patterns that specify position and geometry, normally pertaining to battle-space objects. The specification is with respect to a horizontal frame of reference and a vertical distance measure from a specific datum.

10.8.1 Absolute_Point

The Absolute_Point Transactional Artifact captures information about an individual point specified in absolute terms (i.e., specified with respect to either a standard description of the surface of the earth or an earth-centered cartesian coordinate system). The transactional encloses the Cartesian_Point and Geographic_Point Transactional Artifacts that further refine the point in terms of the applicable coordinate system.

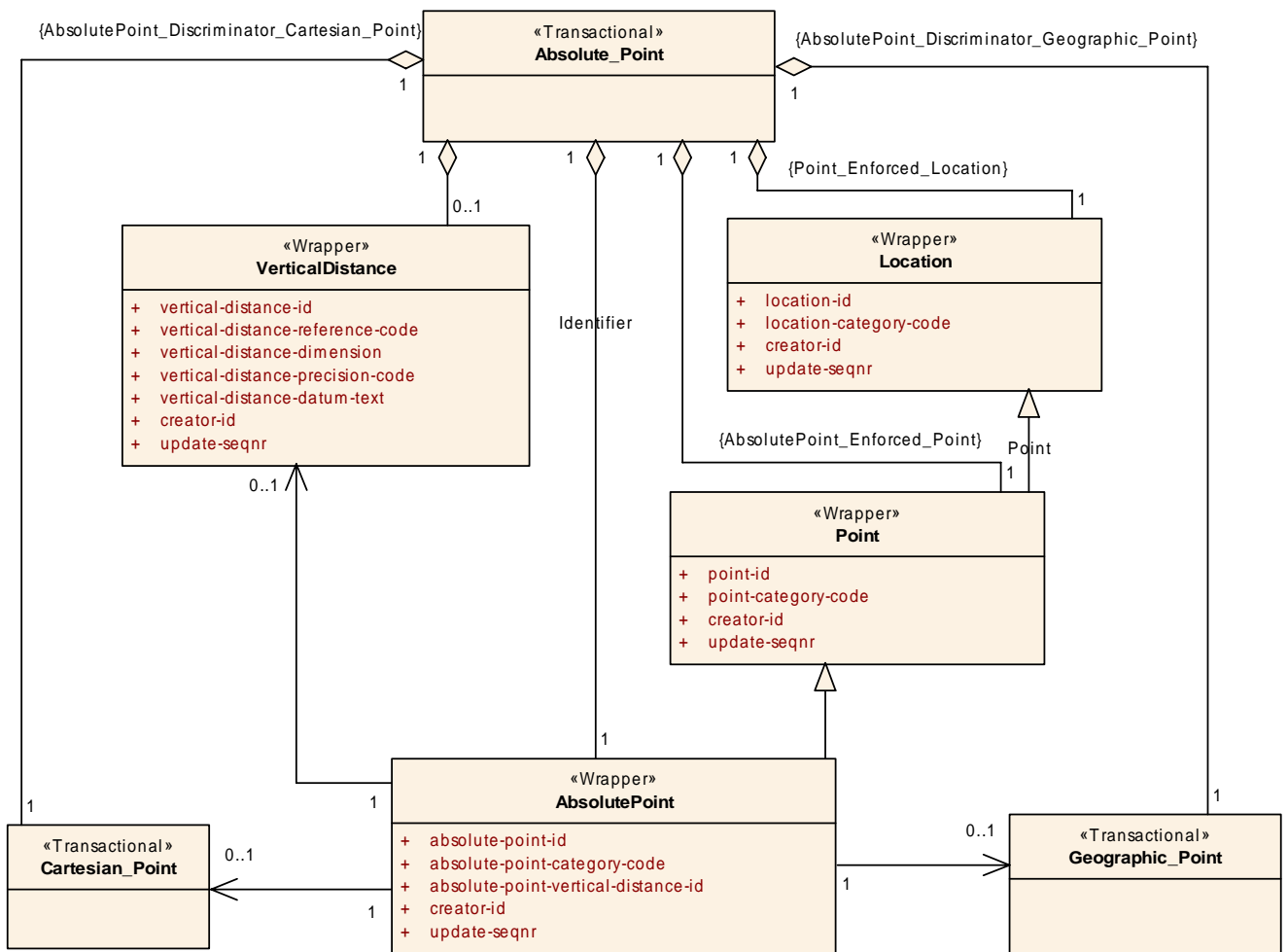


Figure 10.100 - Absolute_Point

10.8.2 Cartesian_Point

The Cartesian_Point Transactional Artifact is a support transactional for Absolute_Point and captures information about an absolute point that has its position specified in a three-dimensional earth-centered cartesian coordinate system.

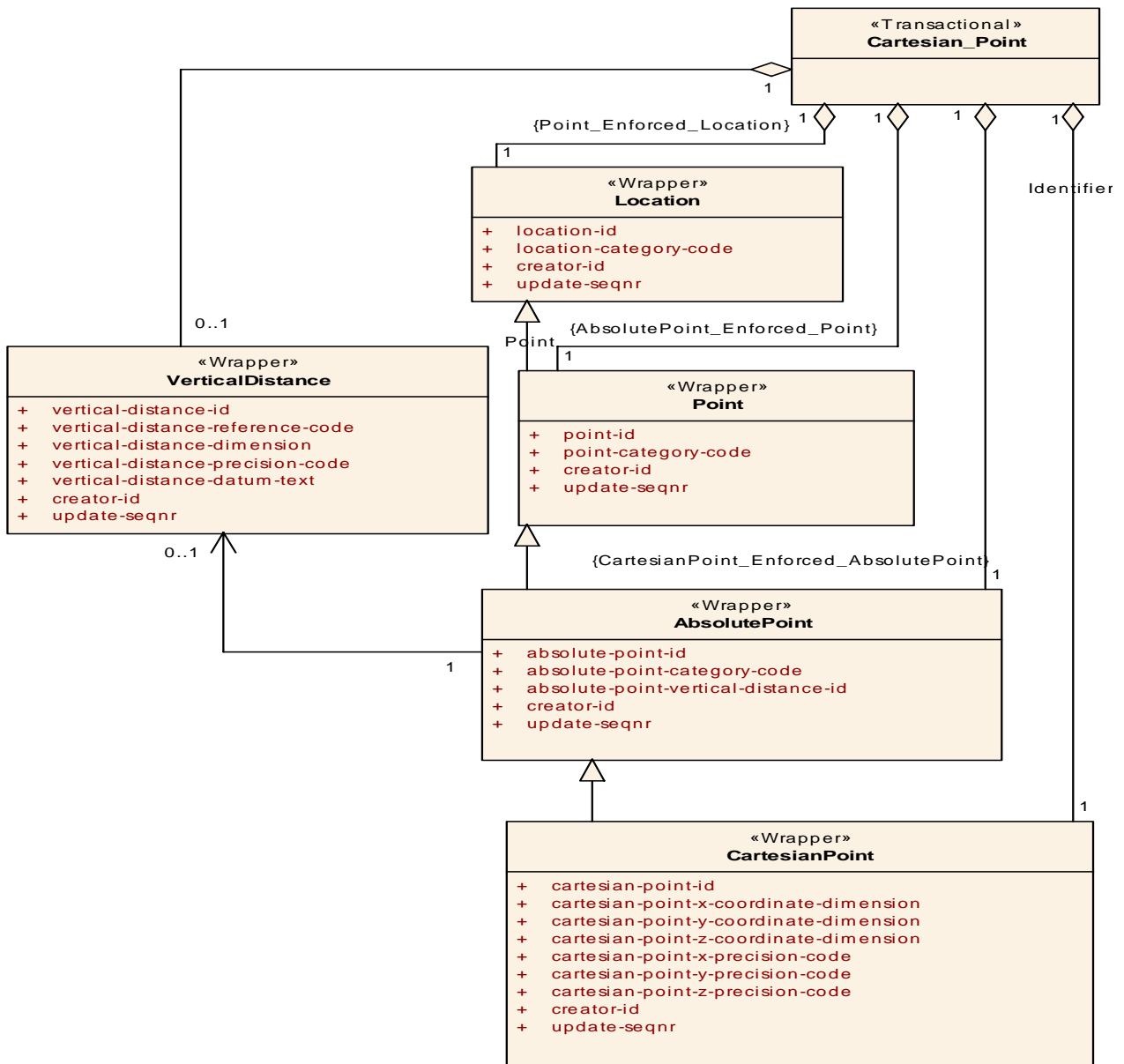


Figure 10.101 - Cartesian_Point

10.8.3 Cone_Volume

The Cone_Volume Transactional Artifact captures information about a geometric-volume whose boundary is swept by a line that has one fixed point (called the vertex) and another that moves along the path defined by the boarder of a specific surface (called the projected surface).

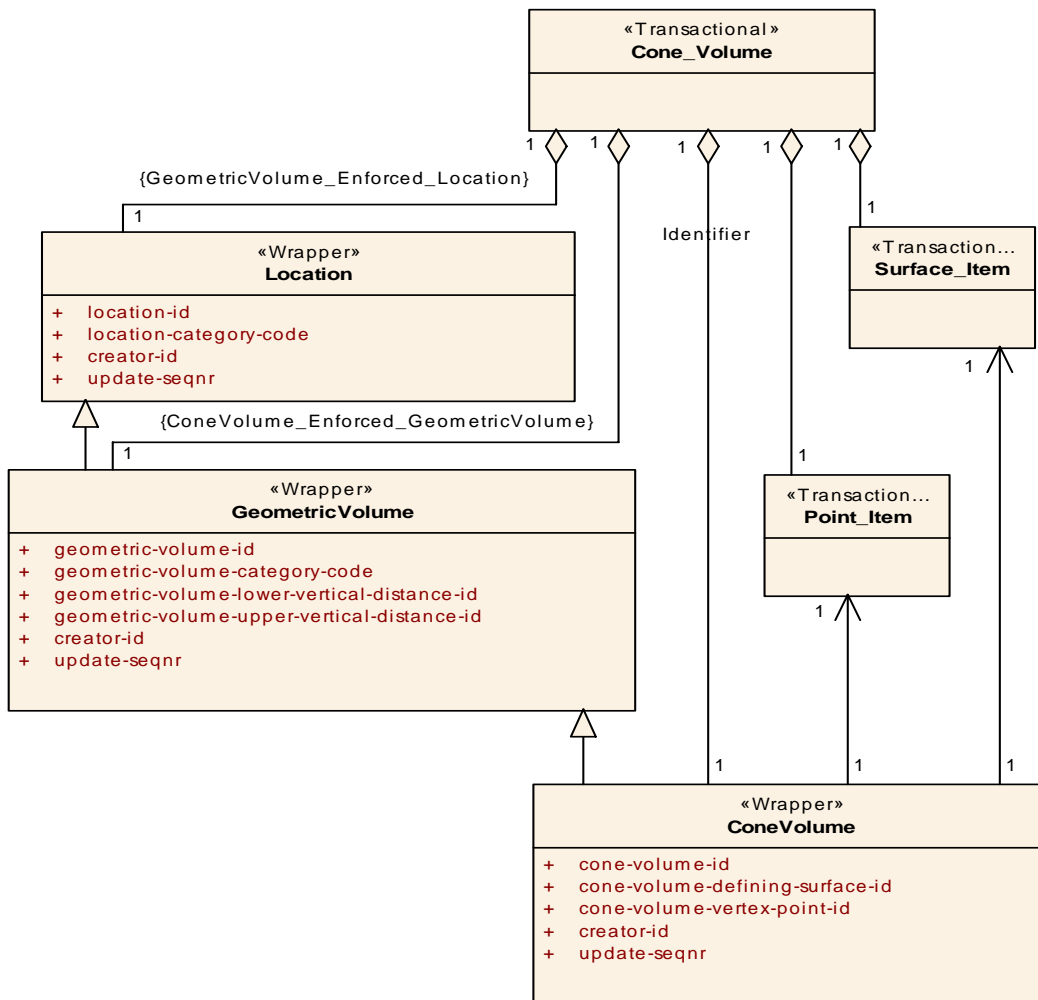


Figure 10.102 - Cone_Volume

10.8.4 CorridorArea_Surface

The CorridorArea_Surface Transactional Artifact captures information about a specific surface that is defined by its width and a sequence of points. It is a support transactional used in the Surface_Area Transactional Artifact.

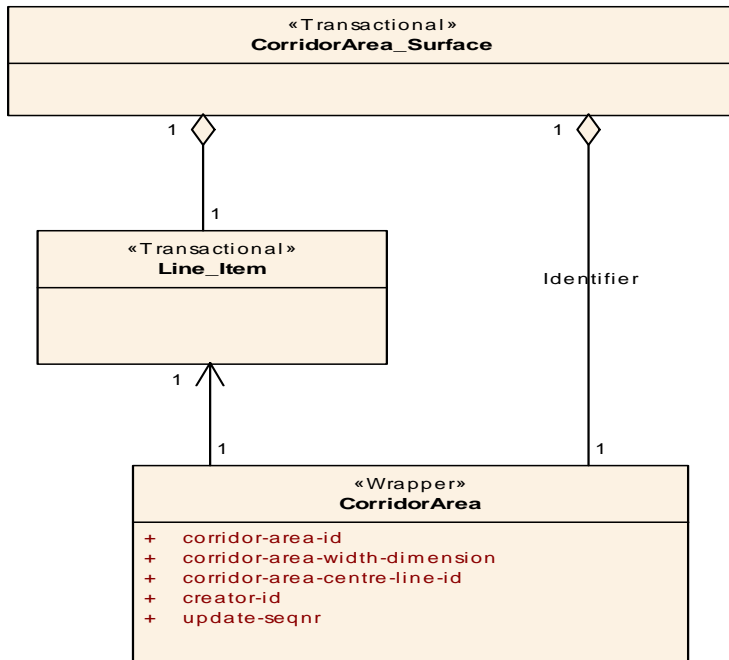


Figure 10.103 - CorridorArea_Surface

10.8.5 Ellipse_Surface

The Ellipse_Surface Transactional Artifact captures information about a specific planer surface that is defined by three points that establish the origin and the endpoints of the major and minor semi-axis. It is a support transactional used in the Surface_Area Transactional Artifact.

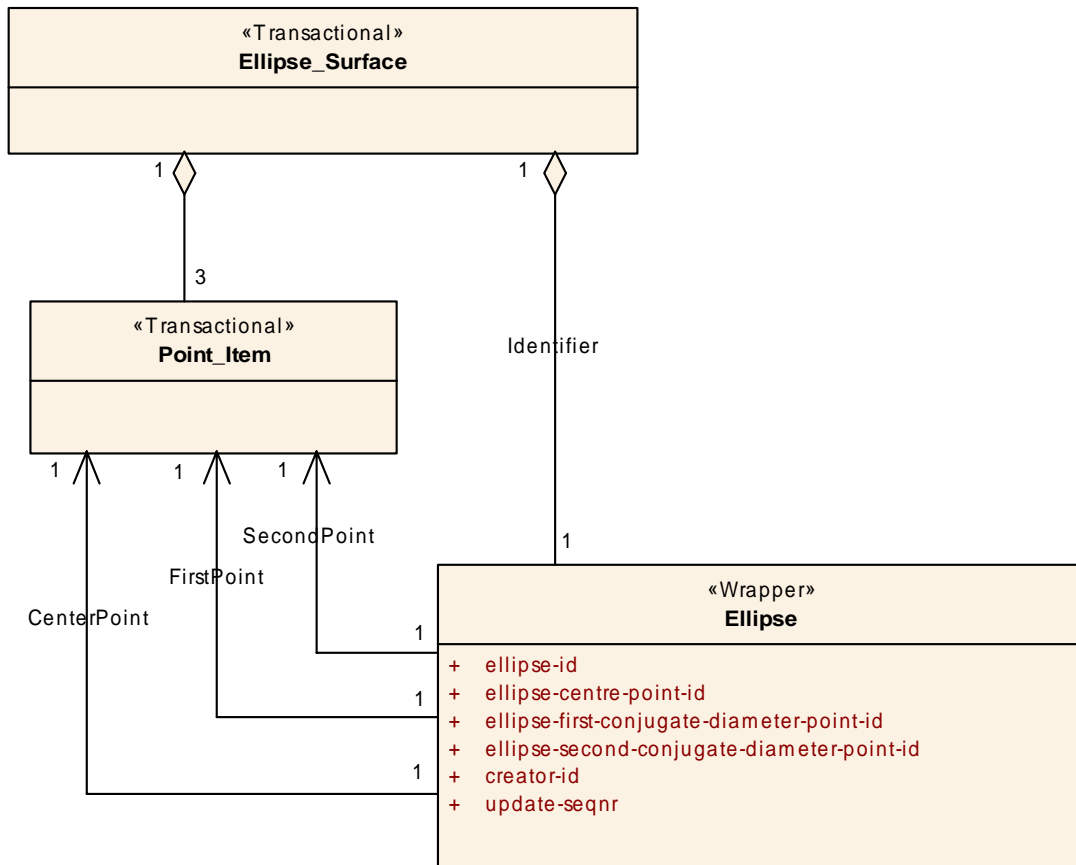


Figure 10.104 - Ellipse_Surface

10.8.6 FanArea_Surface

The FanArea_Surface Transactional Artifact captures information about a specific surface that is in the form of a truncated ring sector, lying between and bounded by the rays emanating from the center-point of the ring and having a specified central angle. It is a support transactional used in the Surface_Area Transactional Artifact.

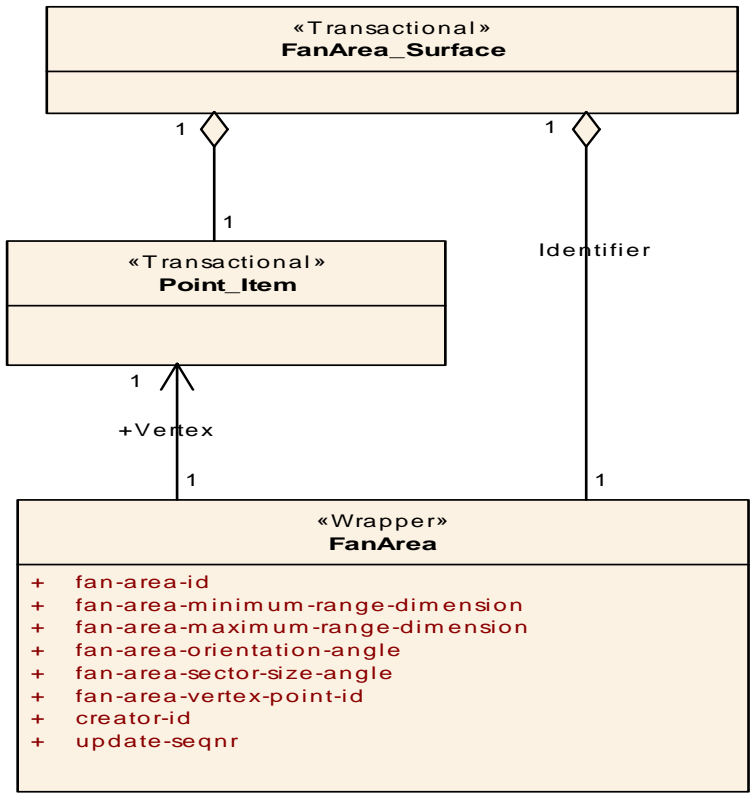


Figure 10.105 - FanArea_Surface

10.8.7 Geographic_Point

The Geographic_Point Transactional Artifact is a support transactional for Absolute_Point and captures information about an absolute point that has its position specified with respect to the 1984 World Geodetic System (WGS 84) ellipsoid.

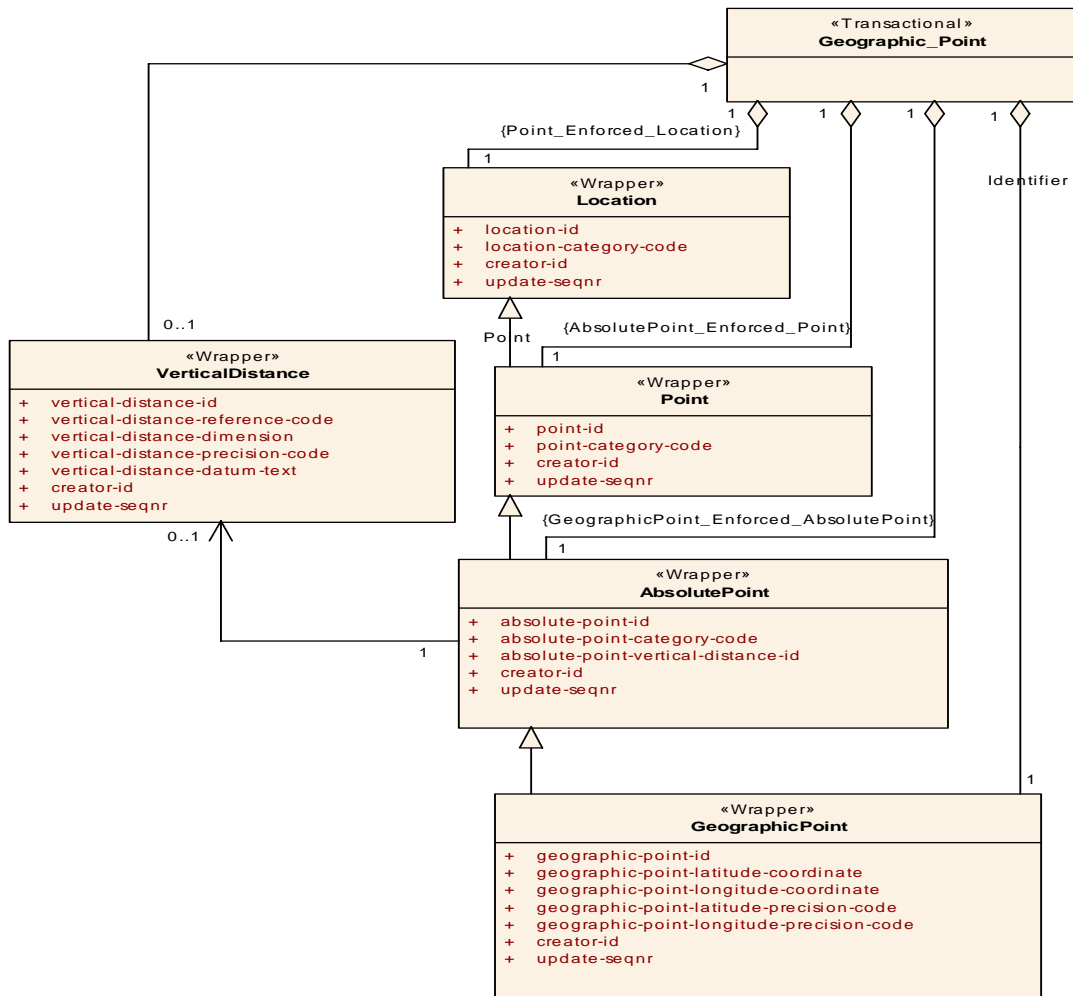


Figure 10.106 - Geographic_Point

10.8.8 Geometric_Volume_Item

The Geometric_Volume_Item Transactional Artifact captures information about a specific location that is a three-dimensional bounded space. It has three subtypes; cone, sphere and cylinder. It is a support transactional used in the Location_Composite Transactional Artifact.

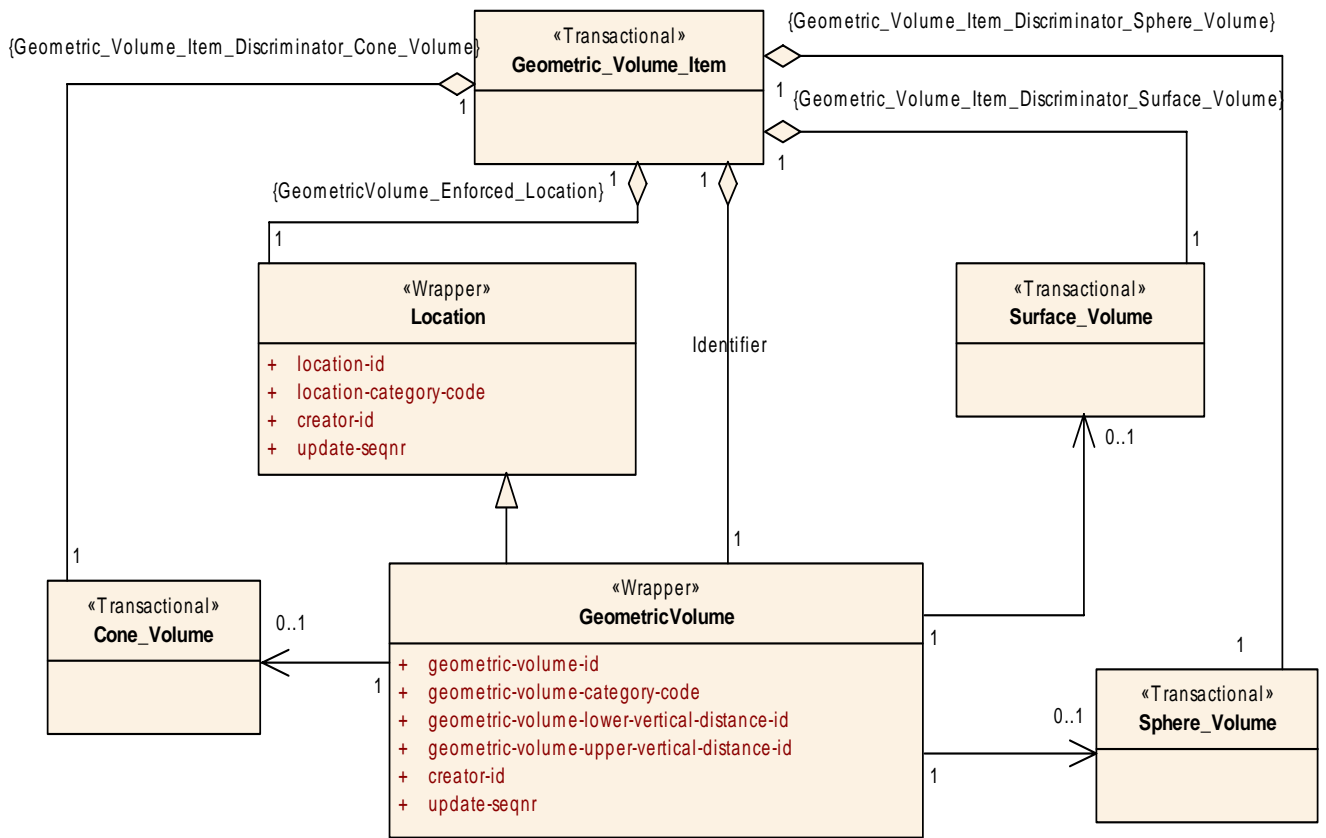


Figure 10.107 - Geometric_Volume_Item

10.8.9 LinePoint_Item

The LinePoint_Item Transactional Artifact captures information about one of an ordered sequence of points used to define a specific Line. This transactional is a support transactional used in the Line_Item Transactional Artifact.

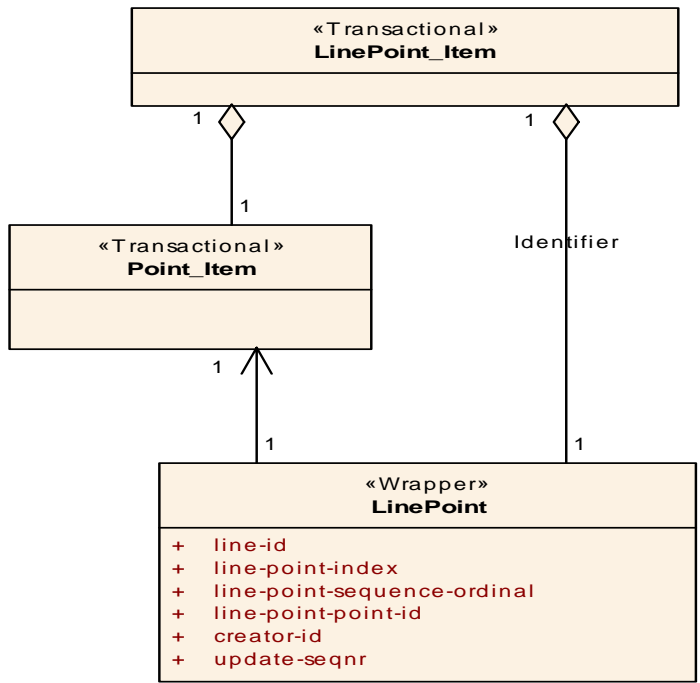


Figure 10.108 - LinePoint_Item

10.8.10 Line_Item

The Line_Item Transactional Artifact captures information about a specific location that is defined by two or more points connected by one-dimensional line segments in an ordered sequence. This transactional is a support transactional used in the Location_Composite Transactional Artifact.

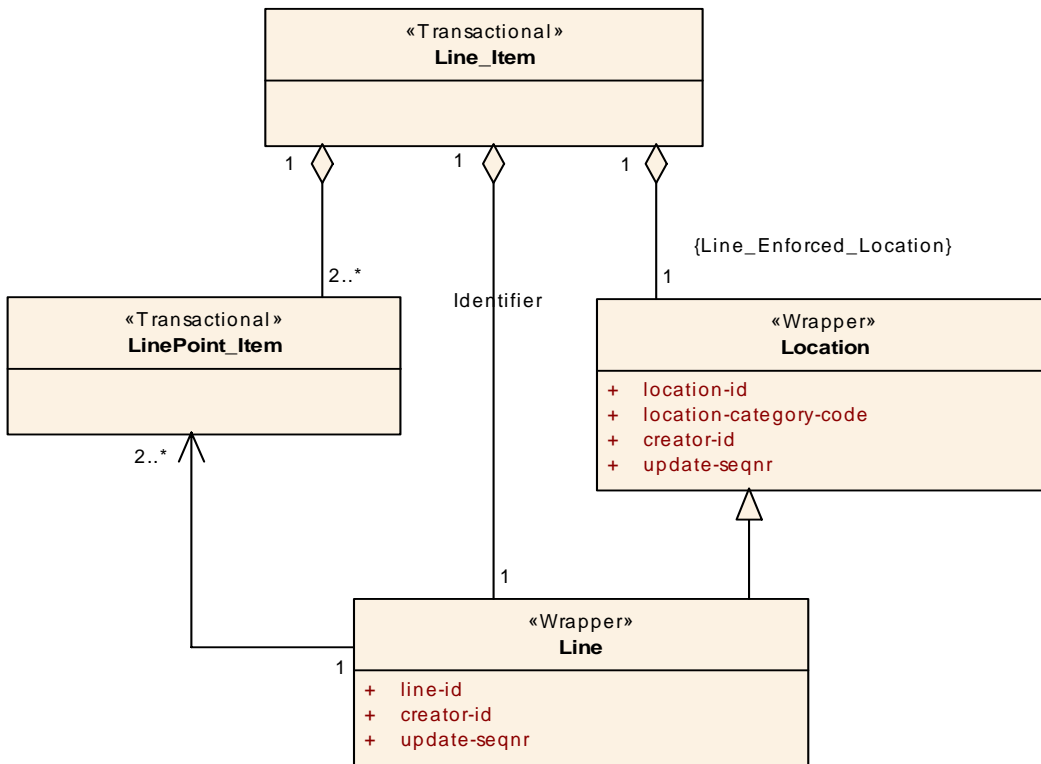


Figure 10.109 - Line_Item

10.8.11 Location_Composite

The Location_Composite Transactional Artifact captures information about locations with regard to the specification of the geometry that is required to describe operational objects. There are four classes of location: Point, Line, Surface, and Geometric Volume, which are encapsulated in the four Transactional Artifacts (Point_Item, Line_Item, Surface_Item and Geometric_Volume_Item) that are enclosed in this transactional.

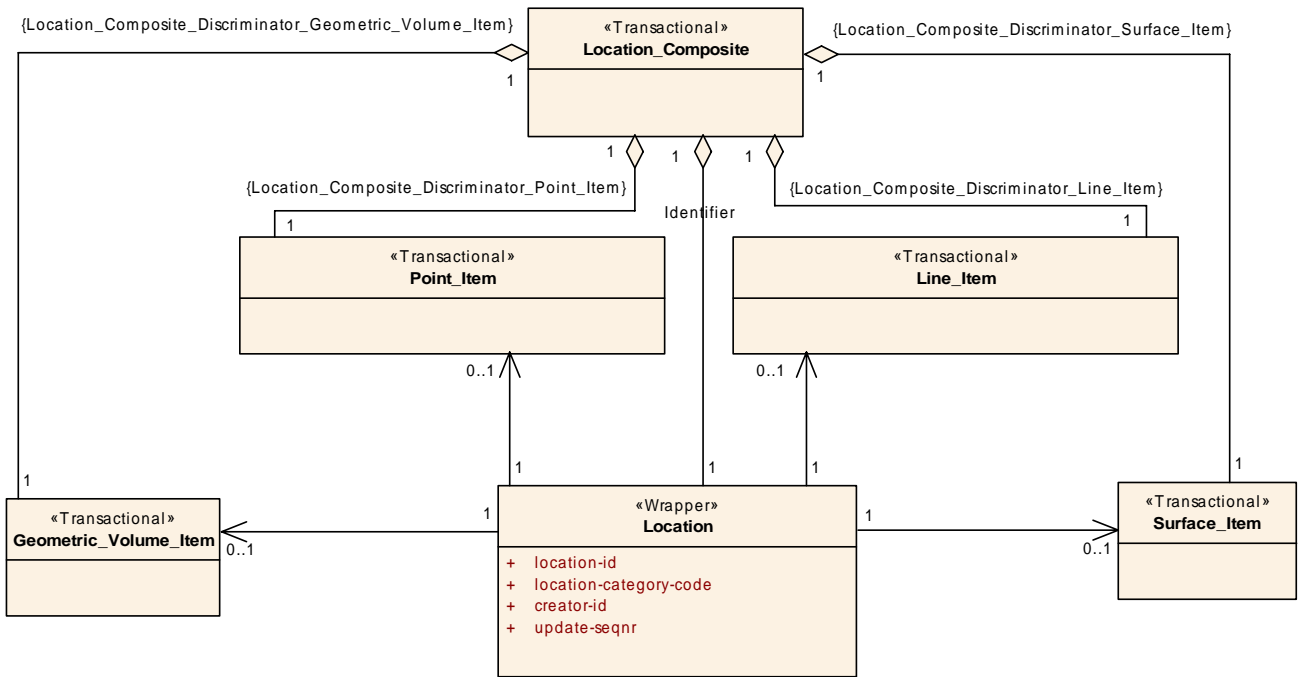


Figure 10.110 - Location Composite

10.8.12 OrbitArea_Surface

The OrbitArea_Surface Transactional Artifact captures information about a specific surface that is (a) an open rectangular section defined by its width and the distance between the two specific points, and (b) closed by two half-circles with radii equal to half the width, and is positioned left, right or centered with respect to the line formed by the two defining points. It is a support transactional used in the Surface_Item Transactional Artifact.

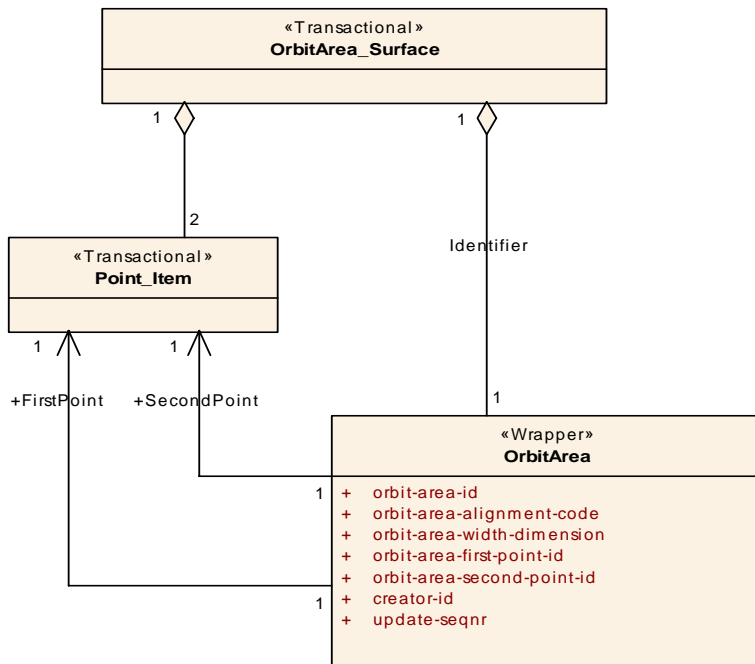


Figure 10.111 - OrbitArea_Surface

10.8.13 Point_Item

The Point_Item Transactional Artifact captures information about a specific location that is defined by a zero-dimensional point. The specification of a Point is either with respect to a frame of reference that is a geodetic system (the model uses the World Geodetic System, 1984) or with respect to another Point. In the first case, the Point is termed an Absolute Point and in the second a relative point. Separate Transactional Artifacts have been defined for both of these cases, and appear on this transactional as support transactionals.

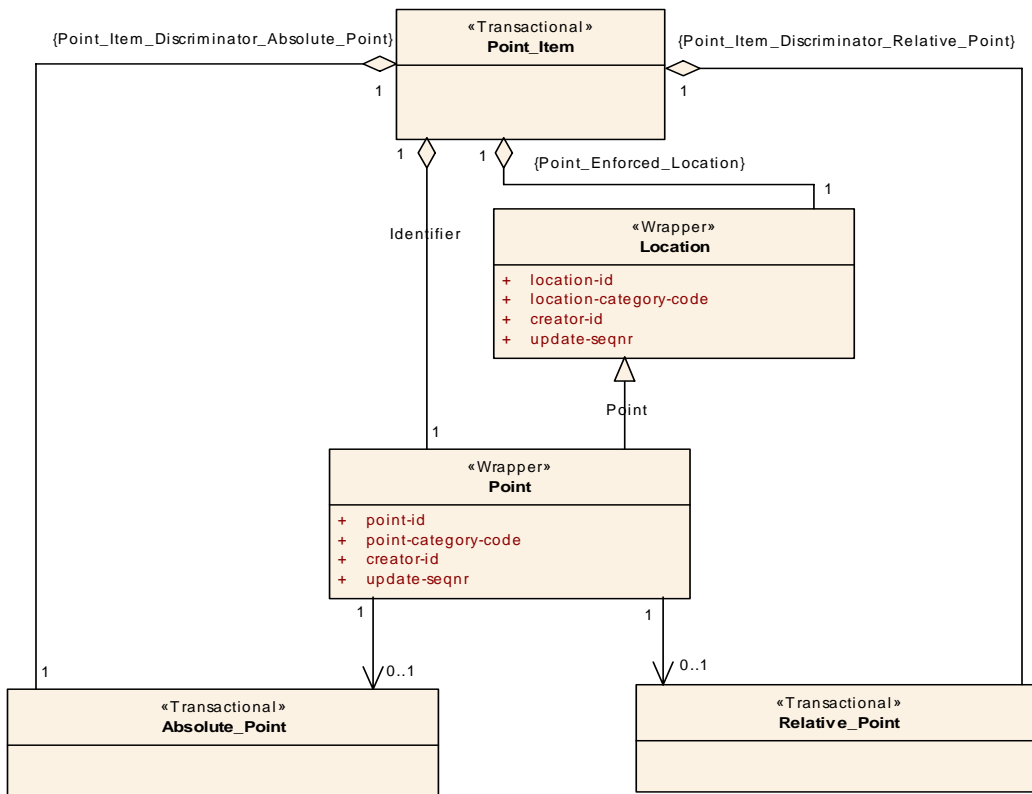


Figure 10.112 - Point_Item

10.8.14 Point_Reference

The Point_Reference Transactional Artifact captures information about a specific local frame of reference or Relative Coordinate System specified with respect to the location of three specific Points. A Point Reference is one of two ways (the other is an Object Reference) that a Relative Coordinate System can be defined. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the status report is captured.

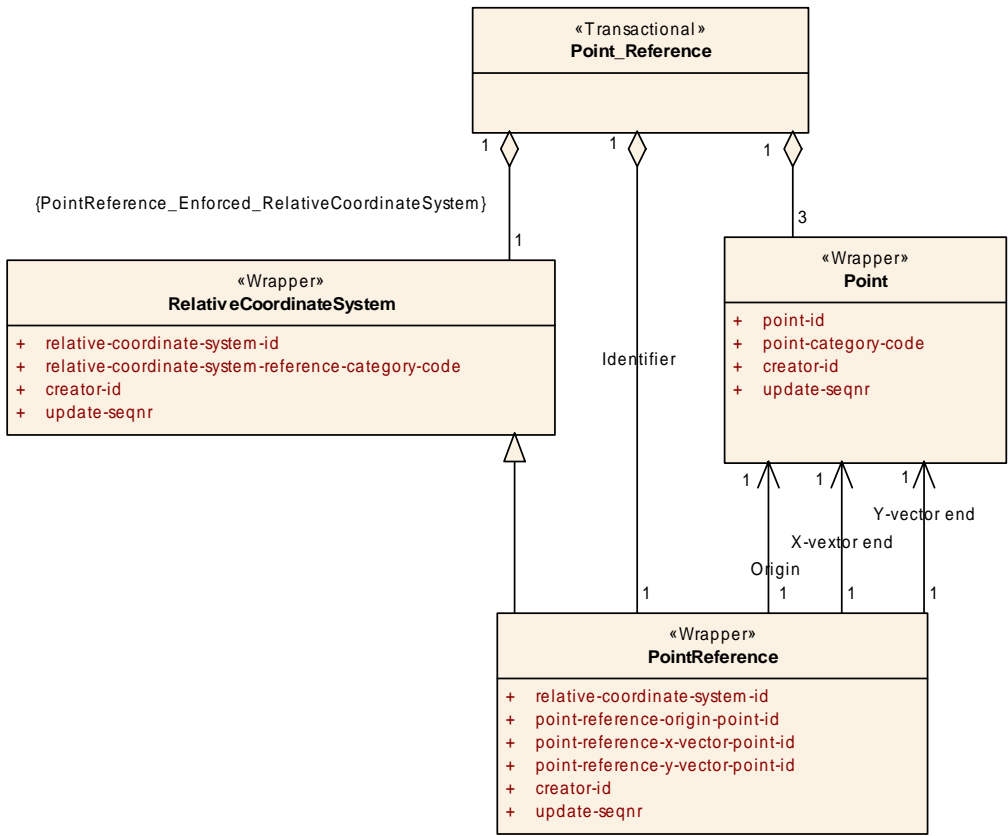


Figure 10.113 - Point_Reference

10.8.15 PolyarcArea_Surface

The PolyarcArea_Surface Transactional Artifact captures information about a specific planar surface that has its boundaries defined by a circular arc and a polygonal segment defined by a specific line whose beginning coincides with the initial point of the arc and whose end coincides with the last point of the arc. It is a support transactional used in the Surface_Item Transactional Artifact.

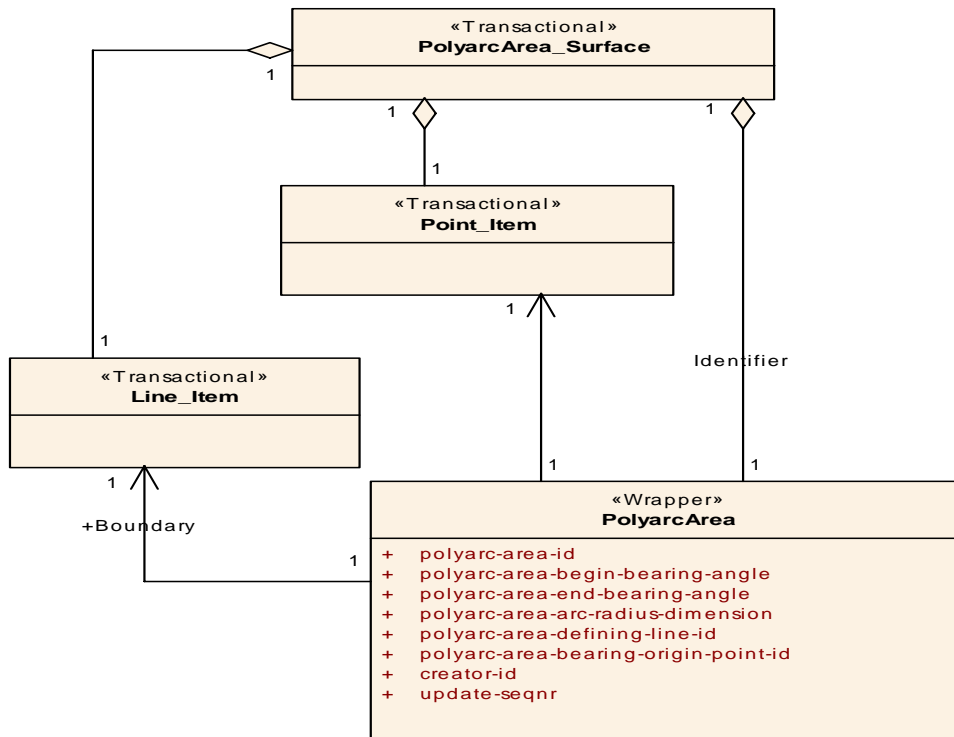


Figure 10.114 - PolyarcArea_Surface

10.8.16 PolygonArea_Surface

The PolygonArea_Surface Transactional Artifact captures information about a specific planar surface that has its boundaries defined by a specific line forming a closed polygonal path. It is a support transactional used in the Surface_Item Transactional Artifact.

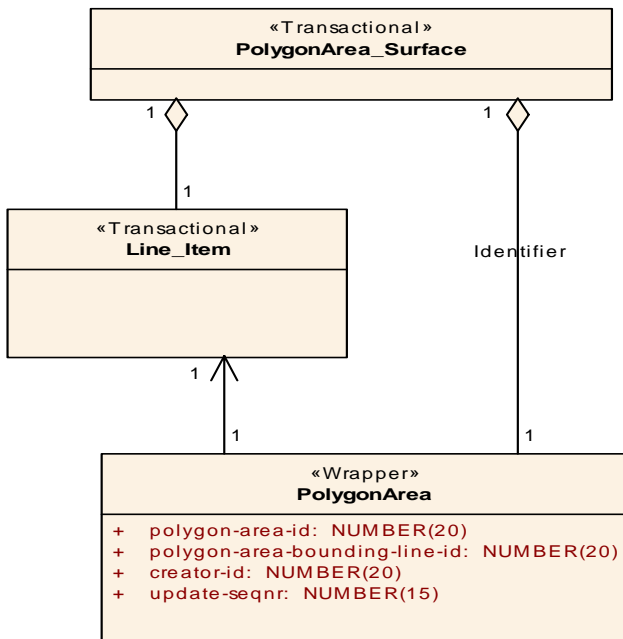


Figure 10.115 - PolygonArea_Surface

10.8.17 Relative_Coordinate_System

The Relative_Coordinate_System Transactional Artifact captures information about a rectangular frame of reference defined by an origin and an x and y axis in the horizontal plane and a z-axis. A relative coordinate system enables the use of a local frame of reference, and may be specified with respect to an arbitrary point, or with respect to the location of an object.

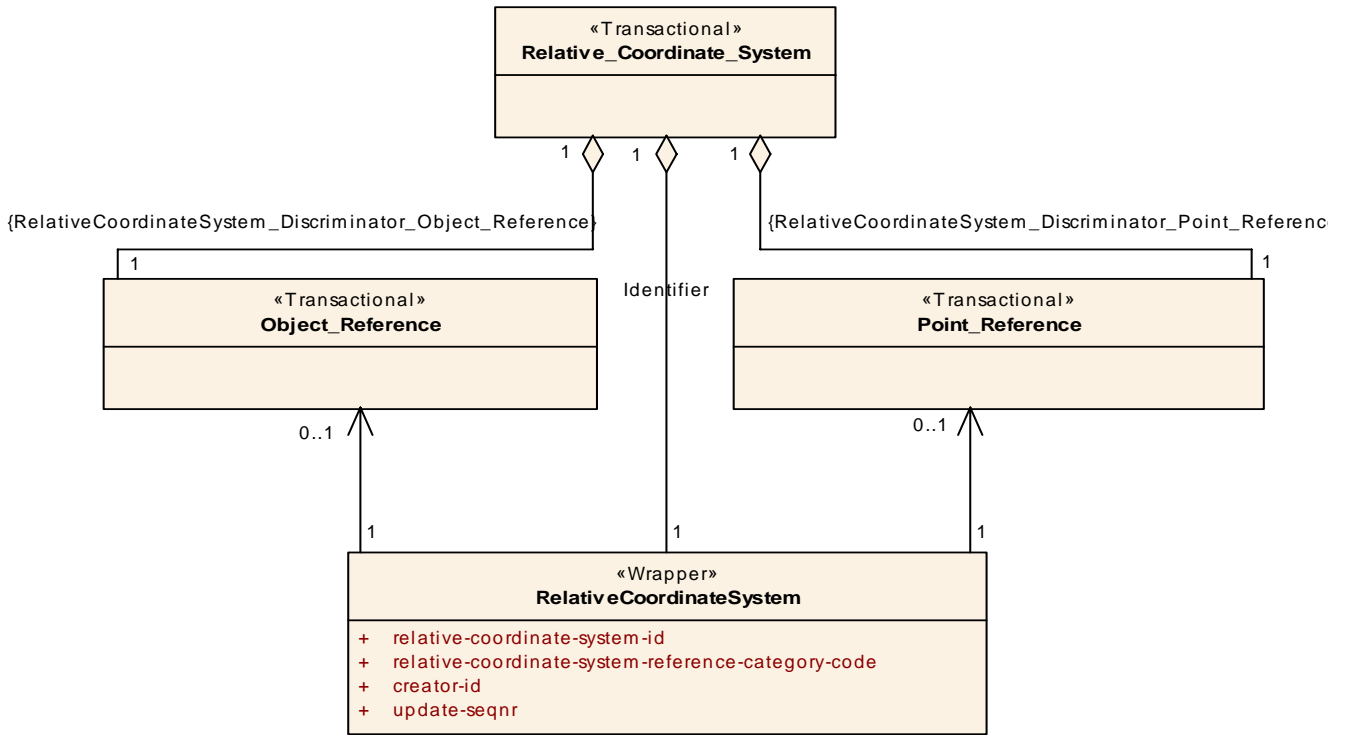


Figure 10.116 - Relative_Coordinate_System

10.8.18 Relative_Point

The Relative_Point Transactional Artifact captures information about a Point whose position is specified with respect to a relative coordinate system. This permits a specification of geometry in relation to a single point on the Earth. Relative geometry can simplify the specification of local geometry through the use of Cartesian offsets from the known point.

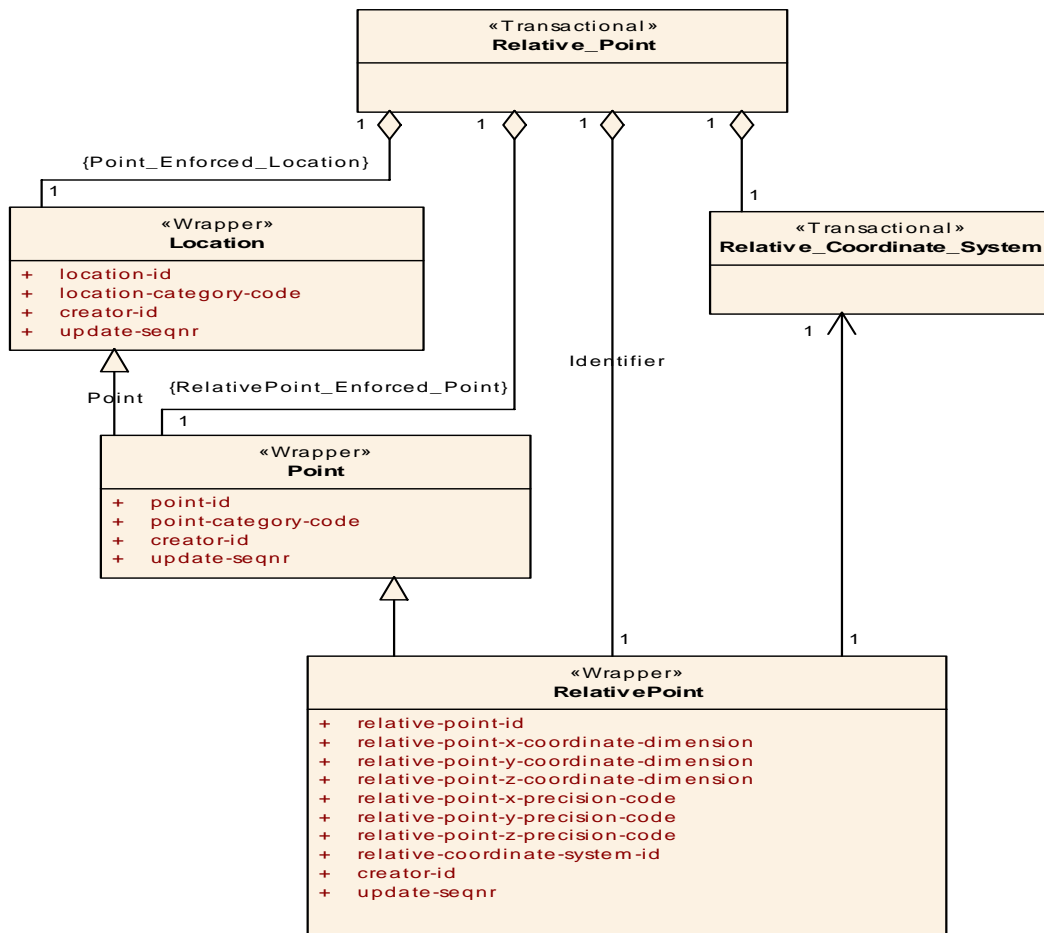


Figure 10.117 - Relative_Point

10.8.19 Sphere_Volume

The Sphere_Volume Transactional Artifact captures information about a geometric-volume that has horizontal boundaries defined by the spherical surface determined by the radius and a specific point.

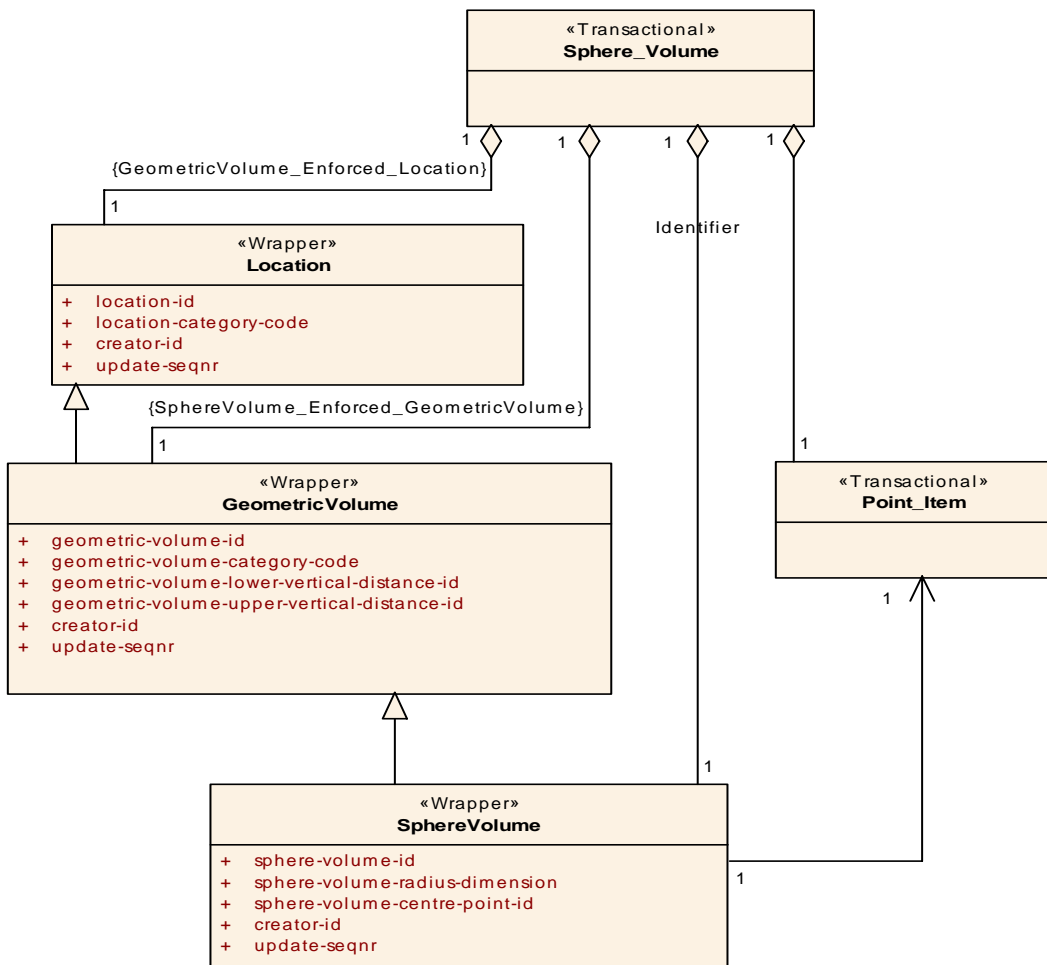


Figure 10.118 - Sphere_Volume

10.8.20 Surface_Item

The Surface_Item Transactional Artifact captures information about any of the seven distinct geometric constructs that are surfaces (two-dimensional locations). Separate Transactional Artifacts have been defined for each of these surface constructs and are enclosed in this transactional as support transactionals. They include the Transactional Artifacts: CorridorArea_Surface, Ellipse_Surface, FanArea_Surface, OrbitArea_Surface, PolyarcArea_Surface, PolygonArea_Surface, and TrackArea_Surface.

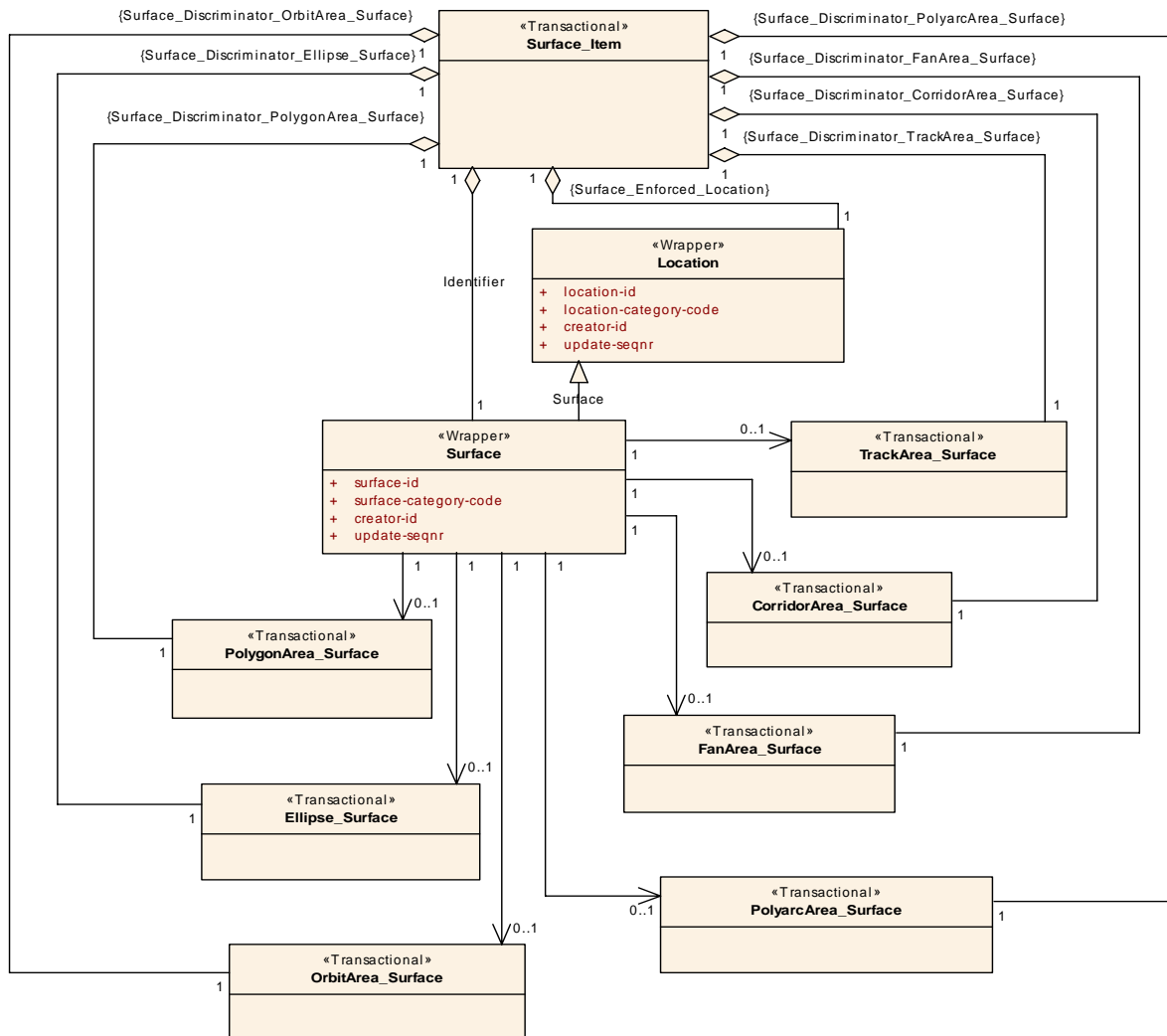


Figure 10.119 - Surface_Item

10.8.21 Surface_Volume

The Surface_Volume Transactional Artifact captures information about a geometric-volume that has horizontal boundaries specified by a specific surface.

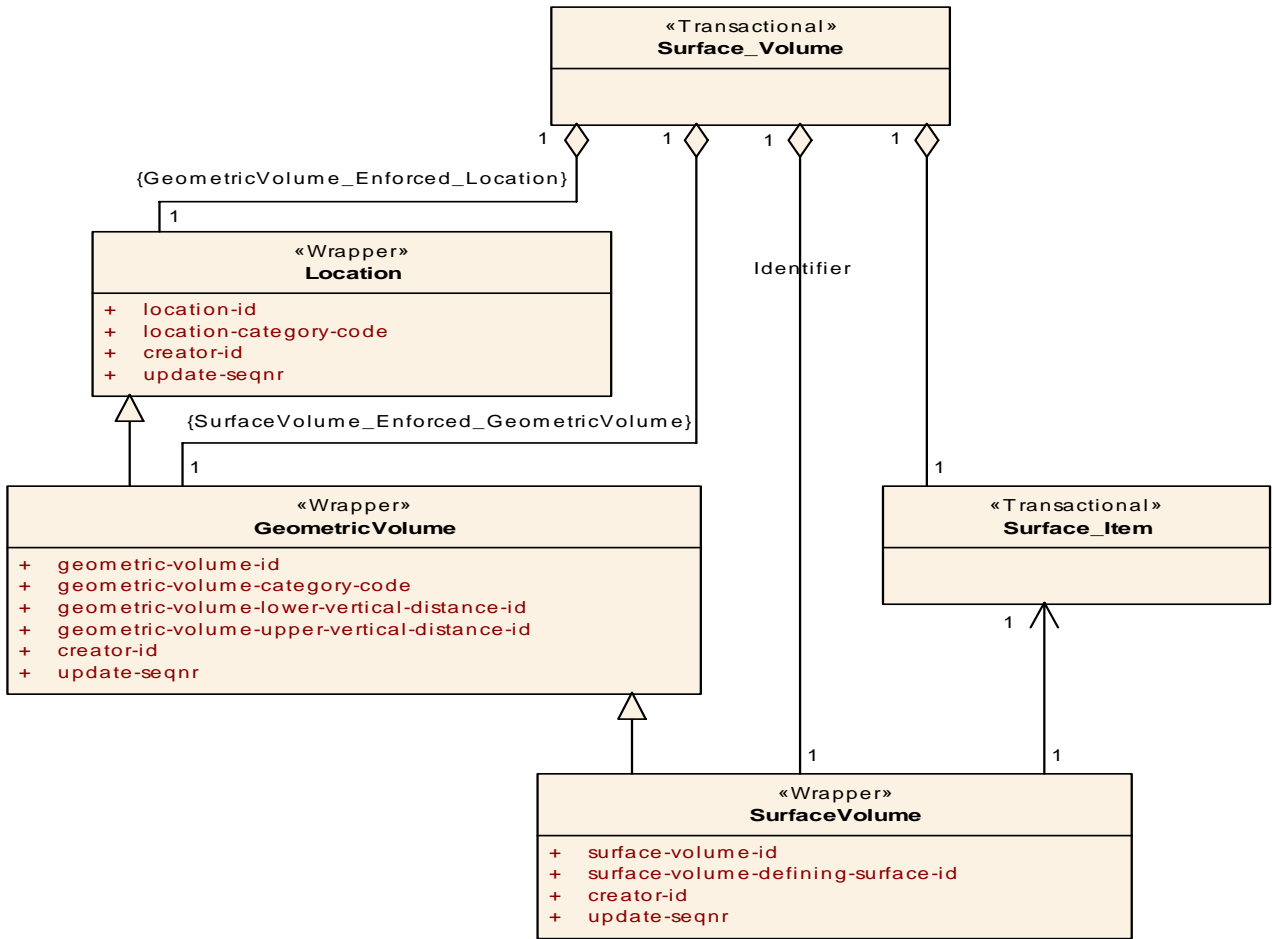


Figure 10.120 - Surface_Volume

10.8.22 TrackArea_Surface

The TrackArea_Surface Transactional Artifact captures information about a specific planar surface that is rectangular with its length defined by two specific Points, and its width by the sum of the widths to the left and right of the line between the two Points. It is a support transactional used in the Surface_Item Transactional Artifact.

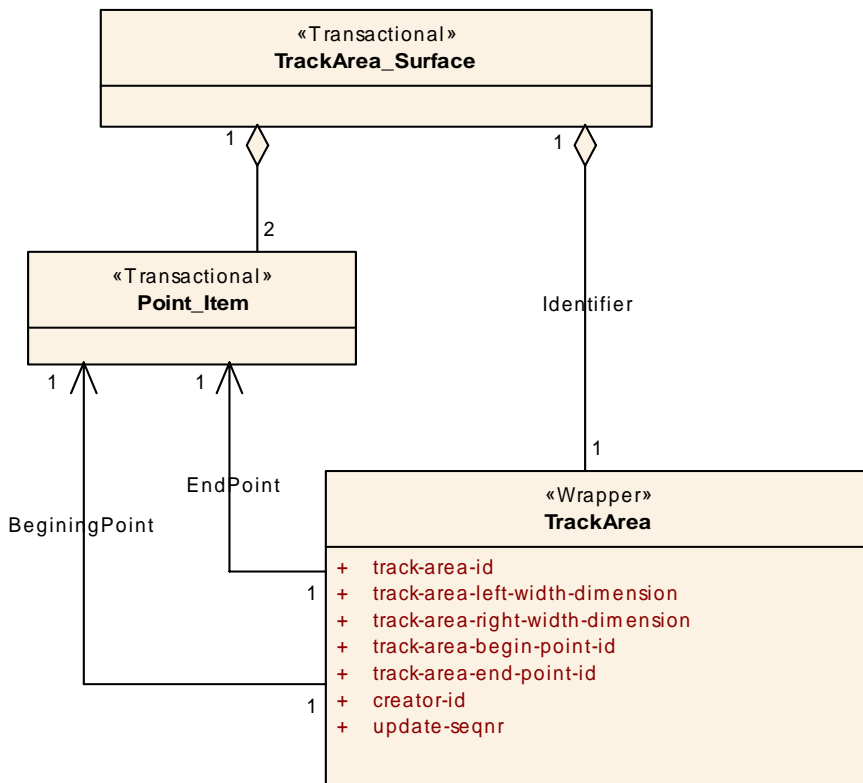


Figure 10.121 - TrackArea_Surface

10.9 Materiel

The Materiel package presents data patterns that define and specify equipment, apparatus or supplies of operational interest, in terms of JC3IEDM information elements.

10.9.1 Consumable_Materiel_Type

The Consumable_Materiel_Type Transactional Artifact captures information about those materiel-types that are expendable classes of supply, such as types of food, water, and shelter, as well as of ammunition or types of chemical materials. The information captured in this transactional relates primarily to the packaging and issue of these consumables, but also includes information about the perishability and hazards posed by the type of materiel.

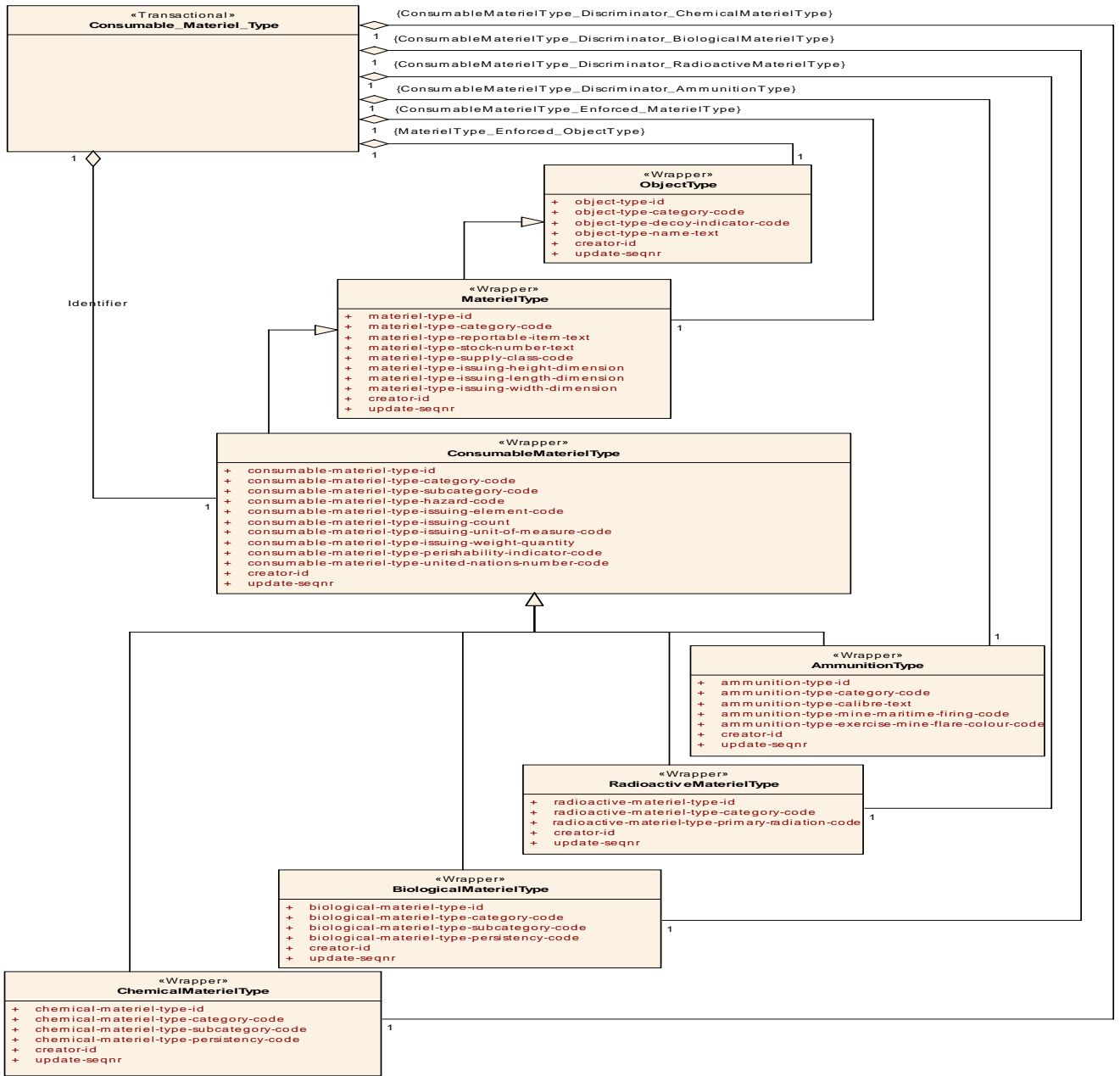


Figure 10.122 - Consumable_Materiel_Type

10.9.2 Equipment_Type

The Equipment_Type Transactional Artifact captures information about a Materiel Type that is not intended for consumption.

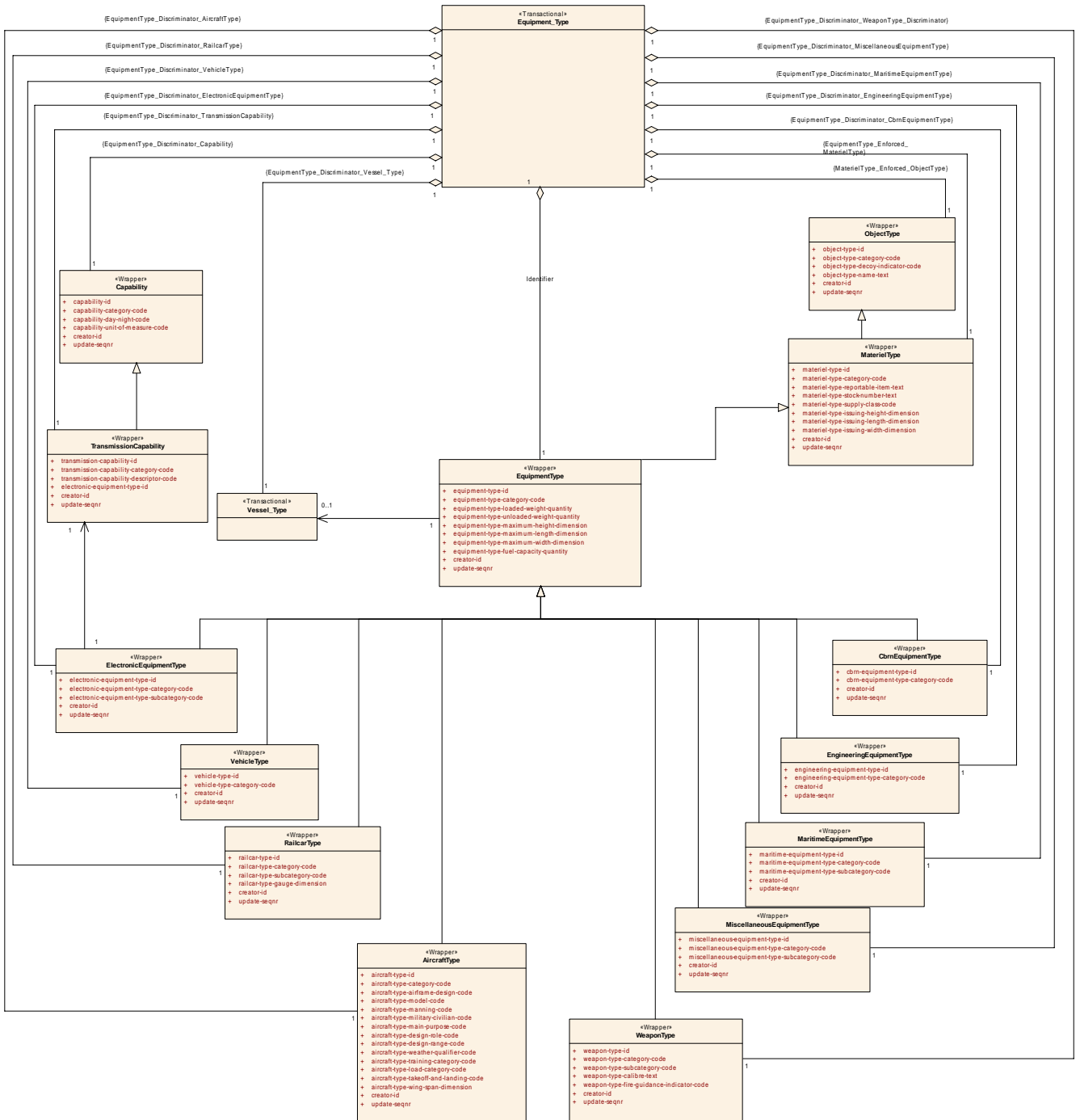


Figure 10.123 - Equipment_Type

10.9.3 Materiel_Item

The Materiel_Item Transactional Artifact captures information about an individually identified instance of equipment, apparatus or supplies of military interest without distinction as to its application for administrative or combat purposes. There is only one subtype of material, an Instrument Landing System.

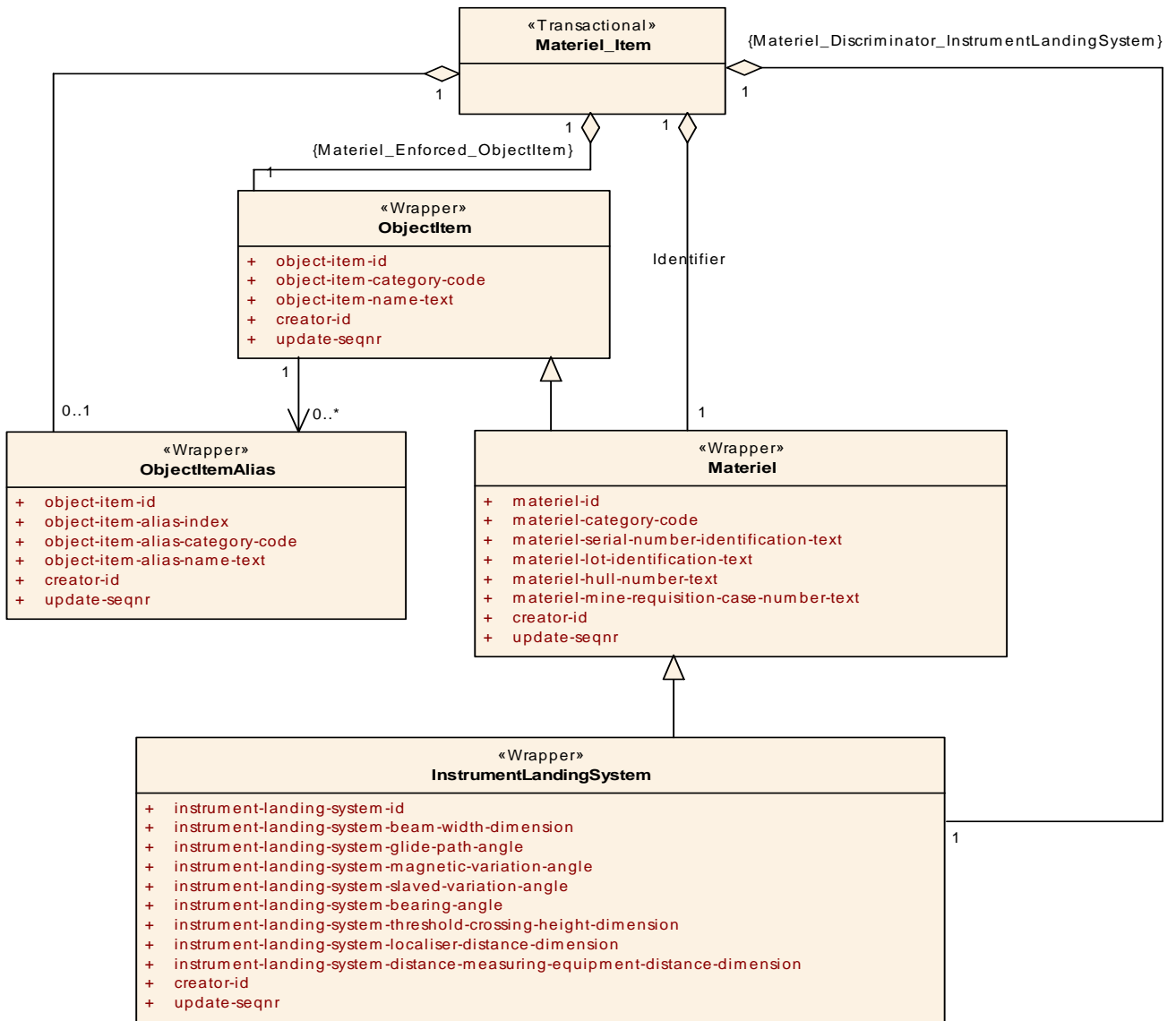


Figure 10.124 - Materiel_Item

10.9.4 Materiel_Item_Type

The Material_Item_Type Transactional Artifact captures information about the perceived classification of a specific material-item as a specific material-type. This transactional encloses the Absolute_Reporting_Data Transactional Artifact in which information about the type classification is captured.

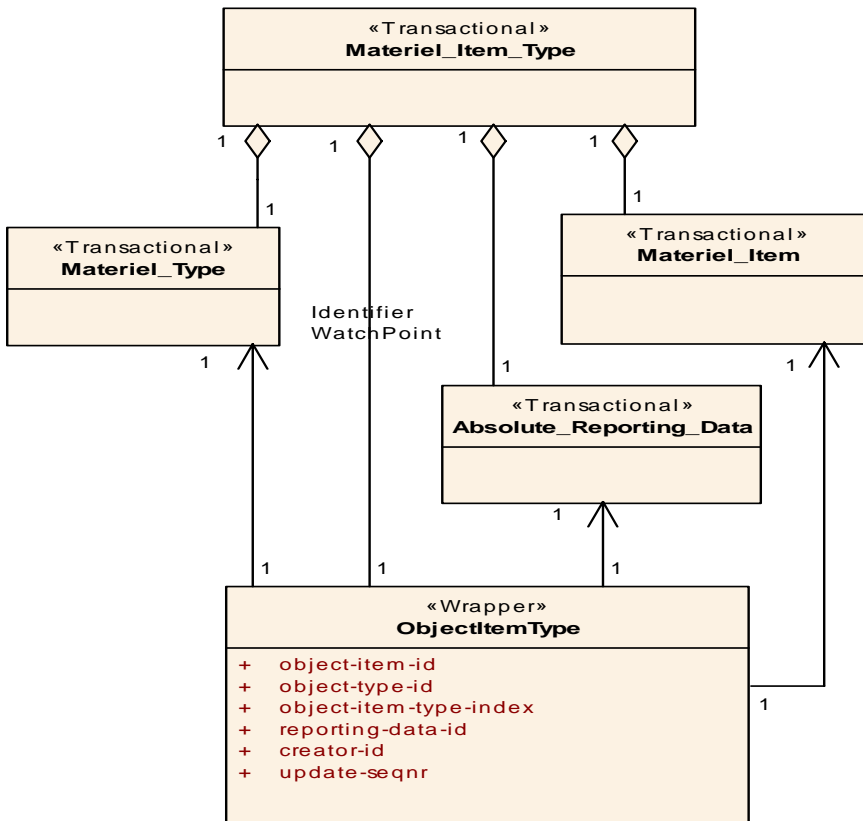


Figure 10.125 - Materiel_Item_Type

10.9.5 Materiel_Position

The Material_Position Transactional Artifact captures information about the association of a material to a location so that the geographic position of the material can be specified. This transactional encloses the Location_Composite Transactional Artifact to support the specification of the location in geometrical terms. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the location association is captured.

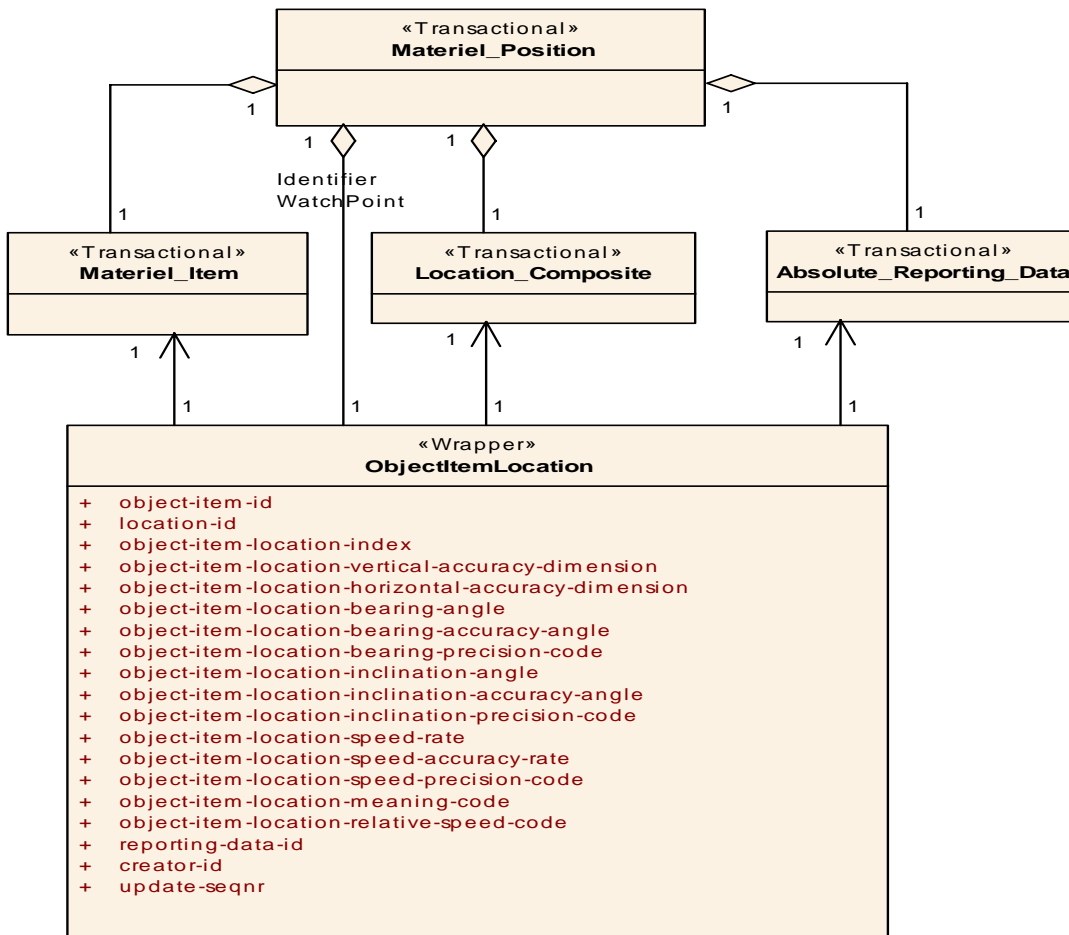


Figure 10.126 - Materiel_Position

10.9.6 Materiel_Status

The Materiel_Status Transactional Artifact captures information about the condition or status of a specific Material. The status information captured pertains primarily to the operational status and usage of the material, although it also conveys the status of its appearance in terms of colour and markings. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the status report is captured.

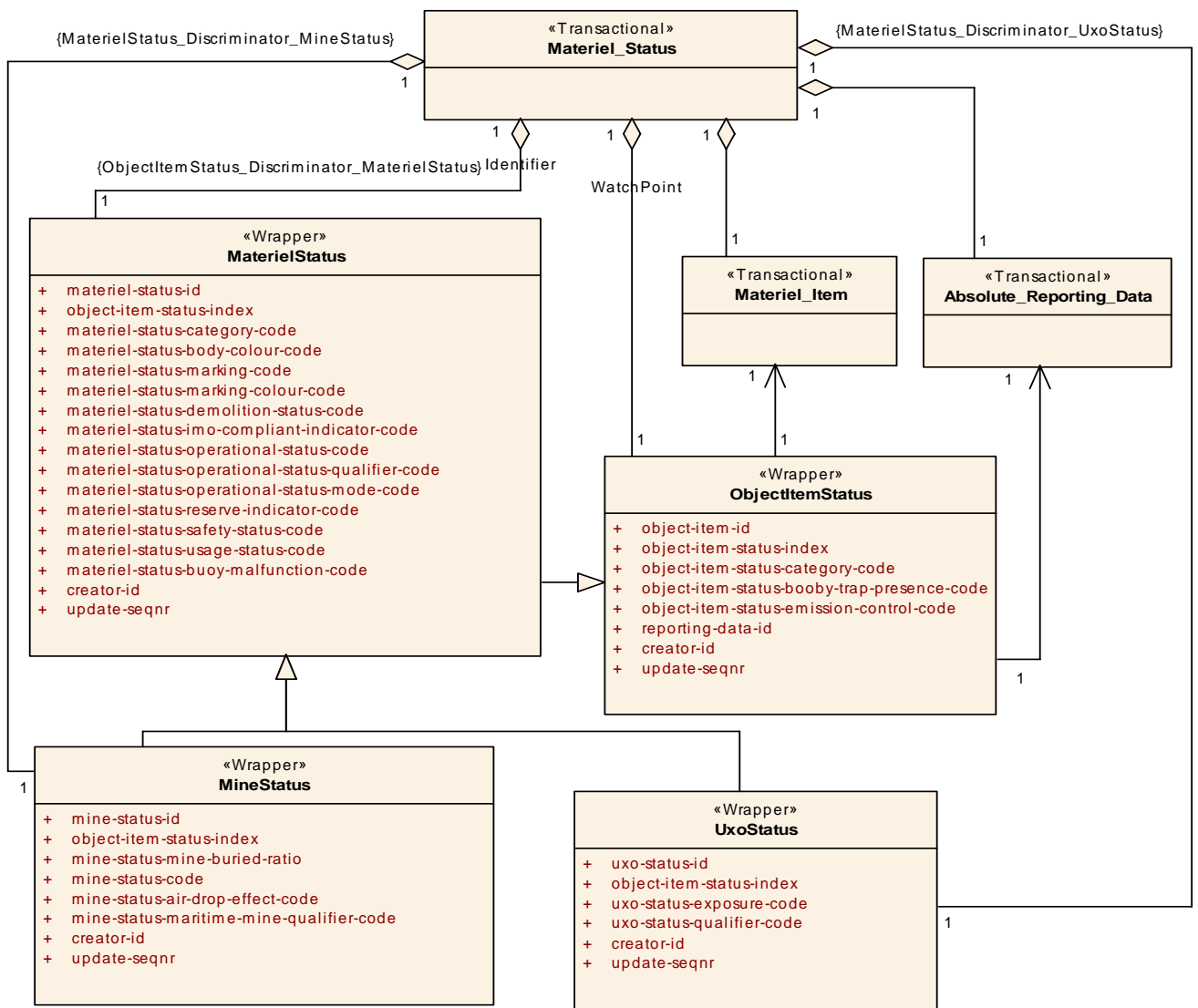


Figure 10.127 - Materiel_Status

10.9.7 Materiel_Type

The Material_Type Transactional Artifact captures information about a specific type of Material that is equipment, apparatus or supplies of operational interest without distinction as to its application for administrative or functional purposes. There are many types of Material, and three broad hierarchies of these types have been used to capture the additional information characteristics. Each of these hierarchies: Material Type itself, Equipment Type, and Consumable Material Type are themselves expressed as Transactional Artifacts.

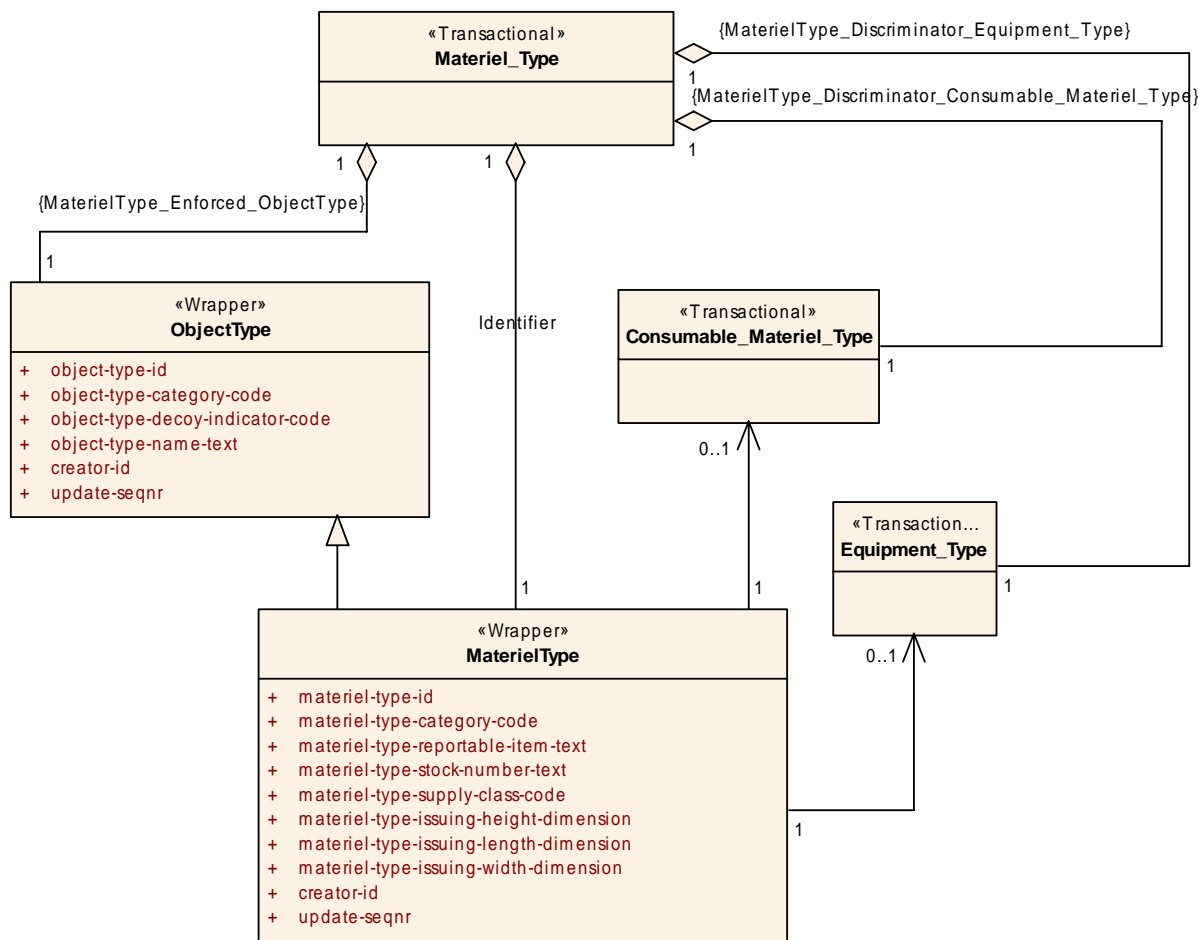


Figure 10.128 - Materiel_Type

10.9.8 Principal_Equipment_Type

The Principal_Equipment_Type Transactional Artifact captures the minimum acceptable equipment type information which is predominately associated with a specific type of Unit.

Principal_Equipment_Type is a support transactional of Transactional Artifact Unit_Type.

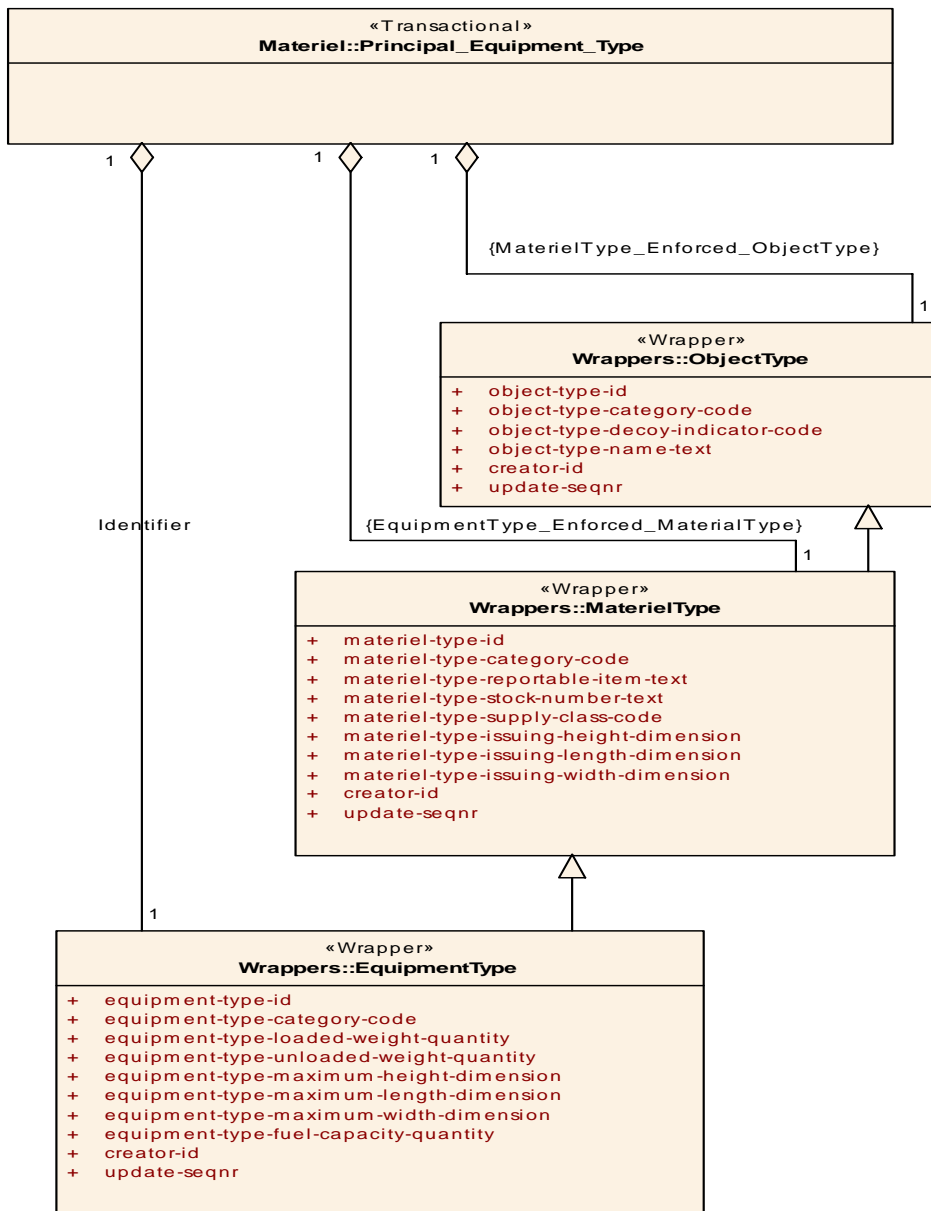


Figure 10.129 - Principal_Equipment_Type

10.9.9 Vessel_Type

The Vessel_Type captures information about a type of material that is designed to operate on or under the water surface.

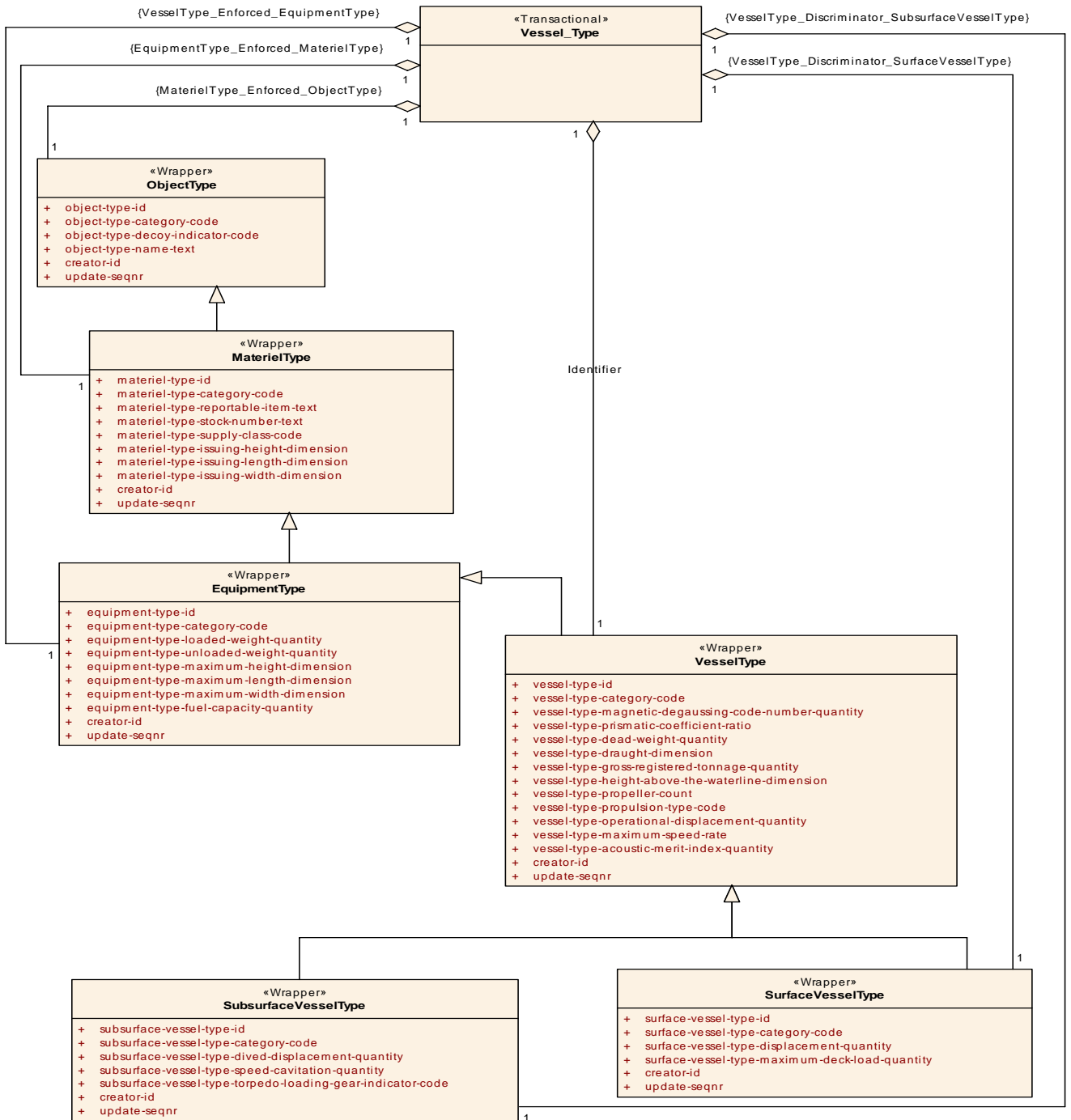


Figure 10.130 - Vessel_Type

10.10 MeteorologicalFeature

The MeteorologicalFeature package presents data patterns that describe reported or forecast weather and light conditions in terms of JC3IEDM information elements.

10.10.1 MeteorologicalFeature_Item

The MeteorologicalFeature_Item Transactional Artifact captures information about a specific instance of weather and light conditions at a specific location at a specific time that has been reported or forecast. A number of child transactionals contribute to the assembly of a complete meteorological picture: including Atmosphere, Cloud_Cover, Icing, Precipitation, Wind, Light, and Visibility.

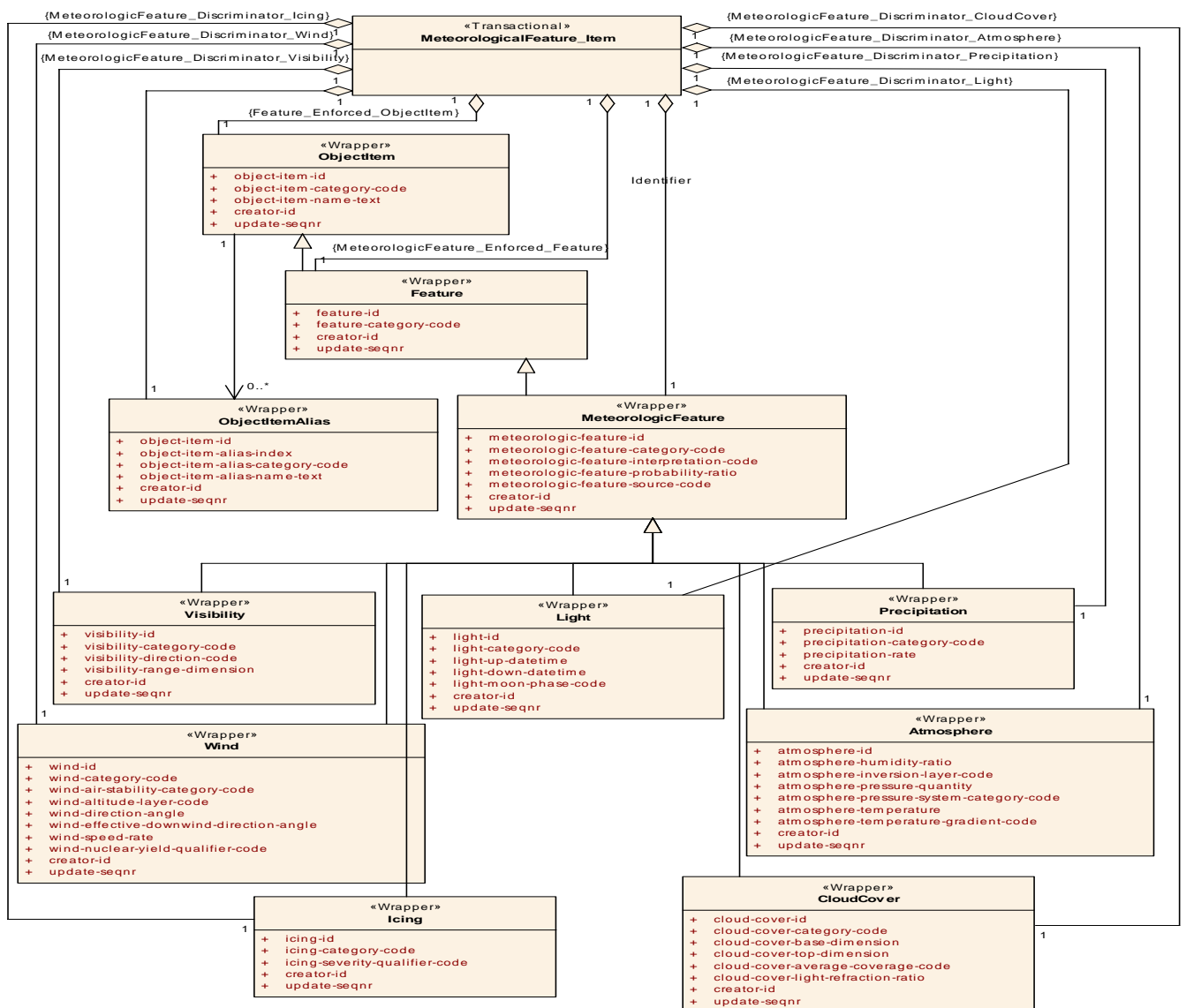


Figure 10.131 - MeteorologicalFeature_Item

10.10.2 MeteorologicalFeature_Position

The MeteorologicalFeature_Position Transactional Artifact captures information about the association of a meteorological-feature to a location so that the geographic position of the meteorological-feature can be specified. This transactional encloses the Location_Composite Transactional Artifact to support the specification of the location in geometrical terms. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the location association is captured.

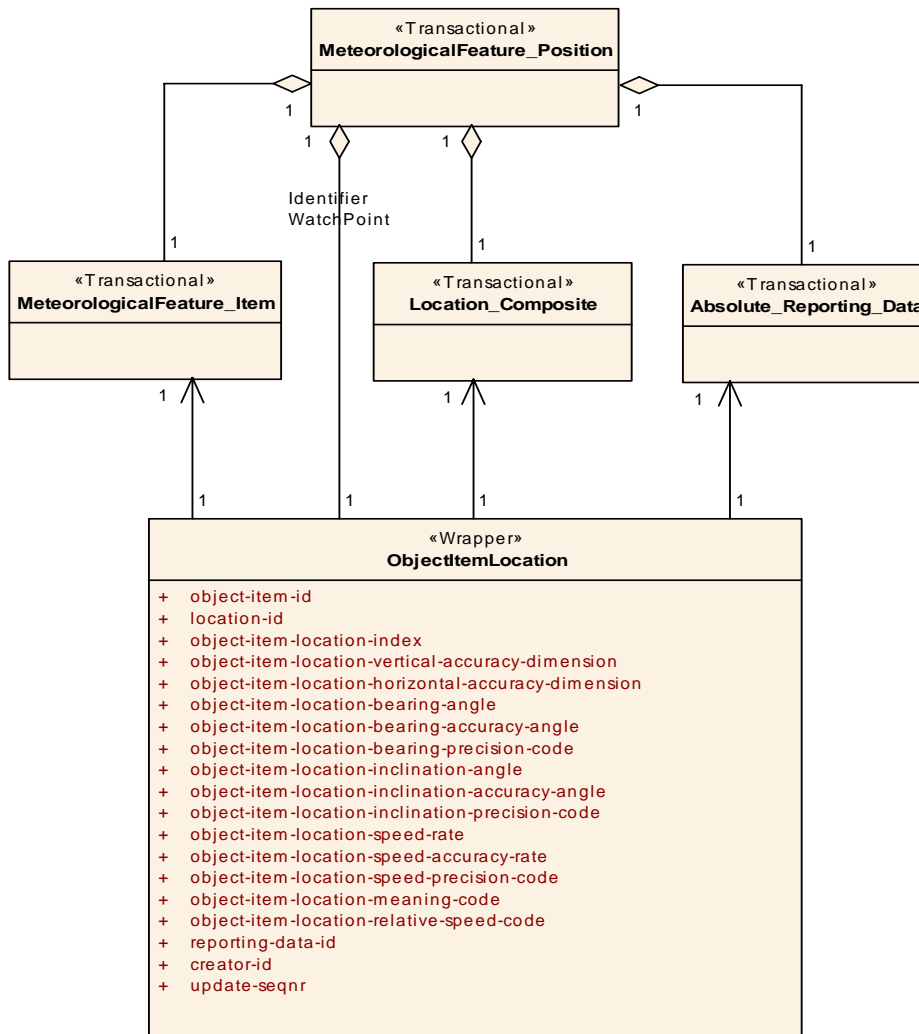


Figure 10.132 - MeteorologicalFeature_Position

10.11 ObjectItem

The ObjectItem package presents data patterns that describe individually identified objects that have military or civilian significance, in terms of JC3IEDM information elements.

10.11.1 Object_Item_Address

The Object_Item_Address Transactional Artifact captures information about the association between an object-item and an address to specify the means by which a Facility, Person or Organization can be accessed. This transactional encloses the Absolute_Reporting_Data Transactional Artifact in which information about the association report is captured.

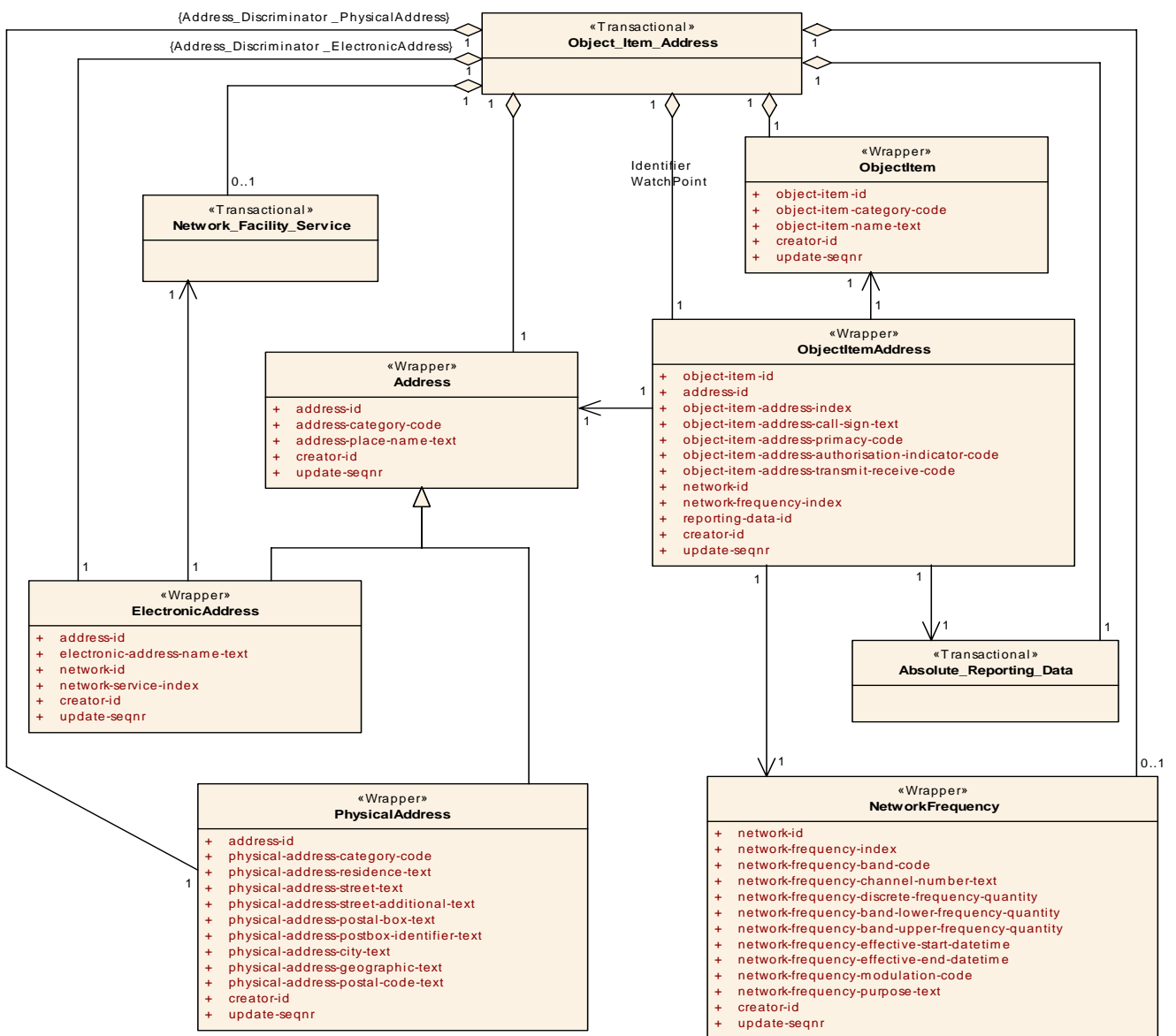


Figure 10.133 - Object_Item_Address

10.11.2 Object_Item_Affiliation

The Object_Item_Affiliation Transactional Artifact captures information about the allegiances or affiliations to which an object-item may ascribe. Four classes of affiliations (geopolitical, religion, ethnic group, and functional group) provide a rationally organized set of values to enable the capture of multiple affiliations. This transactional encloses the Absolute_Reporting_Data Transactional Artifact in which information about the affiliation report is captured.

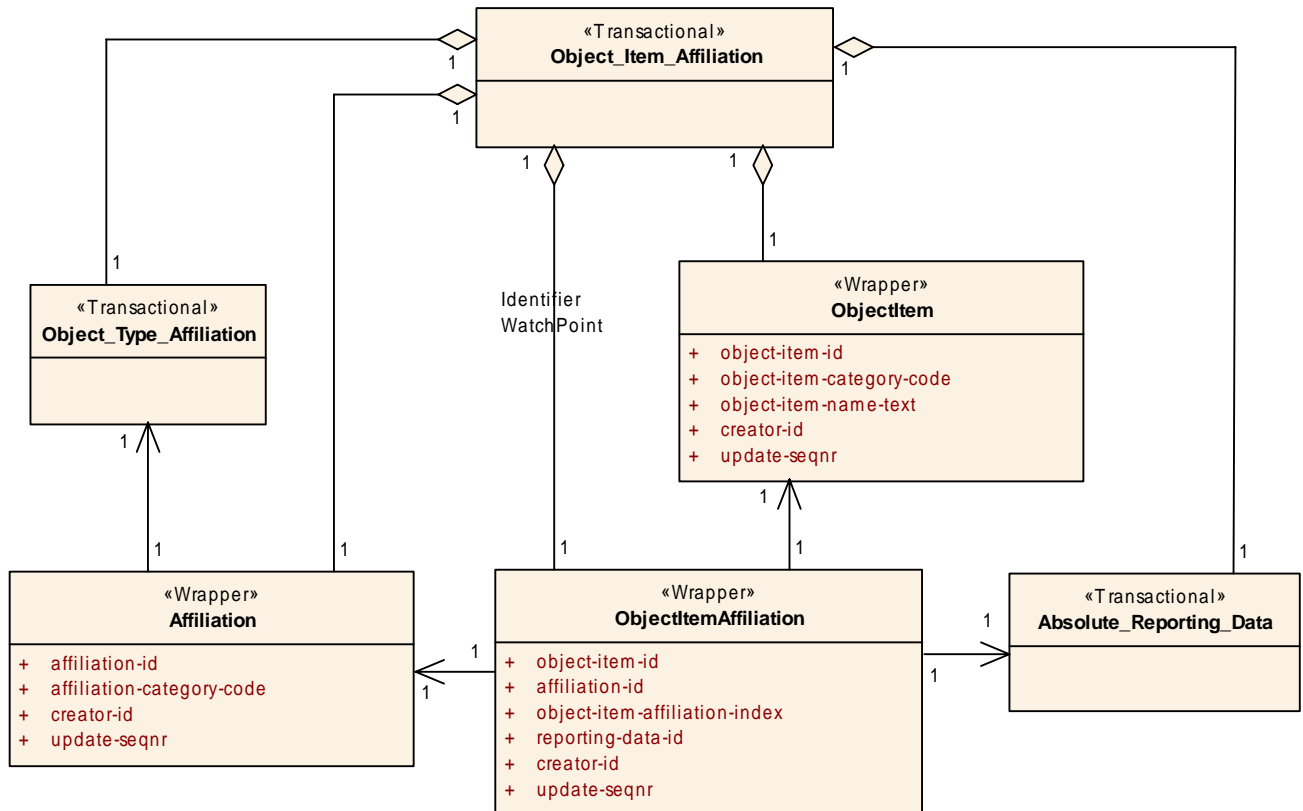


Figure 10.134 - Object_Item_Affiliation

10.11.3 Object_Item_Assoc

The Object_Item_Association Transactional Artifact captures information about the associations between specific pairs of object-items. The ActionTask Wrapper linked to the ObjectItemAssociate captures information about how that association is to be carried out (e.g., the Object_Item_Association states that A “Is supplied by” B and the associated ActionTask describes how the resupply will be conducted).

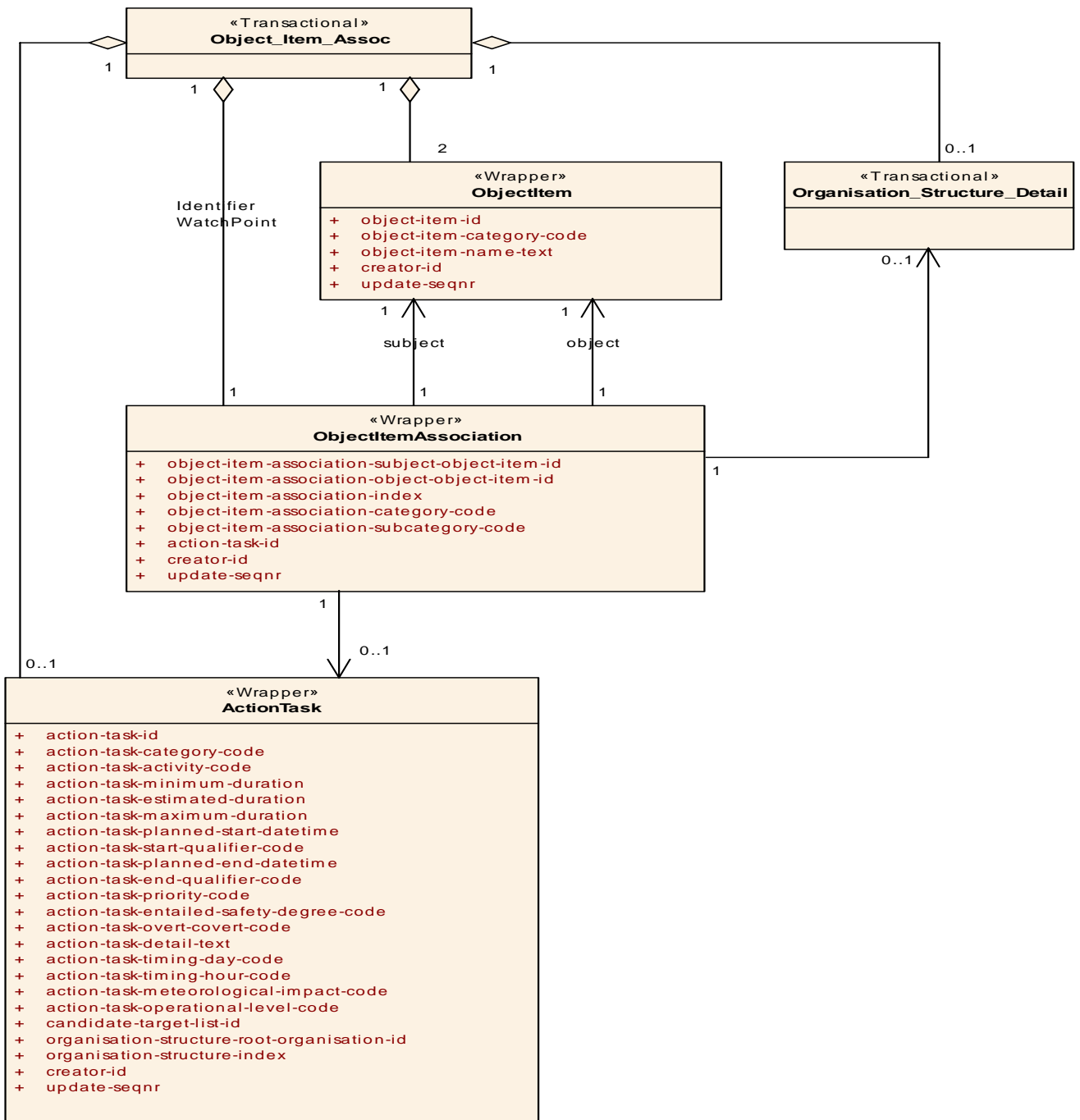


Figure 10.135 - Object_Item_Assoc

10.11.4 Object_Item_Assoc_Status

The Object_Item_Association_Status Transactional Artifact captures information about the status of the associations between specific pairs of object-items. Its primary purpose is to mark the beginning and termination of the association. This transactional encloses the Absolute_Reporting_Data Transactional Artifact in which information about the association status report is captured.

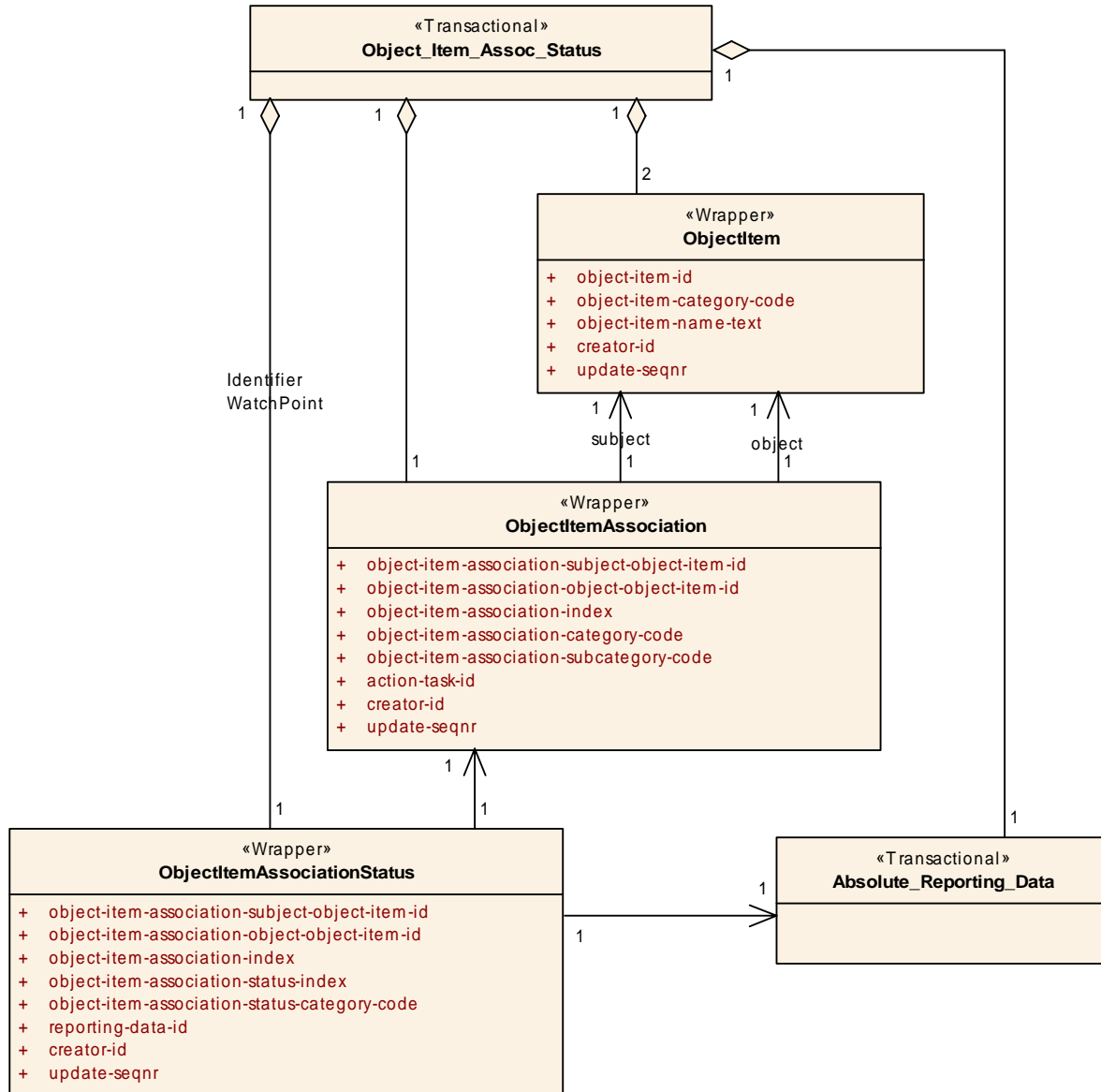


Figure 10.136 - Object_Item_Assoc_Status

10.11.5 Object_Item_Capability

The Object_Item_Capability Transactional Artifact captures information about the perceived capabilities of a specific object-item. This transactional encloses the Capability_Composite Transactional Artifact in which the normal capabilities of the object-types are kept.

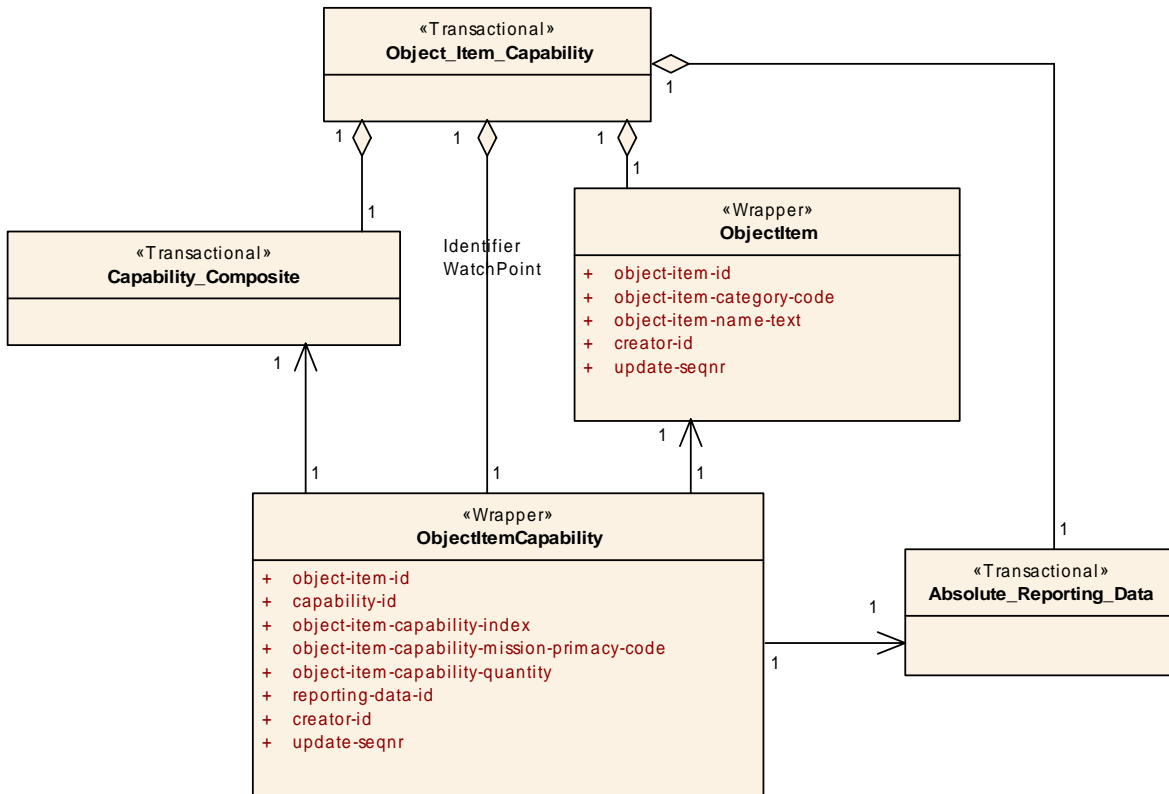


Figure 10.137 - Object_Item_Capability

10.11.6 Object_Item_Group_Account

The Object_Item_Group_Account Transactional Artifact captures information that establishes an accounting for sets of groups that are associated with a specific object-item and may be associated with an Action during a specific time period as report in Absolute_Reporting_Data. This transactional encloses the Object_Item_Group_Account_Detail Transactional Artifact in which the detailed statistics are kept. As an example, an Object_Item_Group_Account can be used to establish an accounting of person types in a shelter (Object-Item) as a result of a natural disaster (Action). The Object_Item_Group_Account_Detail captures the account data regarding people of various types (e.g., male and female either injured or healthy).

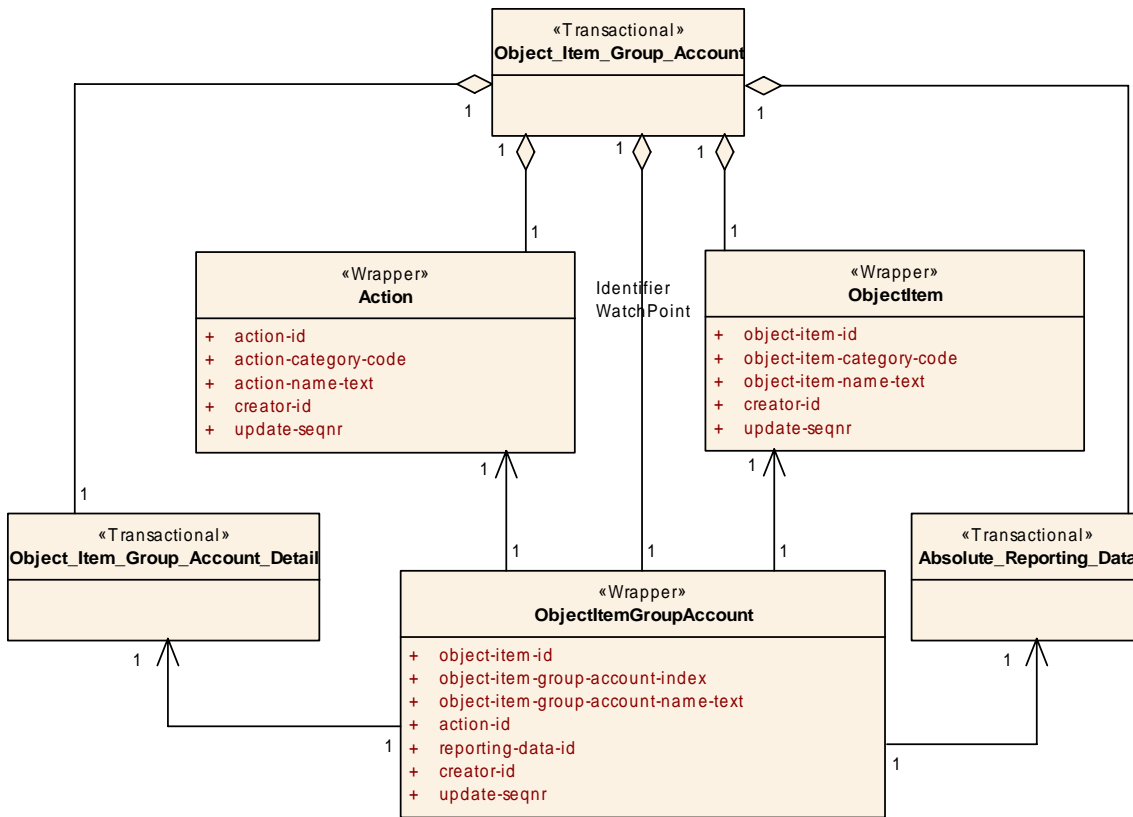


Figure 10.138 - Object_Item_Group_Account

10.11.7 Object_Item_Group_Account_Detail

The Object_Item_Group_Account_Detail Transactional Artifact captures information about the total count and condition of a specific group (person-types) that is included in a specific Object Item Group Account, and categorized by a specific Group Characteristic.

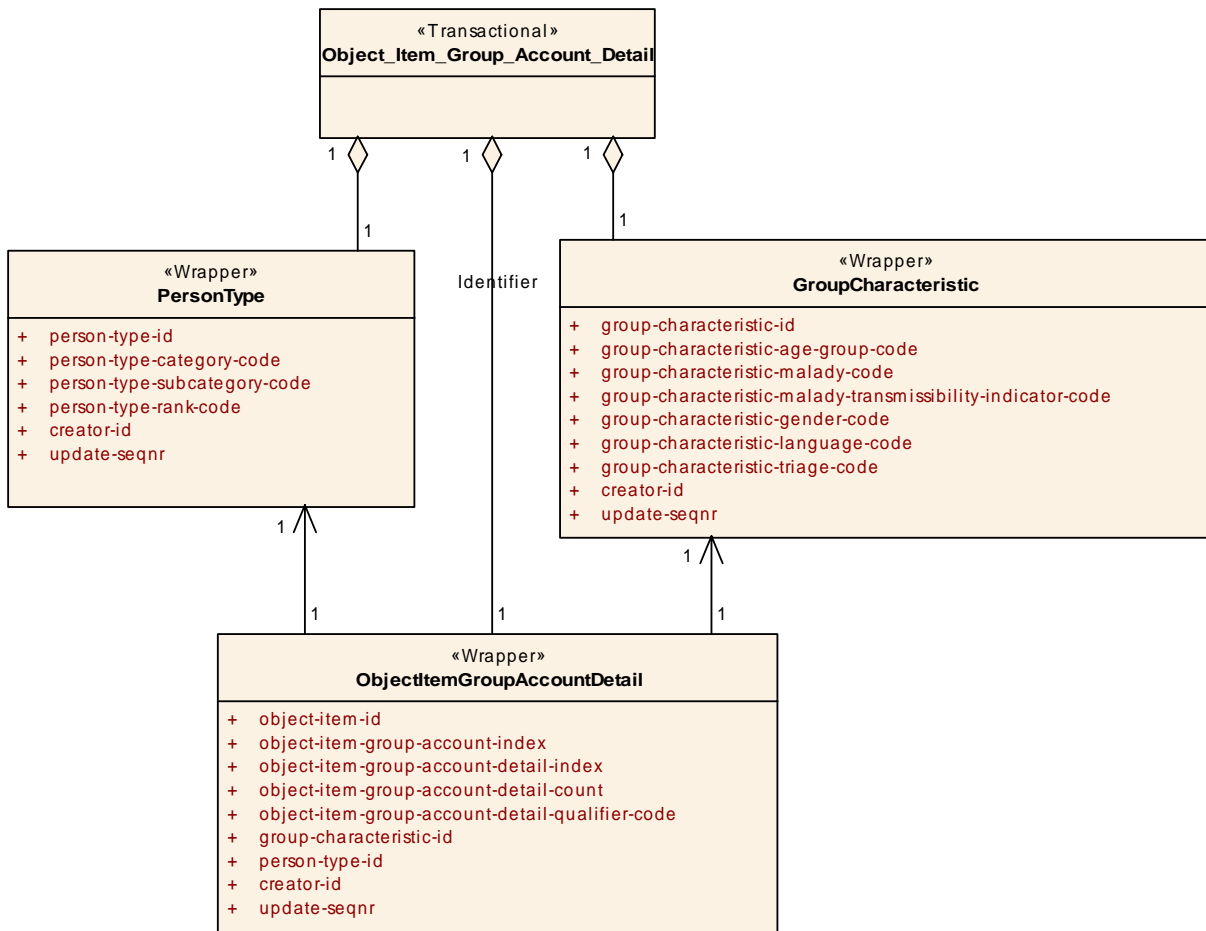


Figure 10.139 - Object_Item_Group_Account_Detail

10.11.8 Object_Item_Hostility_Status

The Object_Item_Hostility_Status Transactional Artifact captures information about the perceived hostility classification of an Object_Item as determined by the classifying / reporting organization. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the status report is captured.

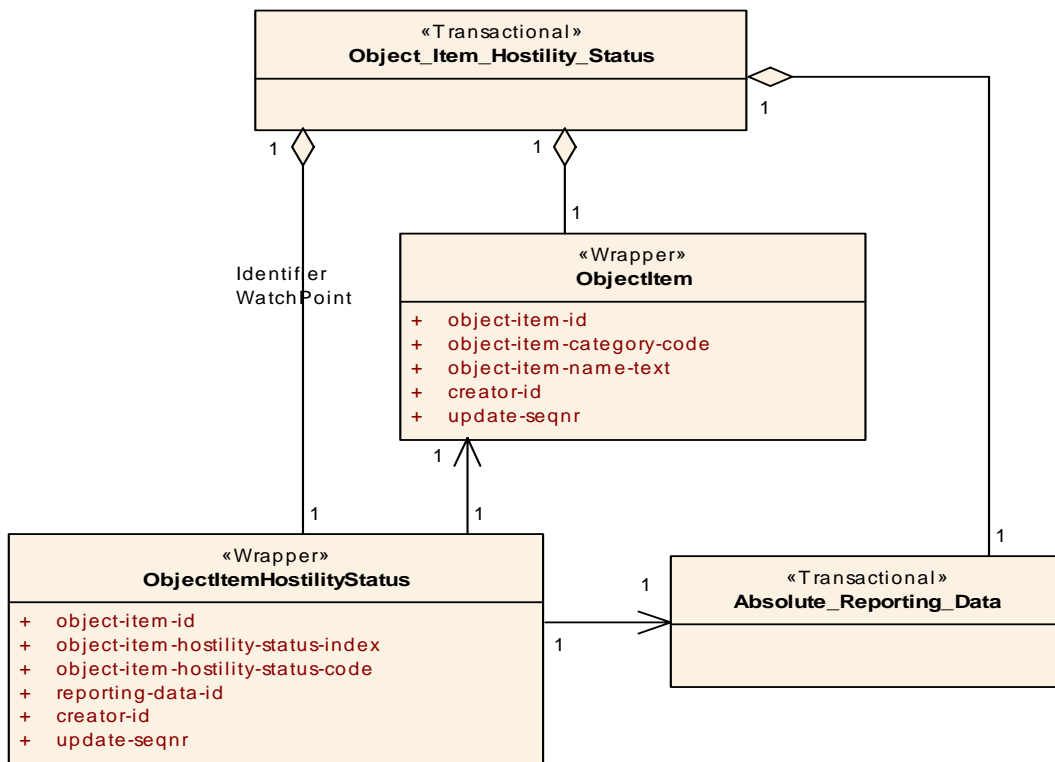


Figure 10.140 - Object_Item_Hostility_Status

10.11.9 Object_Item_Reference_Assoc

The Object_Item_Reference_Association Transactional Artifact captures information about the nature of the relationship between a specific object-item and a specific reference and optionally its security classification.

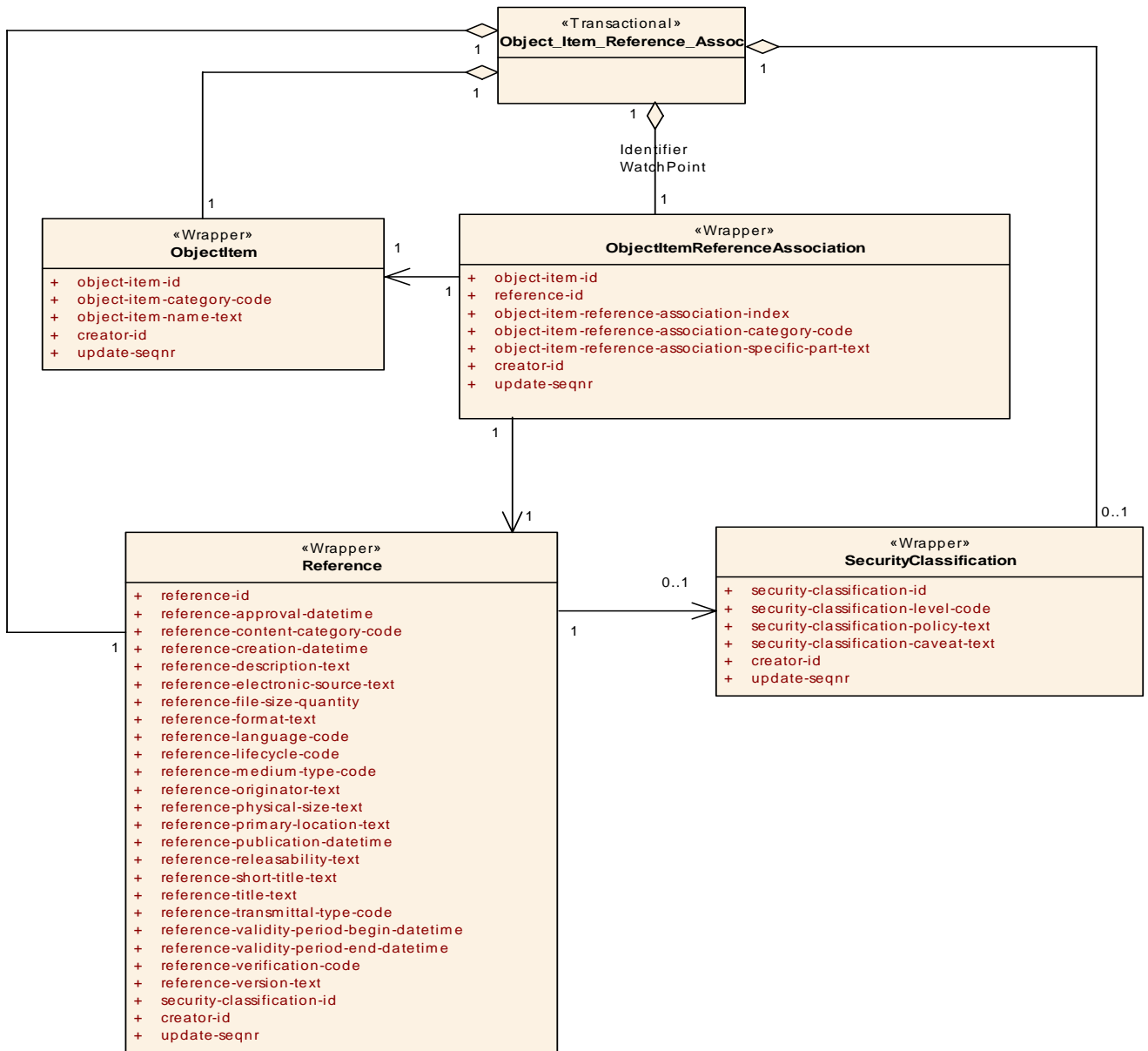


Figure 10.141 - Object_Item_Reference_Assoc

10.11.10 Object_Item_Type

The Object_Item_Type Transactional Artifact captures information about the association of a specific object-item to a specific object_type. This transactional encloses the Absolute_Reporting_Data Transactional Artifact in which information about the association assignment report is captured.

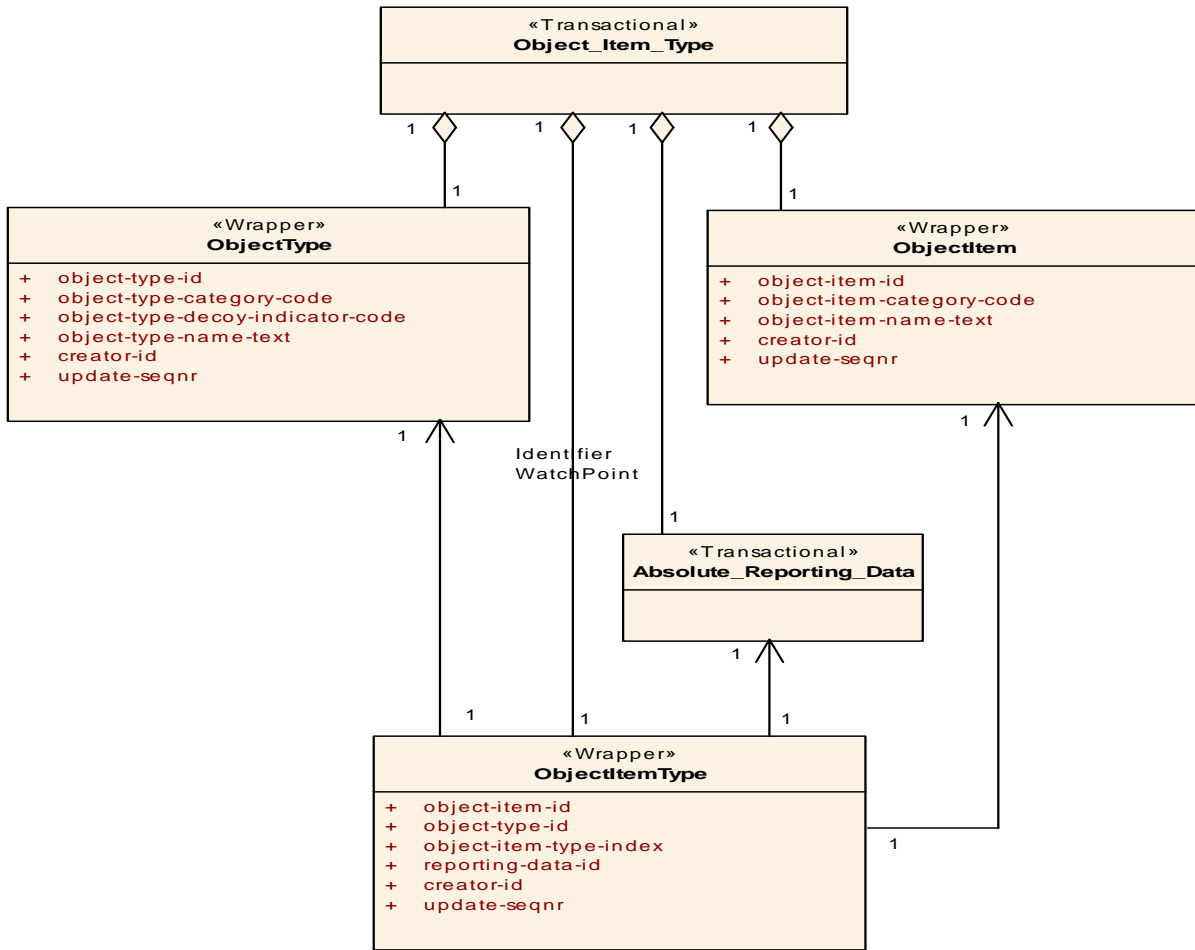


Figure 10.142 - Object_Item_Type

10.11.11 Object_Reference

The Object Reference Transactional Artifact captures information about a specific local frame of reference or Relative Coordinate System specified with respect to the location of a specific object-item. An Object Reference is one of two ways (the other is a Point Reference) that a Relative Coordinate System can be defined. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the status report is captured.

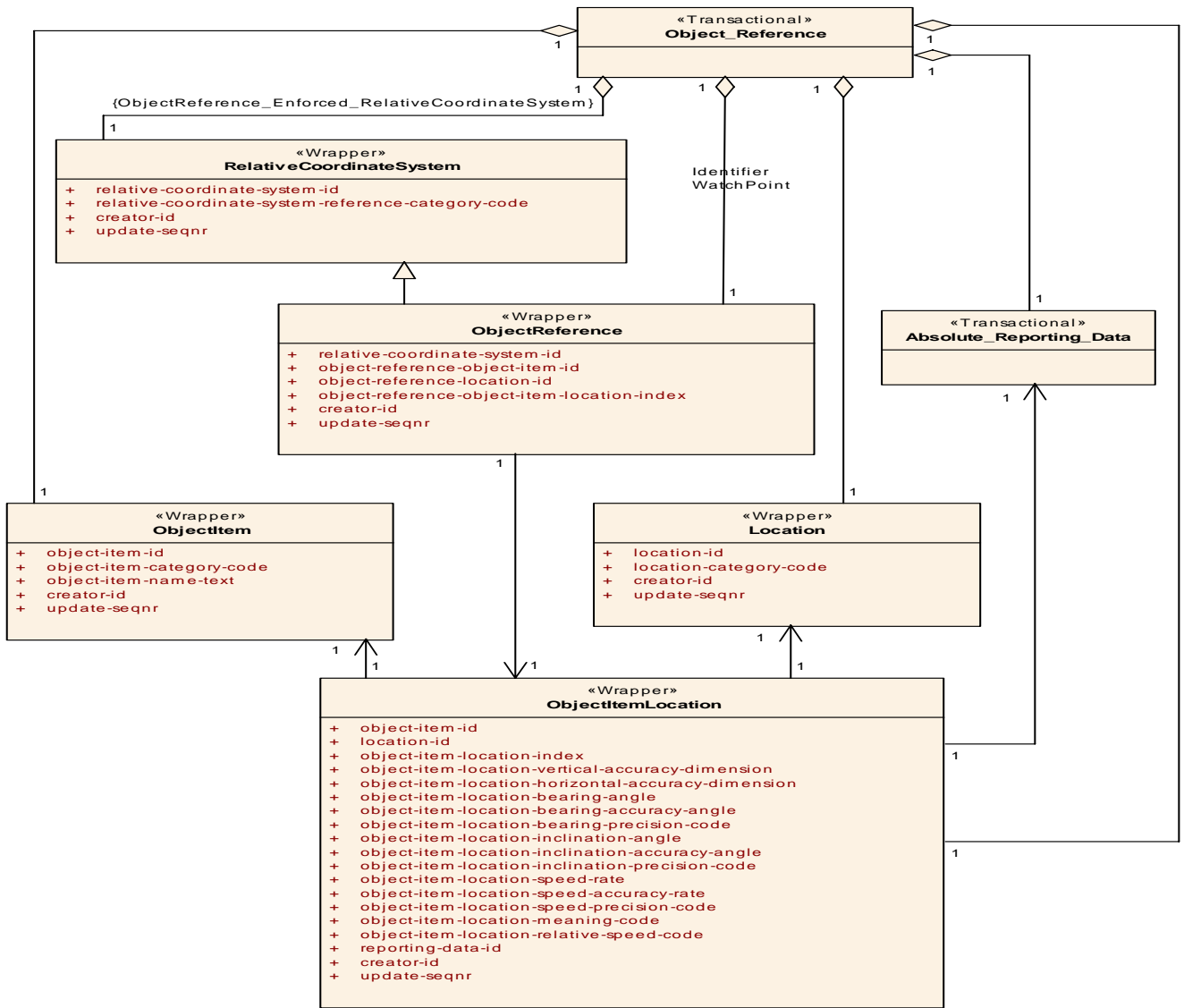


Figure 10.143 - Object_Reference

10.12 ObjectType

The ObjectType package presents data patterns that describe individually identified classes of objects that have military or civilian significance, in terms of JC3IEDM information elements.

10.12.1 Object_Item_Object_Type_Establishment

The Object_Item_Object_Type_Establishment Transactional Artifact captures information about the object-items in an establishment. An Establishment enables specifying the composition of types of objects in terms of other types. Thus, for example, a commander may require the capability to specify that a certain unit type is authorized to have certain numbers of facility or materiel types; to specify that a type of unit is composed of certain numbers of other unit types; or to specify that a type of unit is composed of certain numbers of person types.

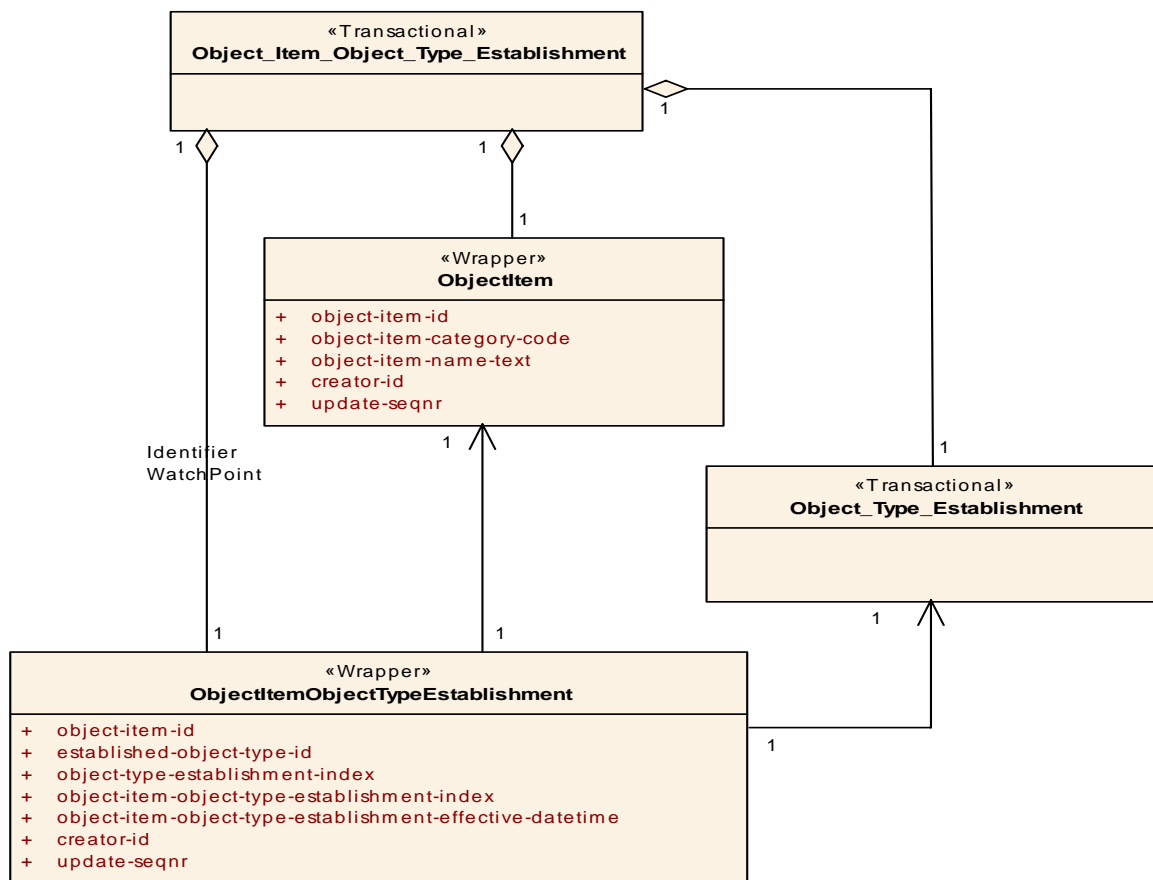


Figure 10.144 - Object_Item_Object_Type_Establishment

10.12.2 Object_Type

The Object_Type Transactional Artifact captures information about an individually identified class of objects that have operational significance.

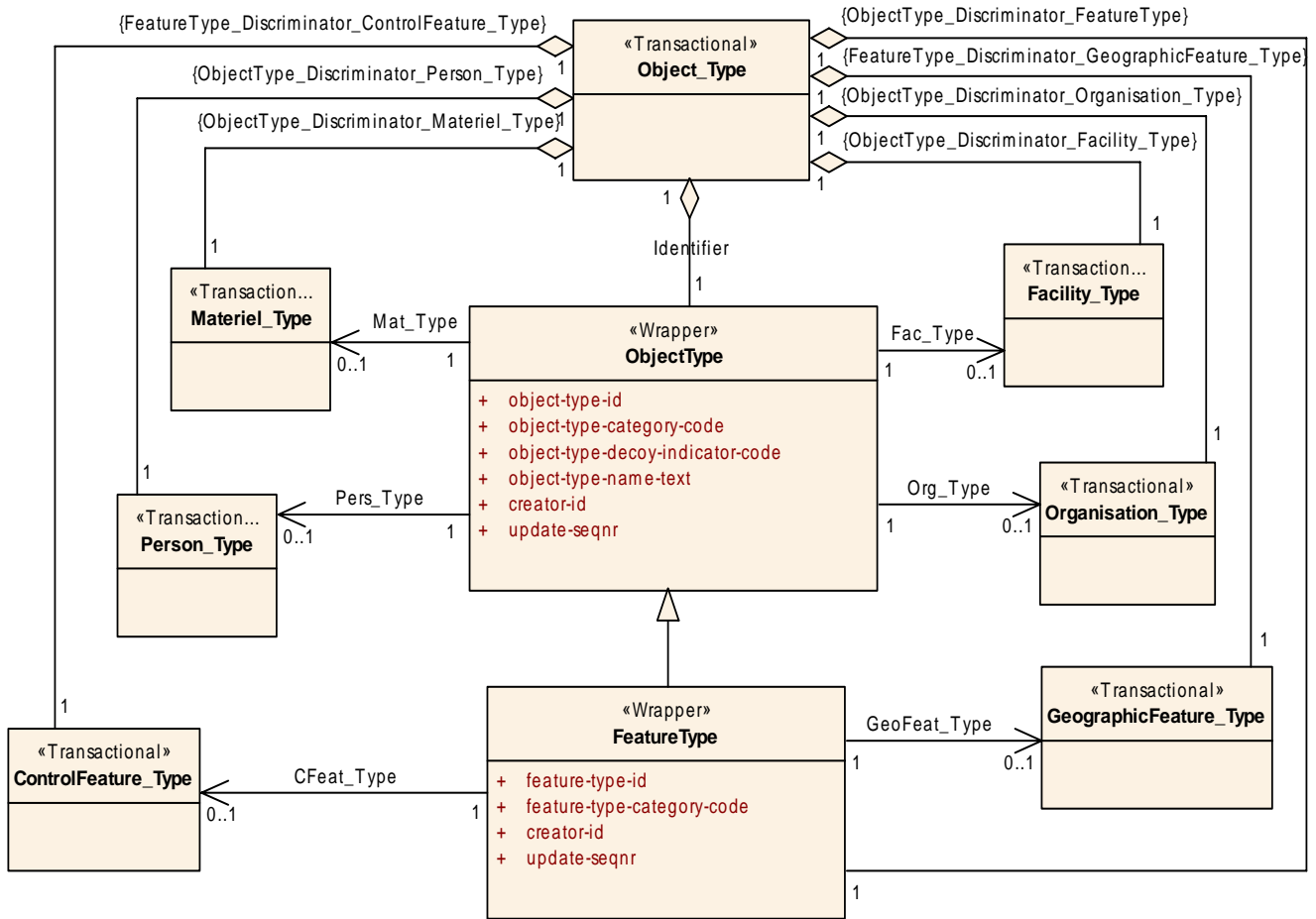


Figure 10.145 - Object_Type

10.12.3 Object_Type_Affiliation

The Object_Type_Affiliation Transactional Artifact captures information about the allegiances or affiliations to which an object-type may be assigned. Four classes of affiliations (geopolitical, religion, ethnic group, and functional group) provide a set of values that enable the capture of multiple affiliations.

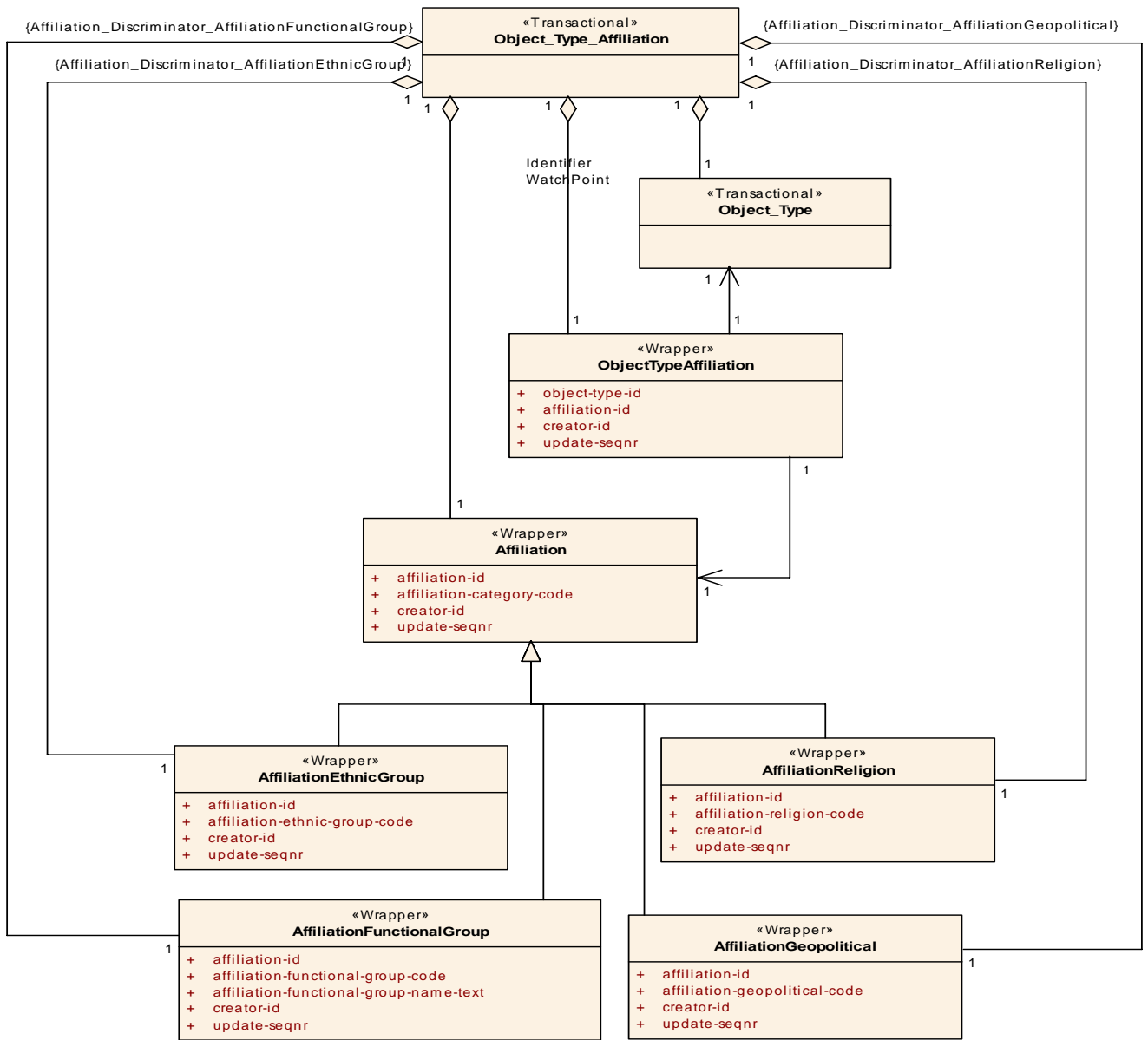


Figure 10.146 - Object_Type_Affiliation

10.12.4 Object_Type_Capability_Norm

The Object_Type_Capability_Norm Transactional Artifact captures information about the standard value of a specific capability of a specific object-type. This transactional encloses the Capability_Composite Transactional Artifact in which the normal capabilities of the object-types are kept.

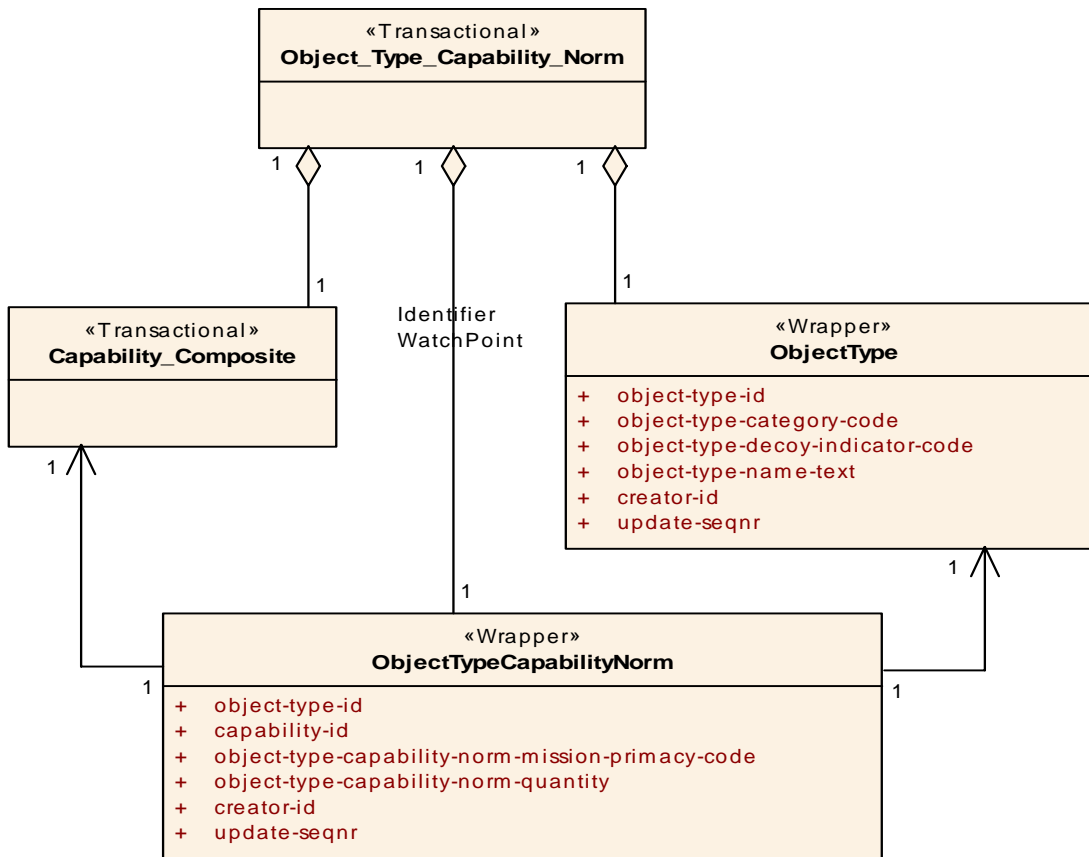


Figure 10.147 - Object_Type_Capability_Norm

10.12.5 Object_Type_Establishment

The Object_Type_Establishment Transactional Artifact captures the instances of authorisation or other form of specification which associates with the established object type under specified conditions.

Object_Type_Establishment is a support transactional of Transactional Artifacts Object_Item_Object_Type_Establishment and Object_Type_Establishment_Detail.

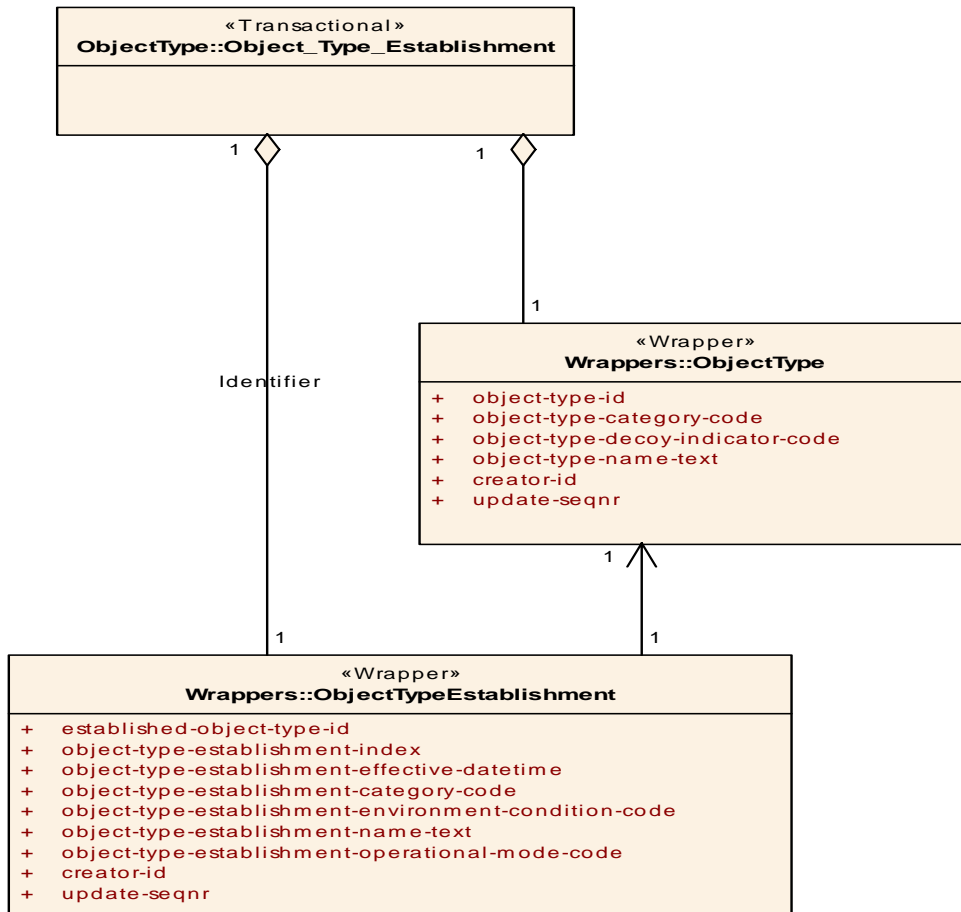


Figure 10.148 - Object_Type_Establishment

10.12.6 Object_Type_Establishment_Detail

The Object_Type_Establishment_Detail Transactional Artifact captures information about the number of a specific object-type that is authorized in a specific composition or object-type-establishment. It encloses the Transactional Artifact Object_Type_Establishment.

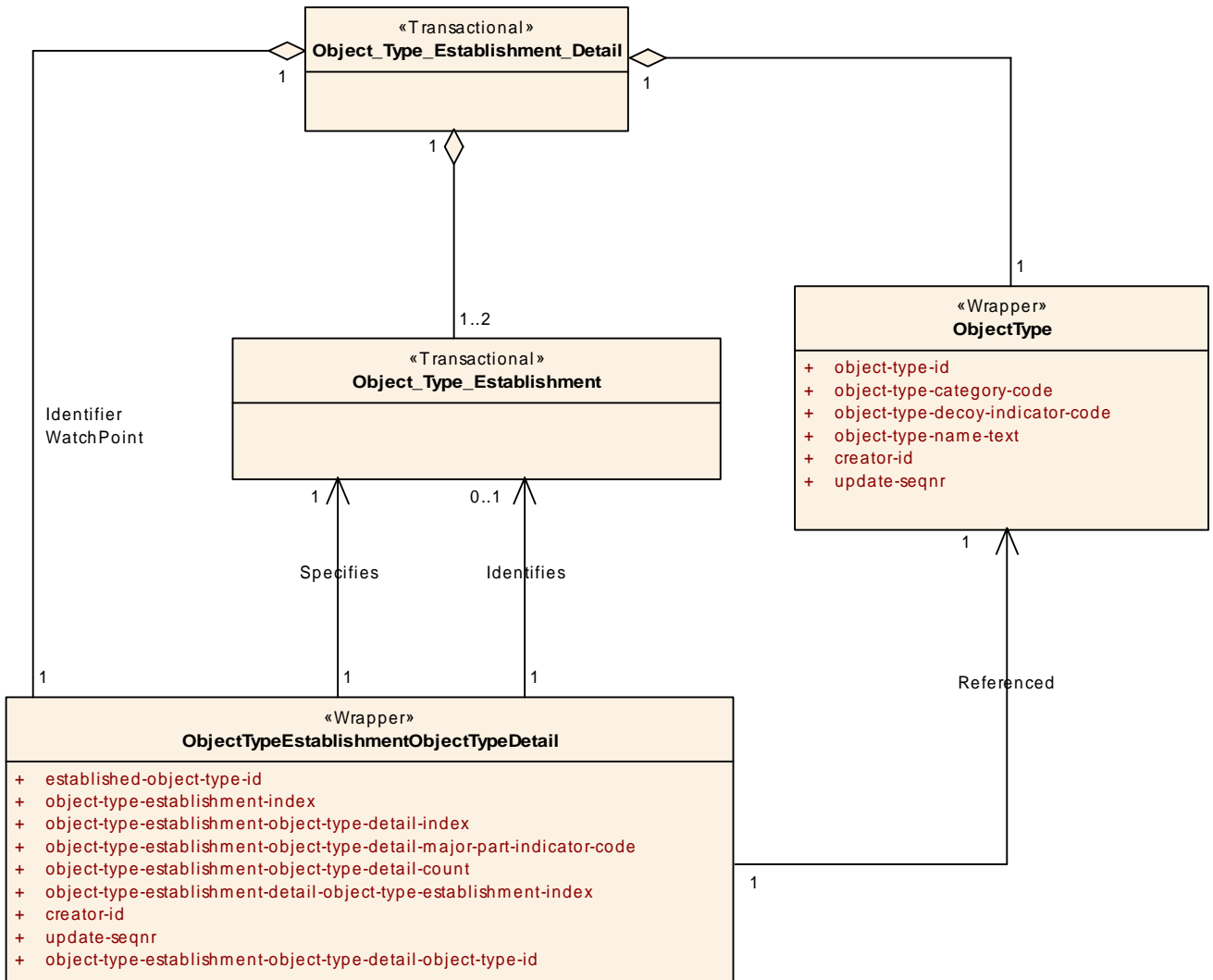


Figure 10.149 - Object_Type_Establishment_Detail

10.12.7 Object_Type_Reference_Assoc

The Object_Type_Reference_Association Transactional Artifact captures information about the nature of the relationship between a specific object-type and a specific reference. This transactional encloses the Absolute_Reporting_Data Transactional Artifact in which information about the association status report is captured.

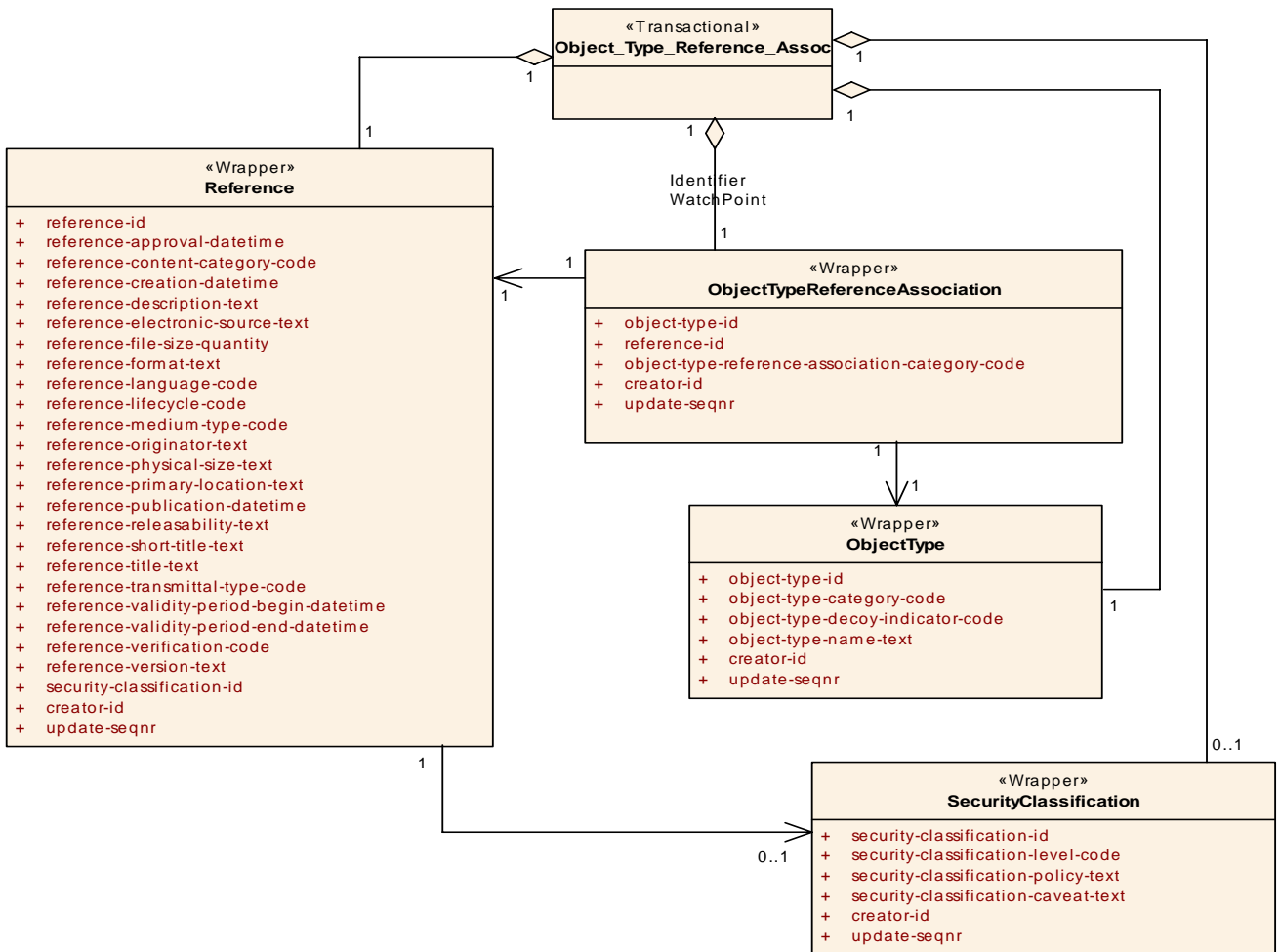


Figure 10.150 - Object_Type_Reference_Assoc

10.13 Organisation

The Organisation package presents data patterns that describe individually identified administrative or functional structures that have military or civilian significance, in terms of JC3IEDM information elements.

10.13.1 Executive_Military_Organisation_Type

The Executive_Military_Organisation_Type Transactional Artifact captures information about a military-organisation-type whose function is to manage and direct the military establishment.

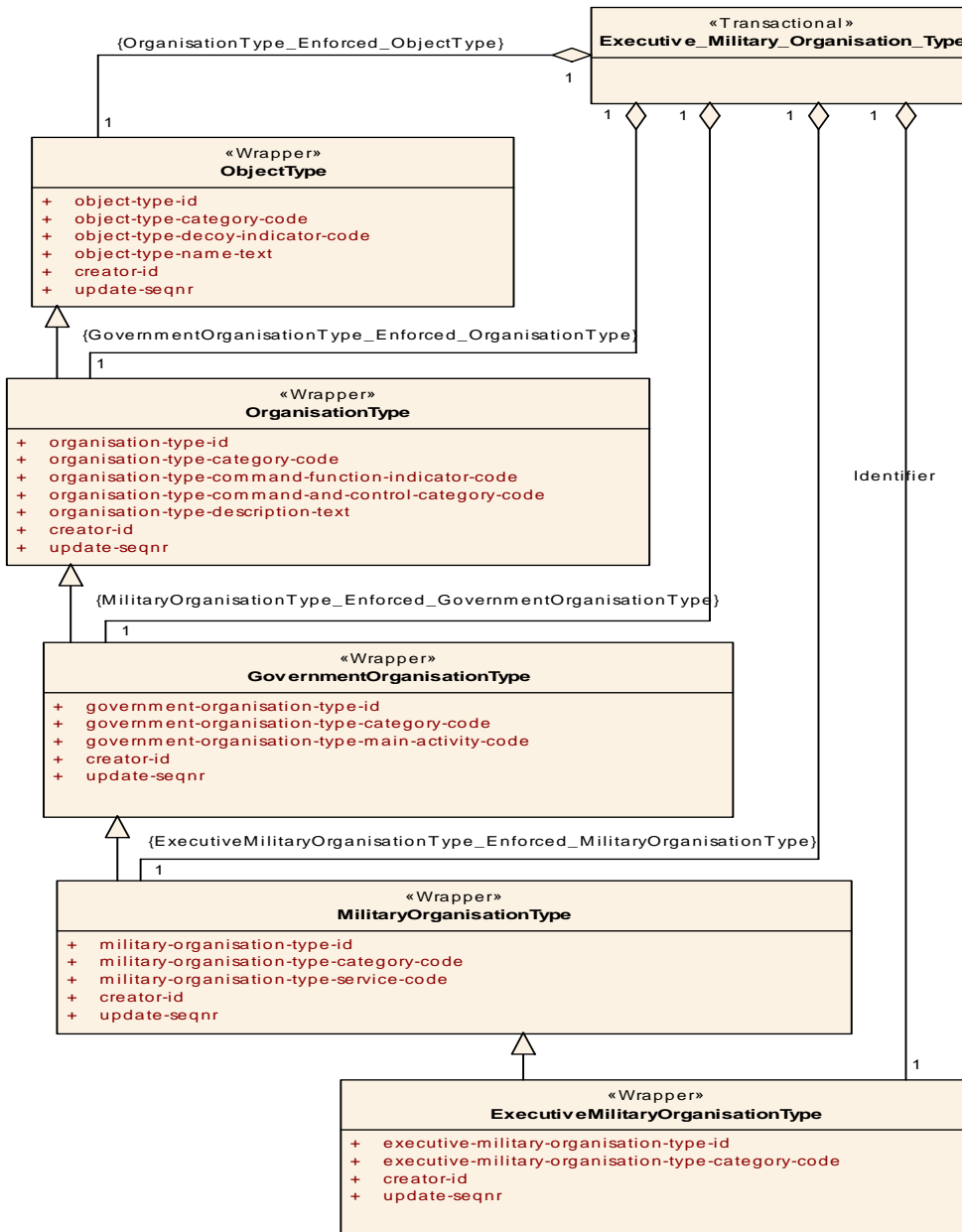


Figure 10.151 - Executive_Military_Organisation_Type

10.13.2 Government_Organisation_Type

The Government Organisation Type Transactional Artifact captures information about type of organization that controls and administers public policy under either a national or international mandate. It has one Subtype, Military Organisation Type.

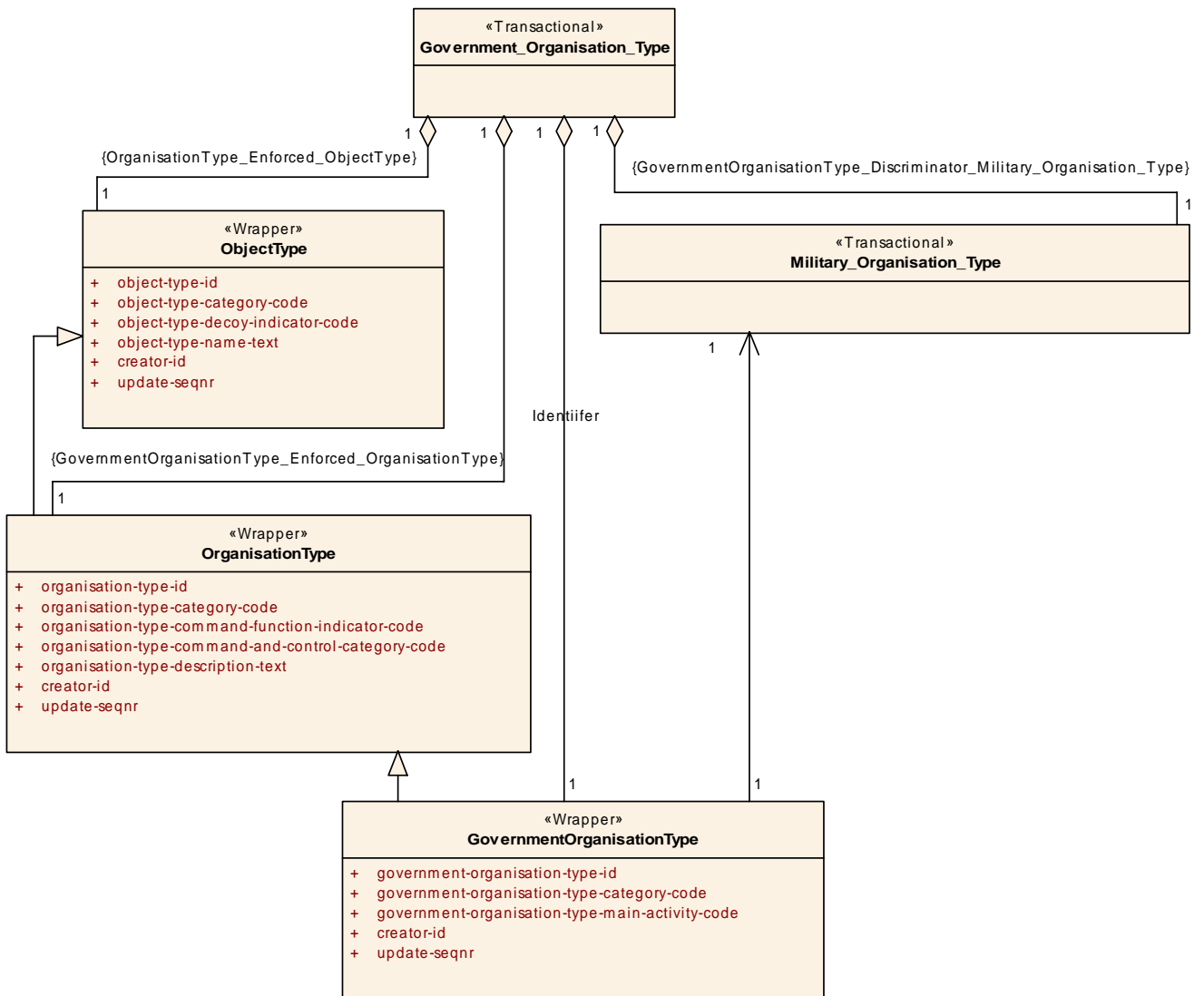


Figure 10.152 - Government_Organisation_Type

10.13.3 Military_Organisation_Type

The Military_Organisation_Type Transactional Artifact captures information about a government-organisation-type that is officially sanctioned and is trained and equipped to exert force.

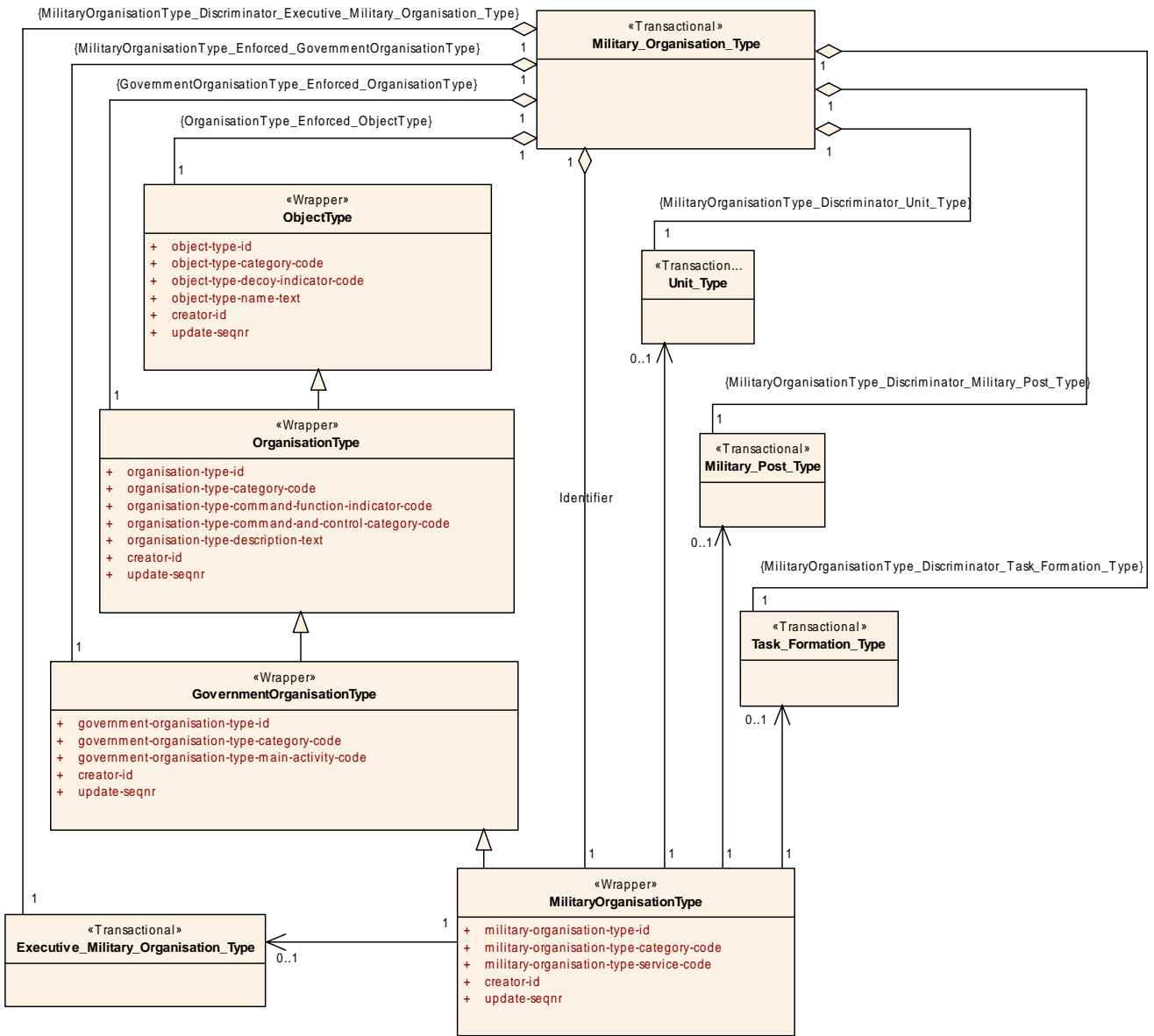


Figure 10.153 - Military_Organisation_Type

10.13.4 Military_Post_Type

The Military_Post_Type Transactional Artifact captures information about a military-organisation-type with a set of duties that can be filled by one person.

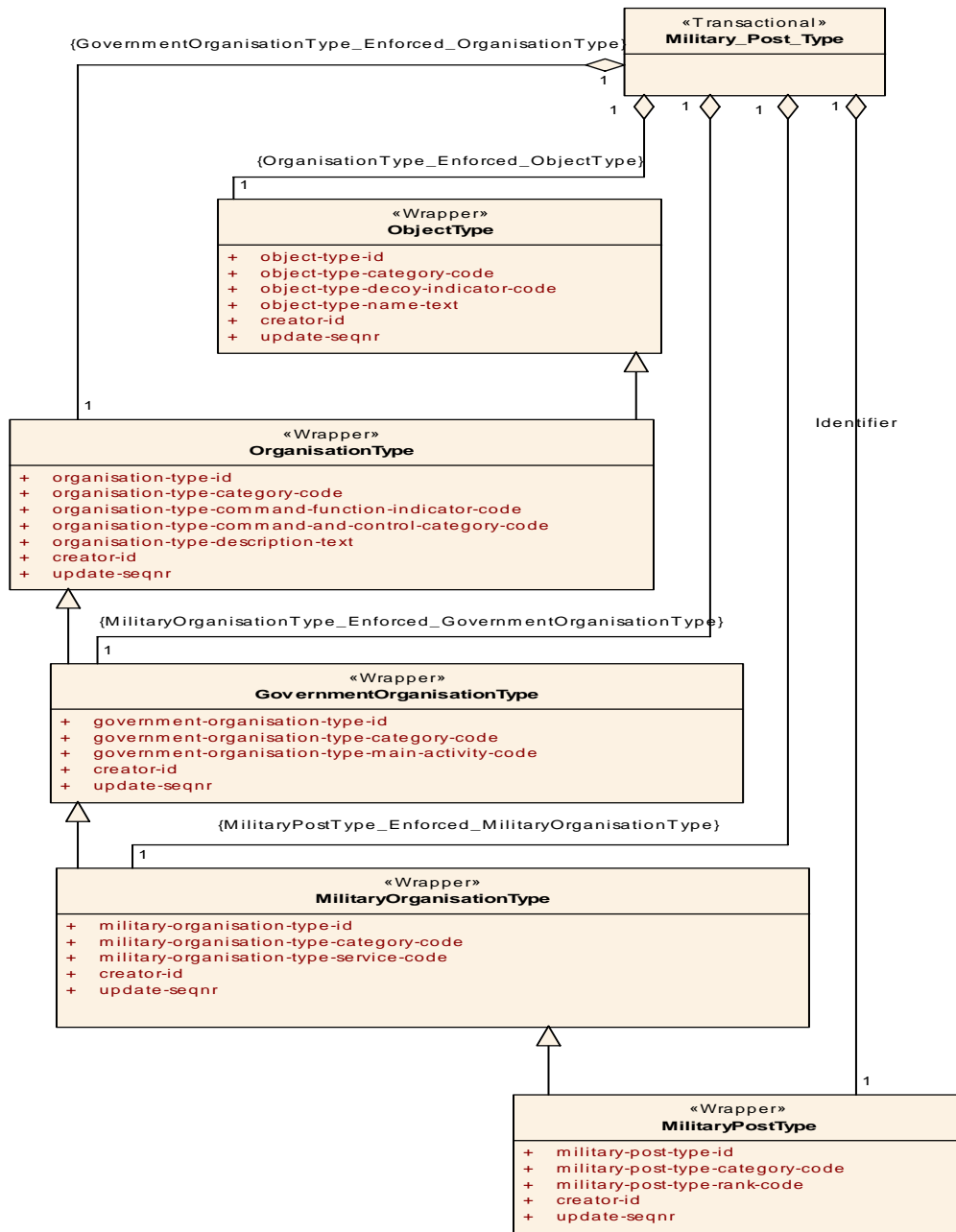


Figure 10.154 - Military_Post_Type

10.13.5 Organisation_ActionTask_ROE

The Organisation_ActionTask_ROE Transactional Artifact captures information about the status relationship between a specific organization and a specific Action-Task-Rule-of-Engagement with respect to a request for cancellation, authorization, etc. The organisation role may be to request or approve the imposition or removal of a specific ActionTask_ROE. This transactional encloses the ActionTask_ROE Transactional Artifact.

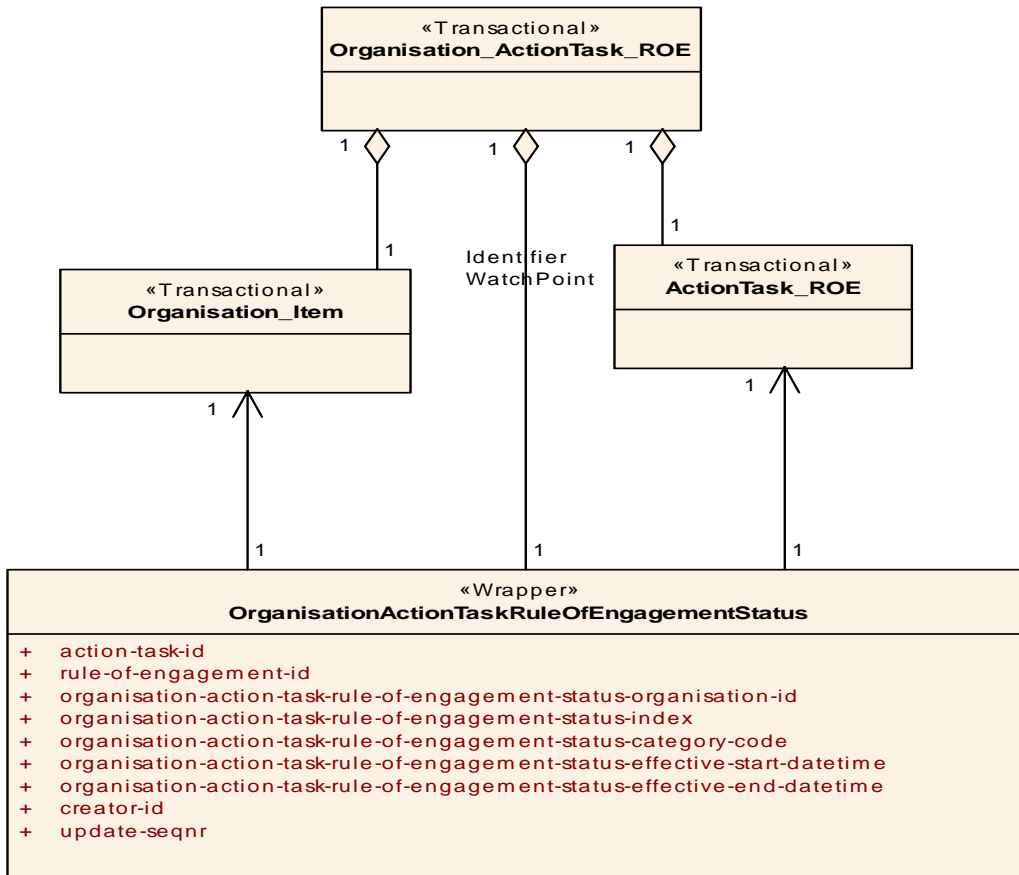


Figure 10.155 - Organisation_ActionTask_ROE

10.13.6 Organisation_Action_Assoc

The Organisation_Action_Assoc Transactional Artifact captures information about the relationship indicating the role (such as initiates, plans, oversees the execution of, etc.) of a specific organization with respect to a specific action.

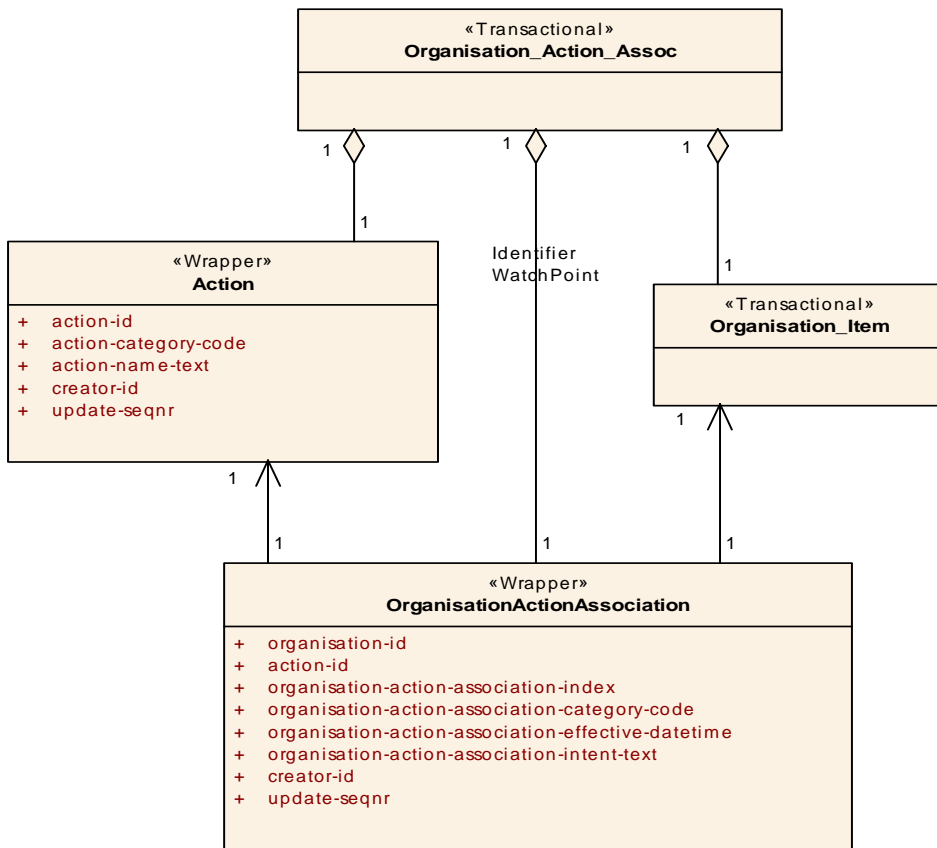


Figure 10.156 - Organisation_Action_Assoc

10.13.7 Organisation_Item

The Organisation_Item Transactional Artifact captures information about an individually identified instance of an Organisation, to which military or civilian significance is attached. Organisations subtype into Units and Convoys.

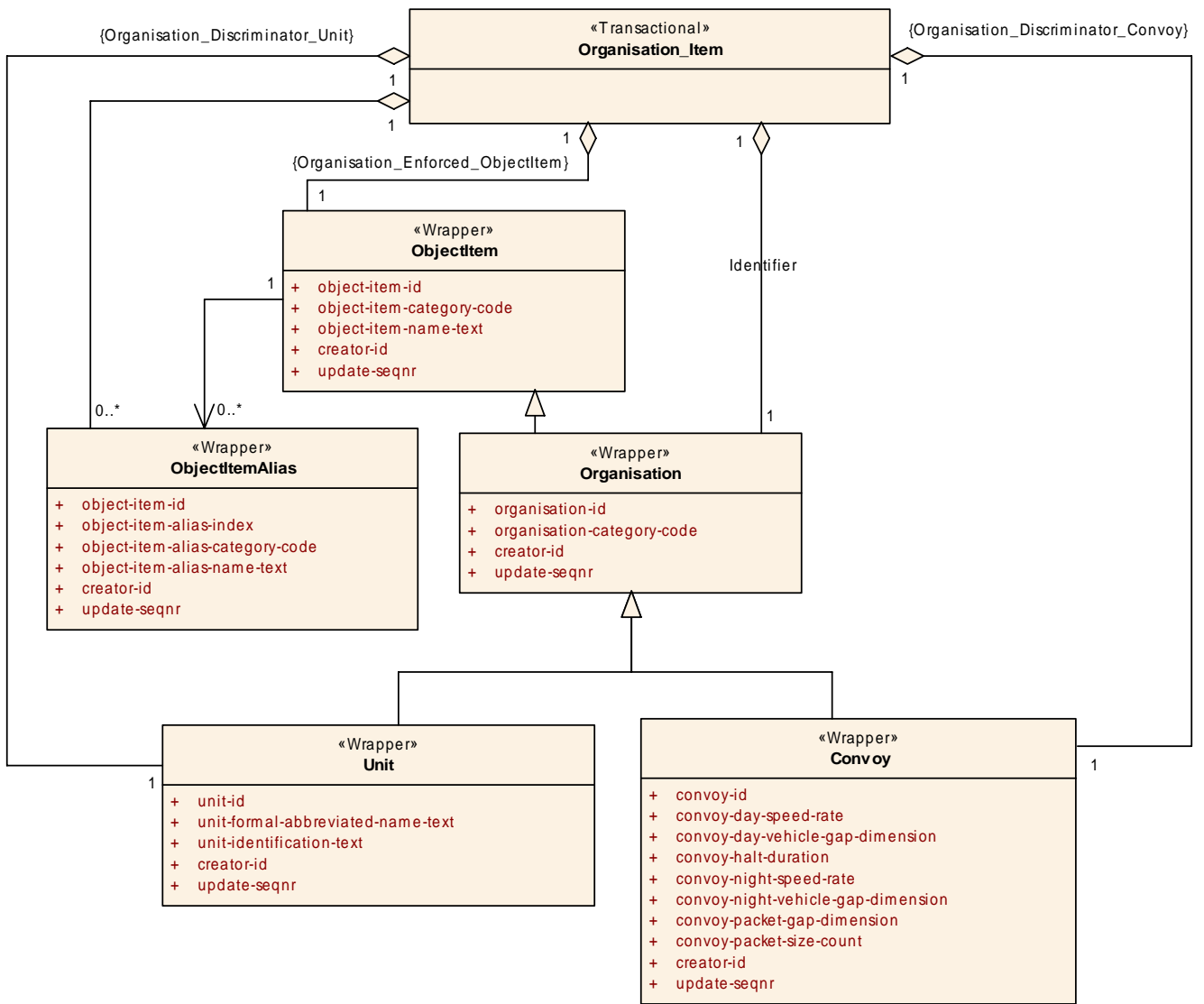


Figure 10.157 - Organisation_Item

10.13.8 Organisation_Item_Type

The Organisation_Item_Type Transactional Artifact captures information about the perceived classification of a specific organisation-item as a specific organisation -type. This transactional encloses the Absolute_Reporting_Data Transactional Artifact in which information about the type classification is captured.

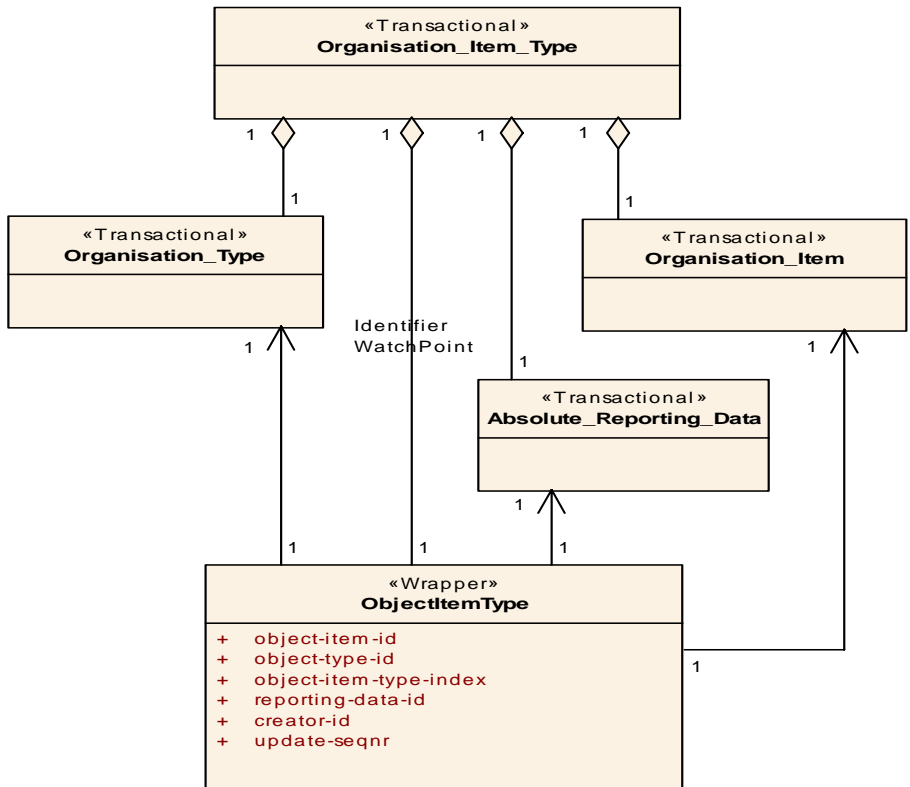


Figure 10.158 - Organisation_Item_Type

10.13.9 Organisation_Materiel_Type_Assoc

The Organisation_Materiel_Type_Assoc Transactional Artifact captures information about the relationship between a specific organisation and a specific material-type, which is normally established to define local reporting requirements.

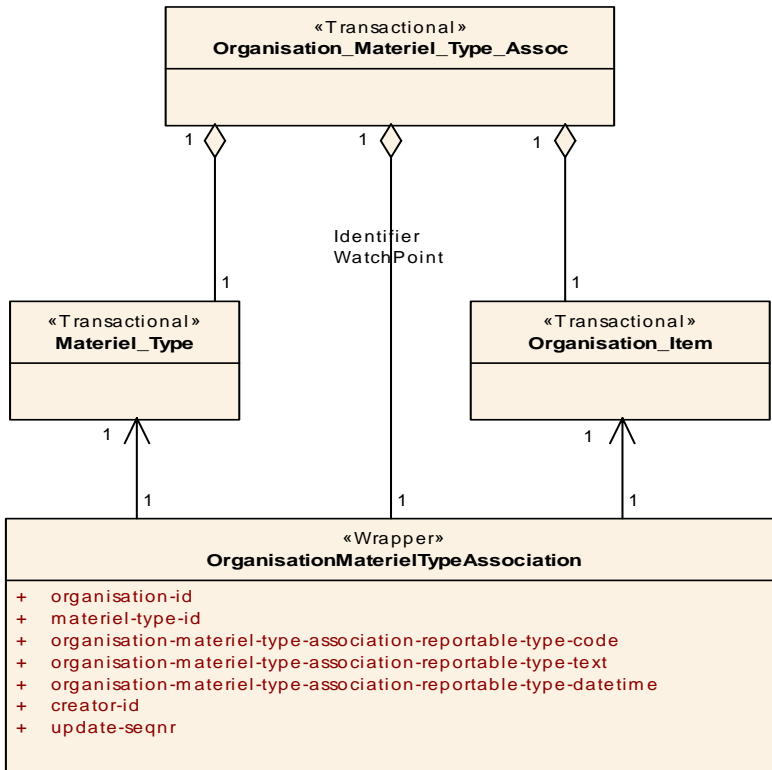


Figure 10.159 - Organisation_Materiel_Type_Assoc

10.13.10 Organisation_Plan_Order_Assoc

The Organisation_Plan_Order_Assoc Transactional Artifact captures information about the association of a specific organization to a specific plan-order, specifying the role of the organization with respect to the plan-order. The types of roles include:

- is approving authority for,
- is responsible for the preparation of,
- is responsible for the distribution of,
- has execution oversight for, and,
- is the issuing headquarters for.

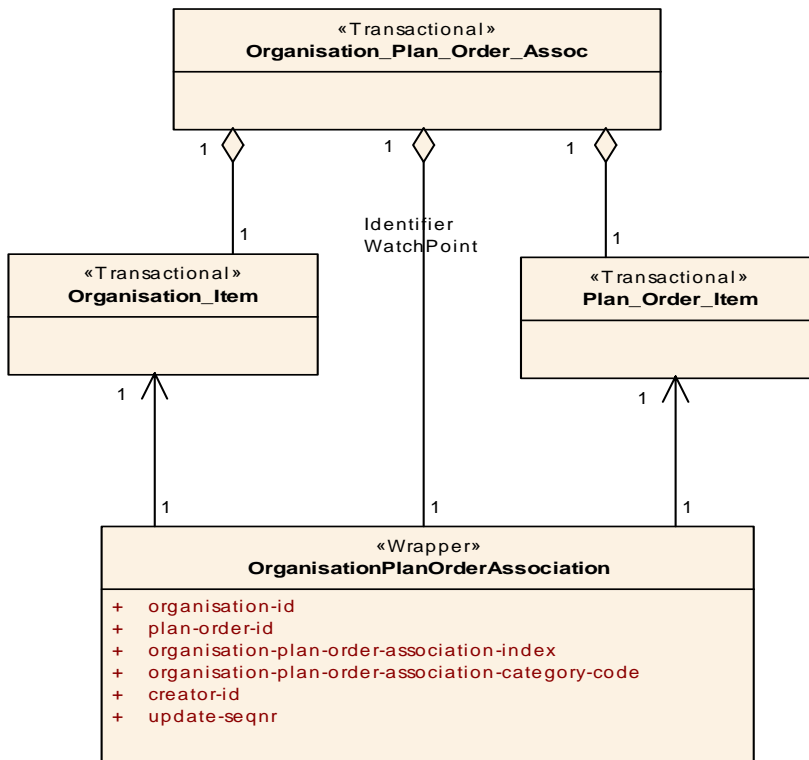


Figure 10.160 - Organisation_Plan_Order_Assoc

10.13.11 Organisation_Plan_Order_Assoc_Status

The Organisation_Plan_Order_Assoc Transactional Artifact captures information about the condition or state of a specific association of a specific organization to a specific plan-order. The status refers to the beginning or termination of the association. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the status report is captured.

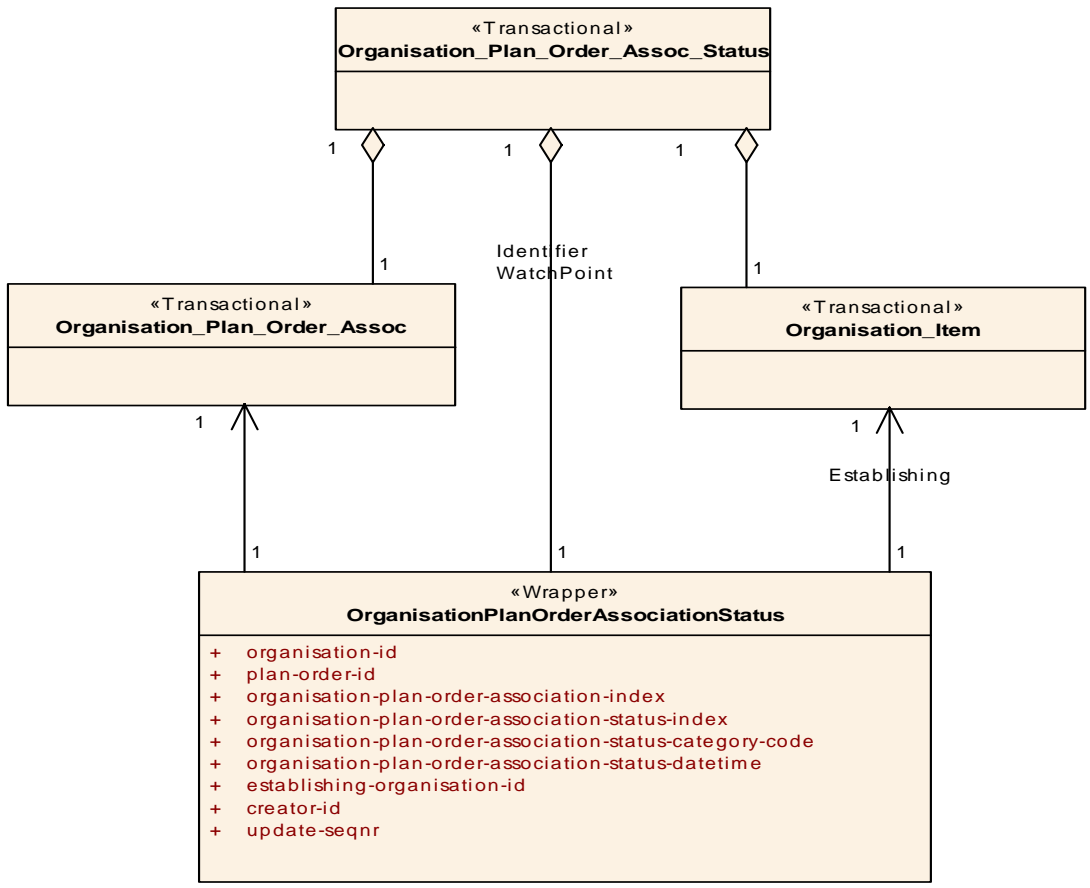


Figure 10.161 - Organisation_Plan_Order_Assoc_Status

10.13.12 Organisation_Position

The Organisation_Position Transactional Artifact captures information about the association of an organisation to a location so that the geographic position of the organisation can be specified. This transactional encloses the Location_Composite Transactional Artifact to support the specification of the location in geometrical terms. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the location association is captured.

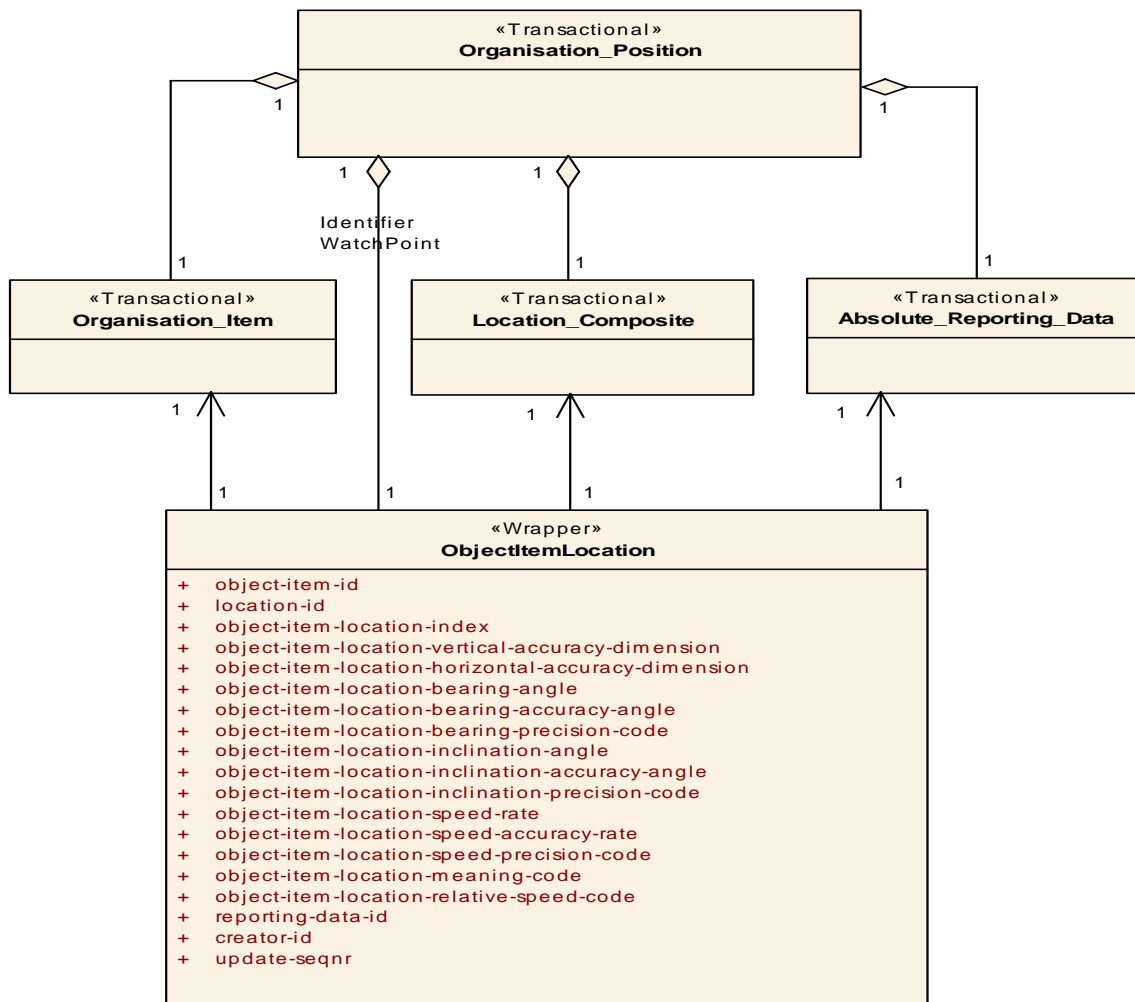


Figure 10.162 - Organisation_Position

10.13.13 Organisation_Reference_Assoc

The Organisation_Reference_Assoc Transactional Artifact captures information about the nature of the relationship between a specific organisation and a specific reference, such as, is approval authority for or is planner of, etc.

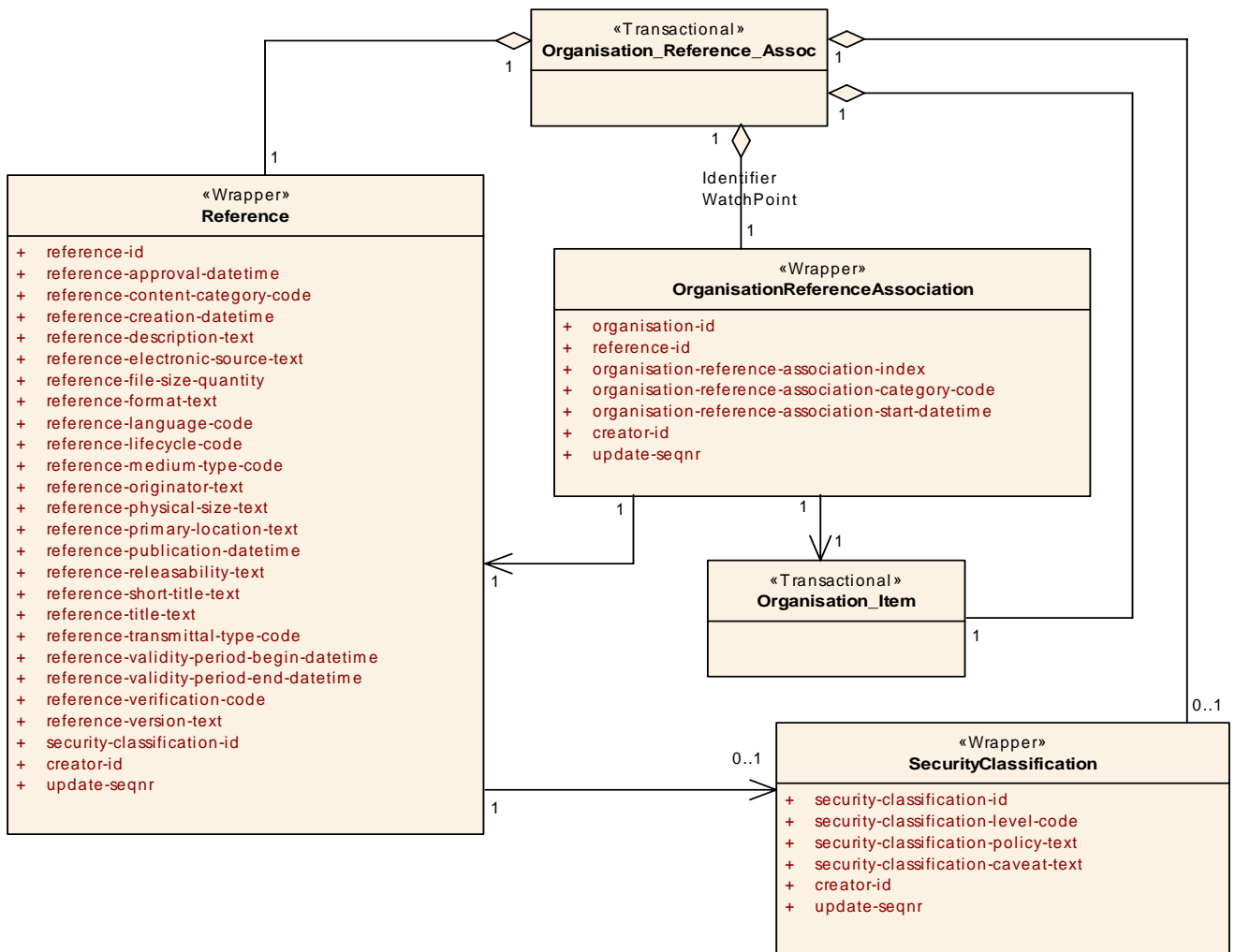


Figure 10.163 - Organisation_Reference_Assoc

10.13.14 Organisation_Status

The Organisation_Status Transactional Artifact captures information about the condition or status of a specific organisation. The status information captured pertains primarily to the operational status of the organization. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the status report is captured.

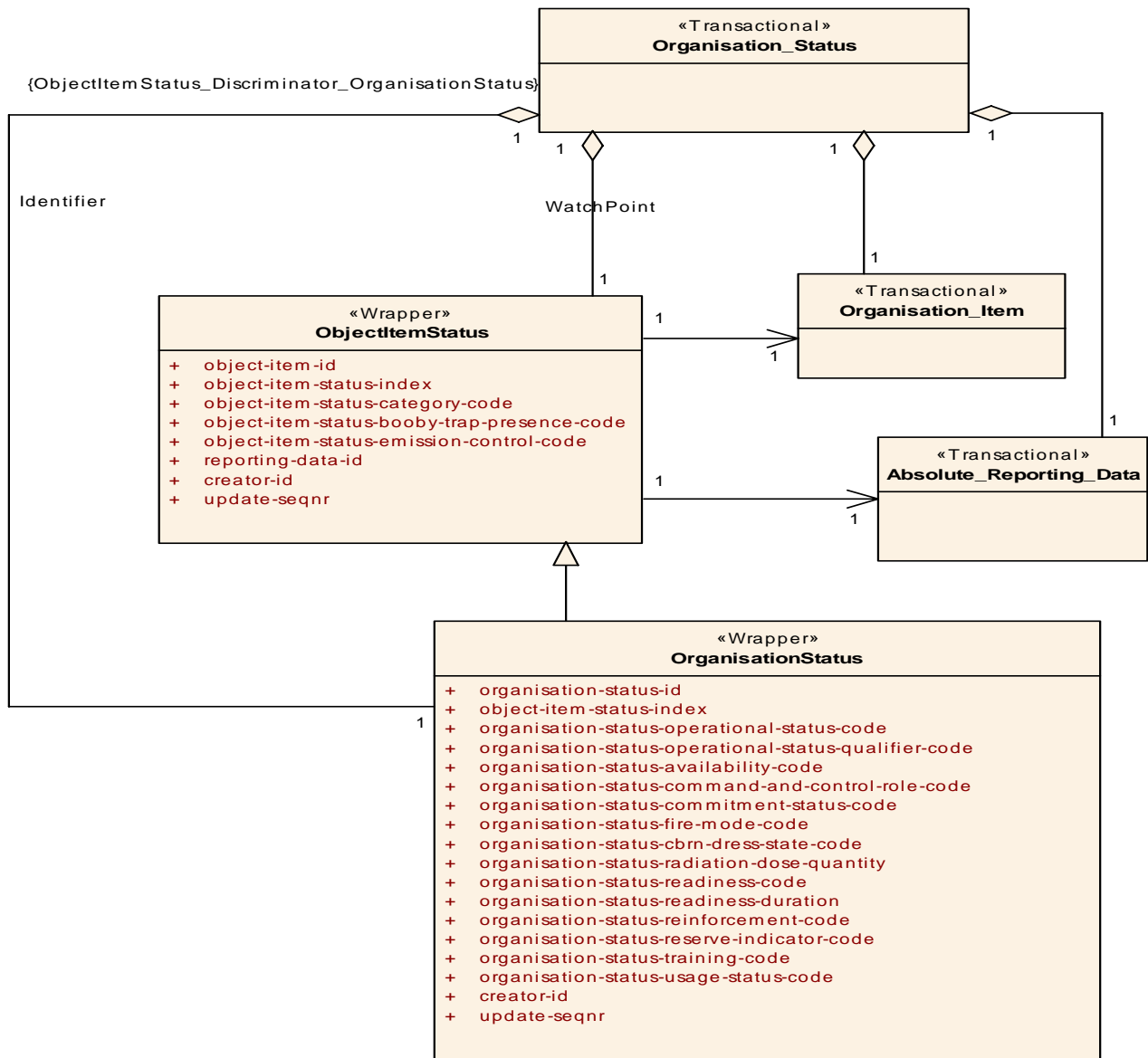


Figure 10.164 - Organisation_Status

10.13.15 Organisation_Structure

The Organisation_Structure Transactional Artifact captures information about the hierarchical configuration of a root organization, in which the configuration is specified by reference to a set of associations between instances of object-item. These instances are captured in an enclosed Transactional Artifact Organisation_Structure_Detail. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the association report is captured.

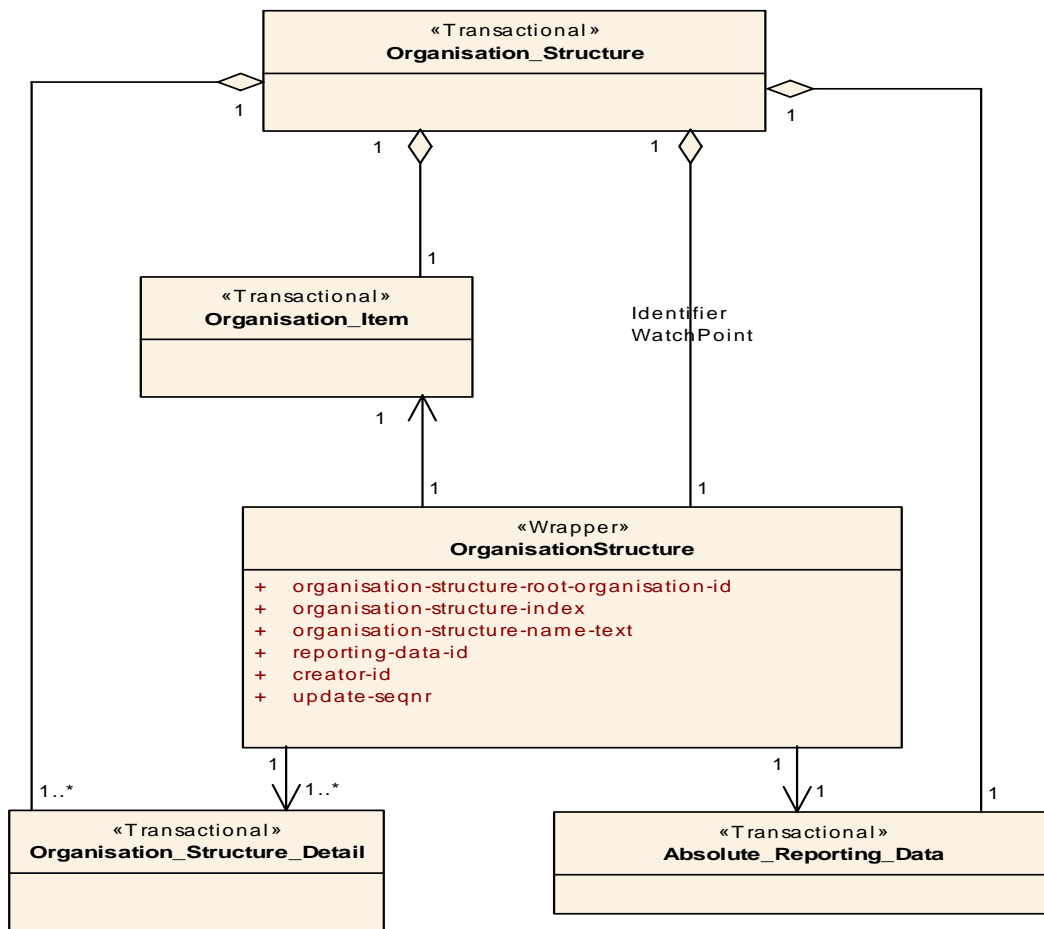


Figure 10.165 - Organisation_Structure

10.13.16 Organisation_Structure_Detail

The Organisation_Structure_Detail Transactional Artifact captures information about the specific object-item-associations that are elements of (and together define) the organization-structure. The category_code of the referenced object_item_association describes the organisational relationship between the referenced subject_object and object_object items.

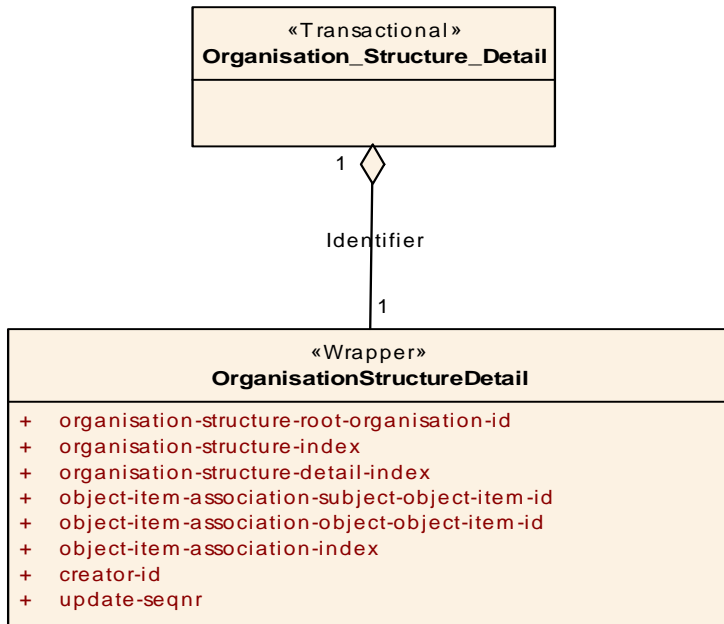


Figure 10.166 - Organisation_Structure_Detail

10.13.17 Organisation_Type

The Organisation_Type Transactional Artifact captures information about a specific type of Organisation that is of operational interest. An Organisation_Type represents an administrative or functional structure constituted to accomplish an aim, purpose or mission. An important class of the Organization-Type pertains to governmental organizations, which include military organizations. An optional Government_Organisation_Type, Transactional Artifact has been specified and is enclosed in this Organisation_Type Transactional Artifact.

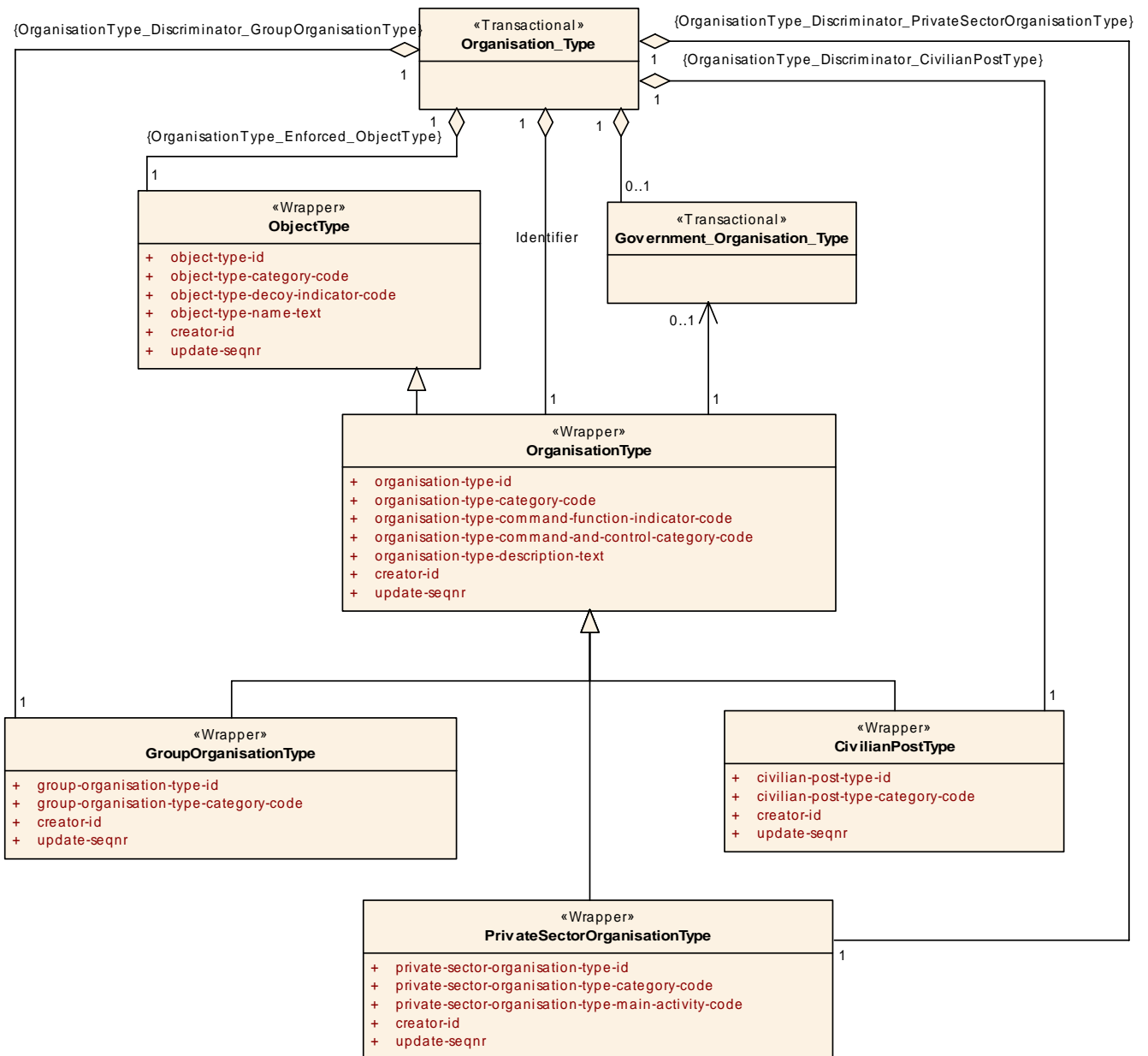


Figure 10.167 - Organisation_Type

10.13.18 Task_Formation_Type

The Task_Formation_Type Transactional Artifact captures information about a military-organisation-type that is constituted on a temporary or semi-permanent basis for the purpose of carrying out a specific mission, operation or task.

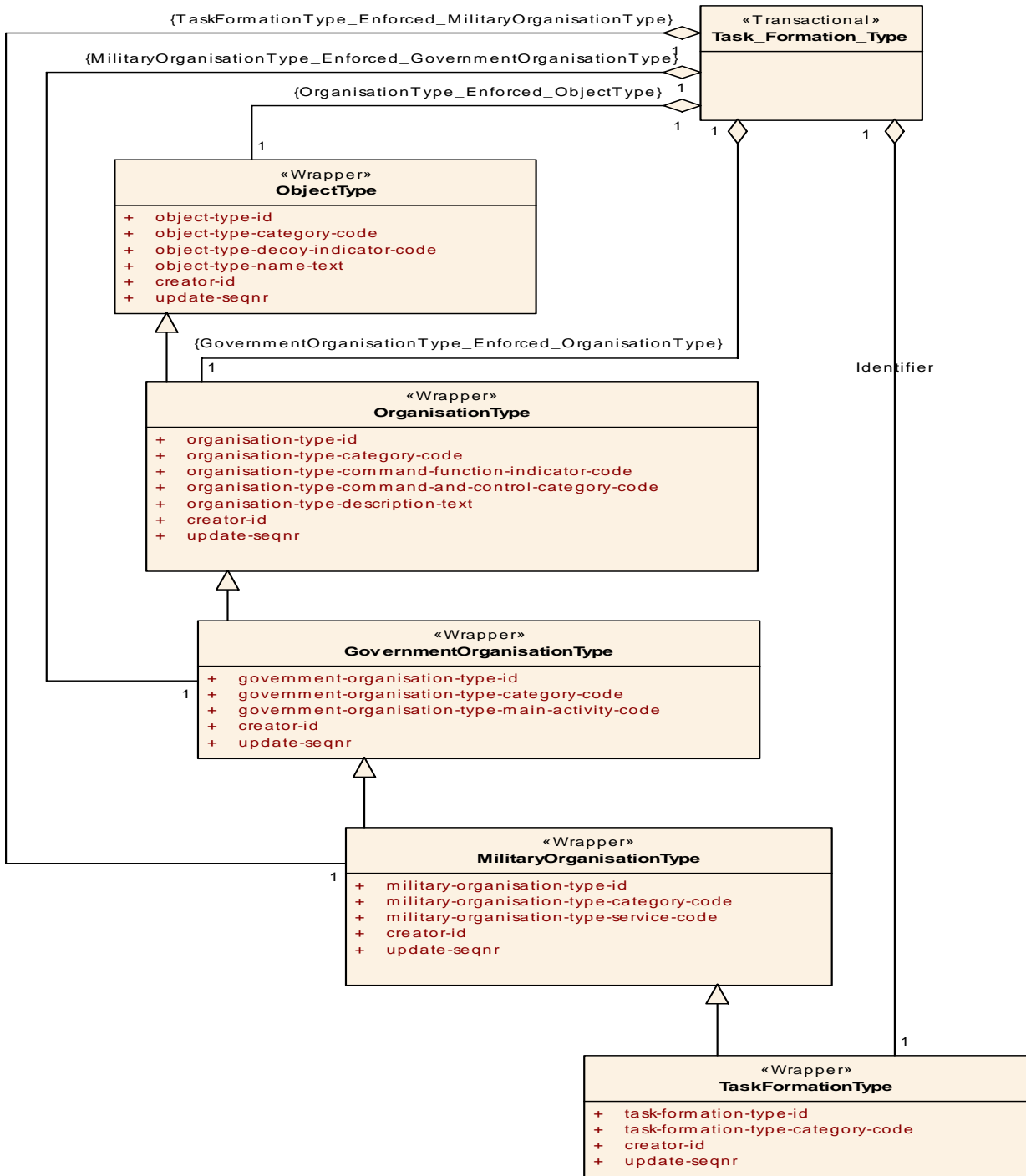


Figure 10.168 - Task_Formation_Type

10.13.19 Unit_Type

The Unit_Type Transactional Artifact captures information about a military-organisation-type whose structure is defined by a competent authority.

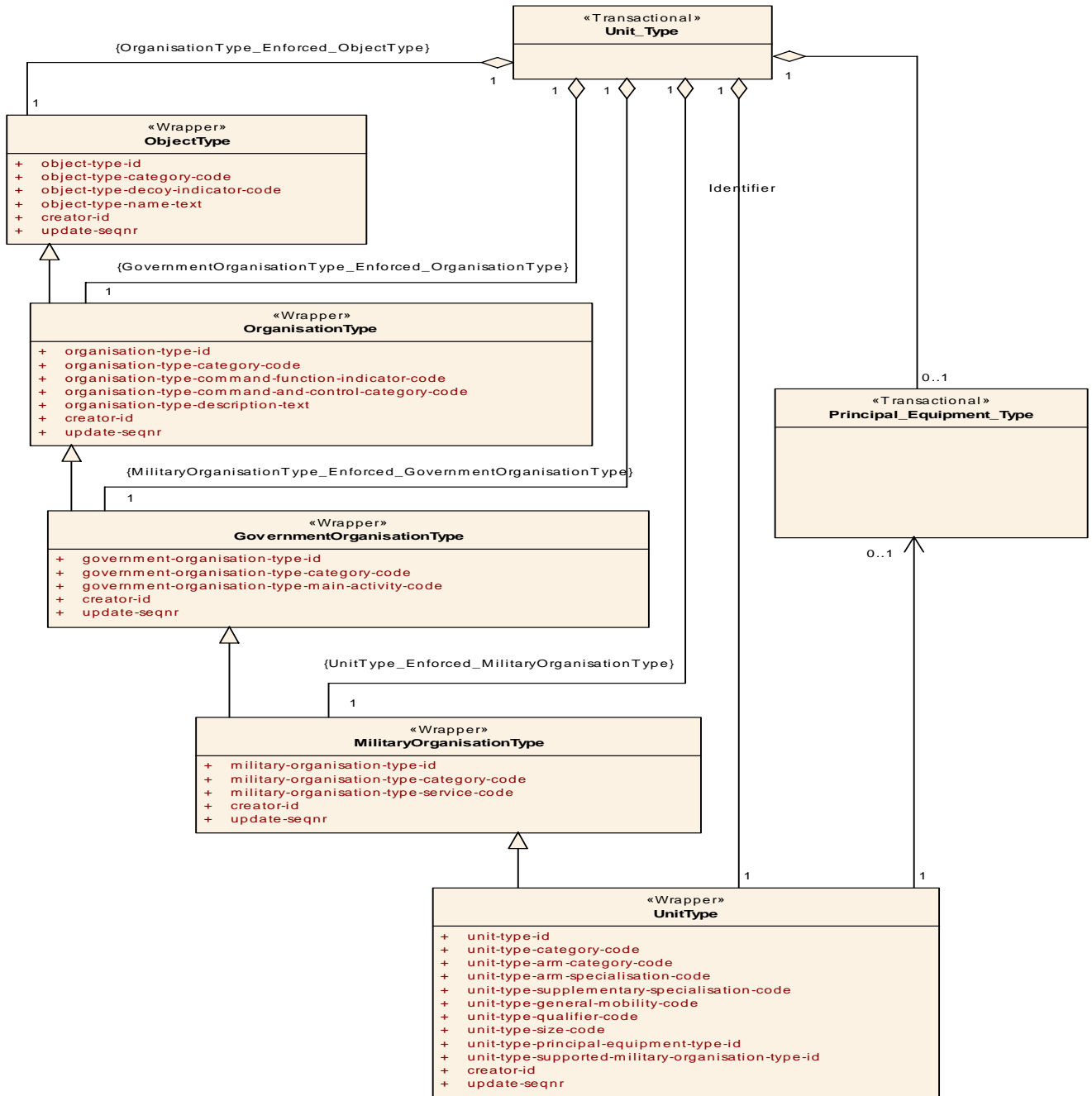


Figure 10.169 - Unit_Type

10.14 Person

The Person package presents data patterns that describe individually identified human beings to whom military or civilian significance is attached, in terms of JC3IEDM information elements.

10.14.1 Person_Identification_Document

The Person_Identification_Document Transactional Artifact captures information about an individually identified instance of a document used to identify a specific Person (to whom operational significance is attached), such as a Military identification card or a passport. It is a support transactional used in the Person_Item Transactional Artifact.

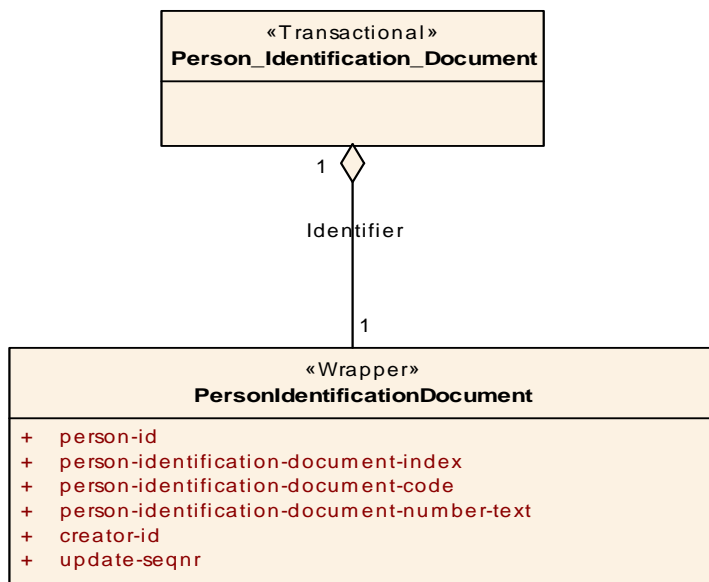


Figure 10.170 - Person_Identification_Document

10.14.2 Person_Item

The Person_Item Transactional Artifact captures information about an individually identified instance of a Person, to whom operational significance is attached. The information maintained in this Transactional Artifact includes first, the basic "tombstone" information regarding this instance of a Person (name, birth date-time, blood-type code, gender code, and the professing indicator code [an indicator of whether or not the person professes a religious preference]). This Transactional Artifact also includes information regarding aliases and language skills (linguistic proficiency in a particular language) of this instance of a Person. Finally, this Transactional Artifact may include information regarding any identification documents this instance of a Person is known to have.

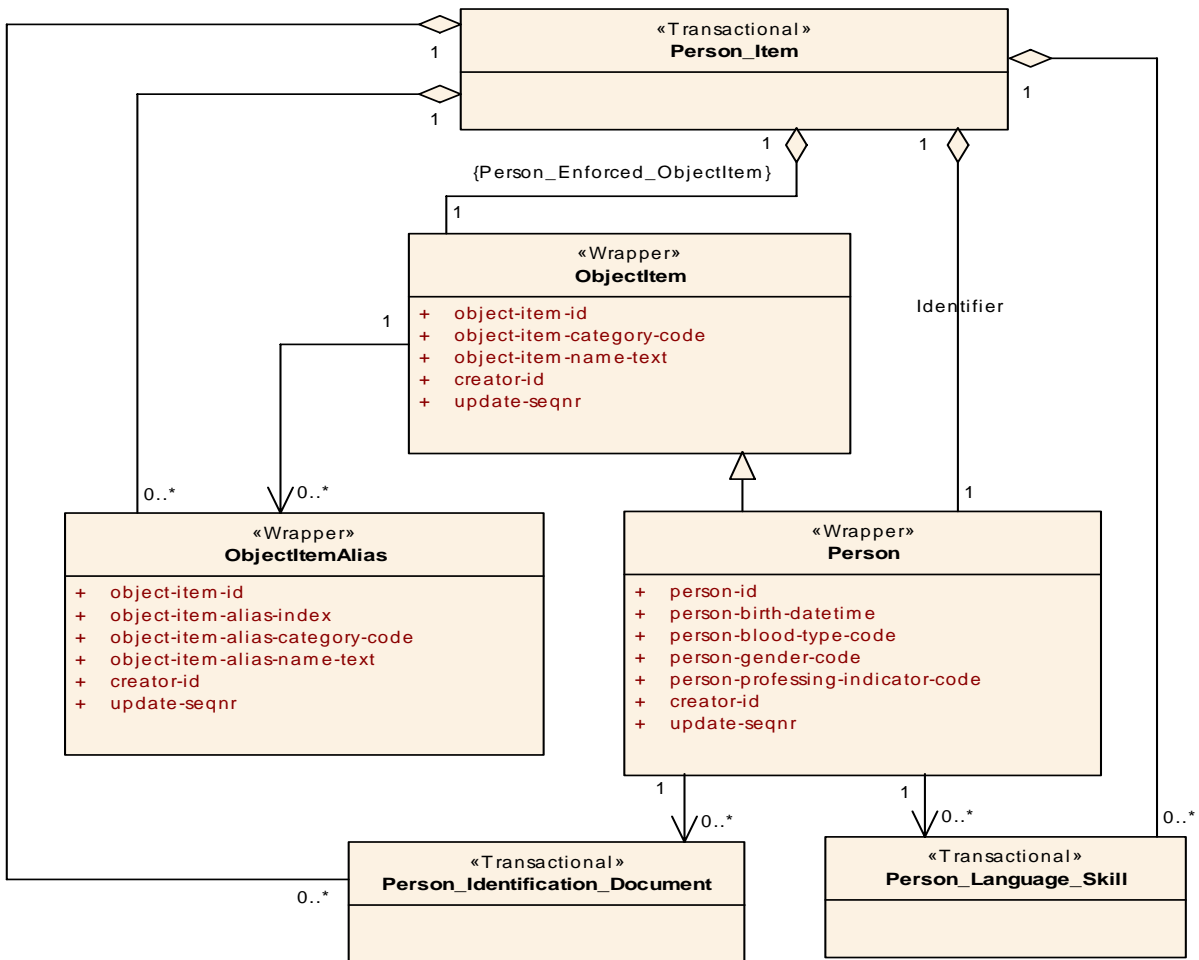


Figure 10.171 - Person_Item

10.14.3 Person_Item_Type

The Person_Item_Type Transactional Artifact captures information about the perceived classification of a specific person-item as a specific person -type. This transactional encloses the Absolute_Reporting_Data Transactional Artifact in which information about the type classification report is captured.

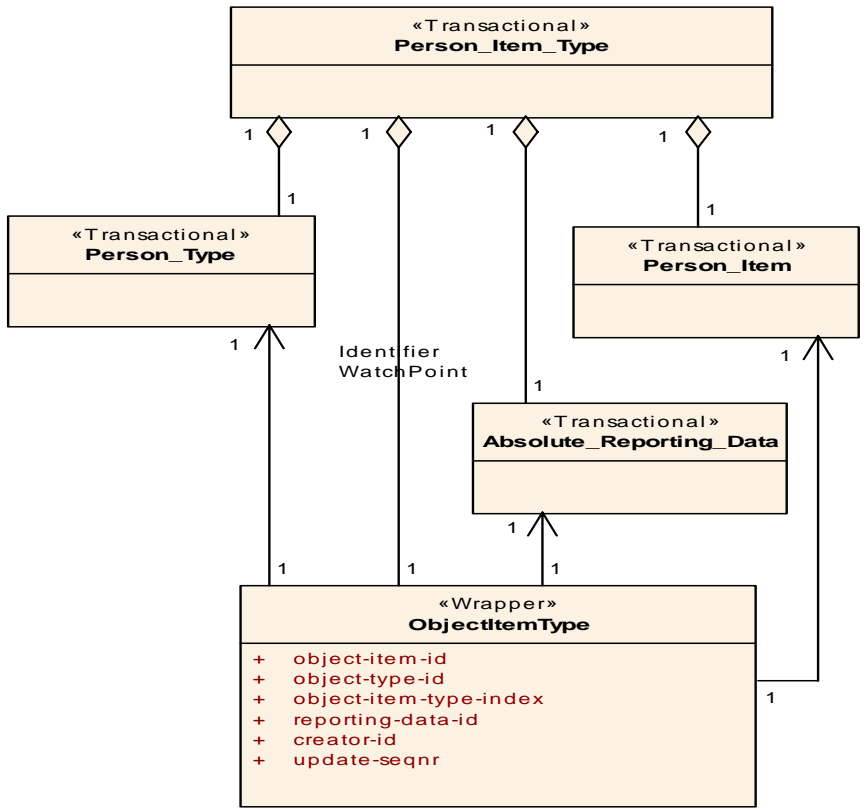


Figure 10.172 - Person_Item_Type

10.14.4 Person_Language_Skill

The Person_Language_Skill Transactional Artifact captures information about the proficiency or ability of a specific Person (to whom military or civilian significance is attached) with regard to a specific language. It is a support transactional used in the Person_Item Transactional Artifact.

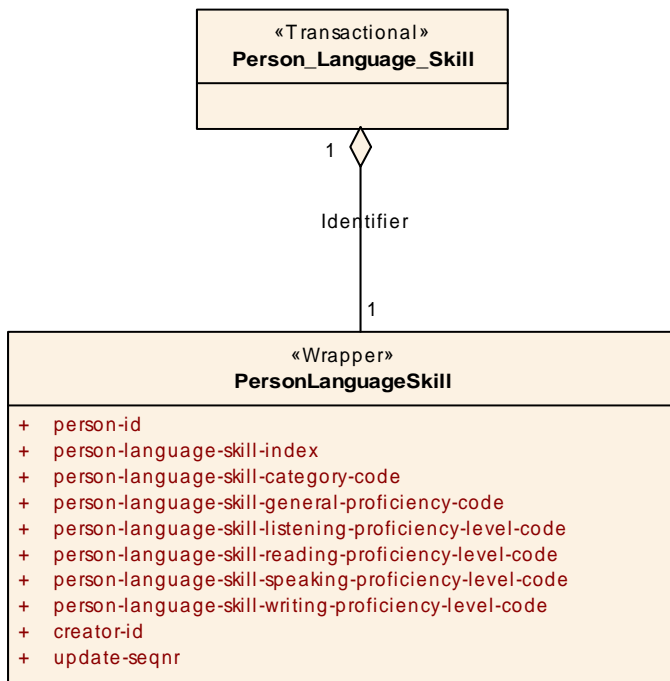


Figure 10.173 - Person_Language_Skill

10.14.5 Person_Position

The Person_Position Transactional Artifact captures information about the association of a specific person to a location so that the geographic position of the person can be specified. This transactional encloses the Location_Composite Transactional Artifact to support the specification of the location in geometrical terms. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the location association is captured.

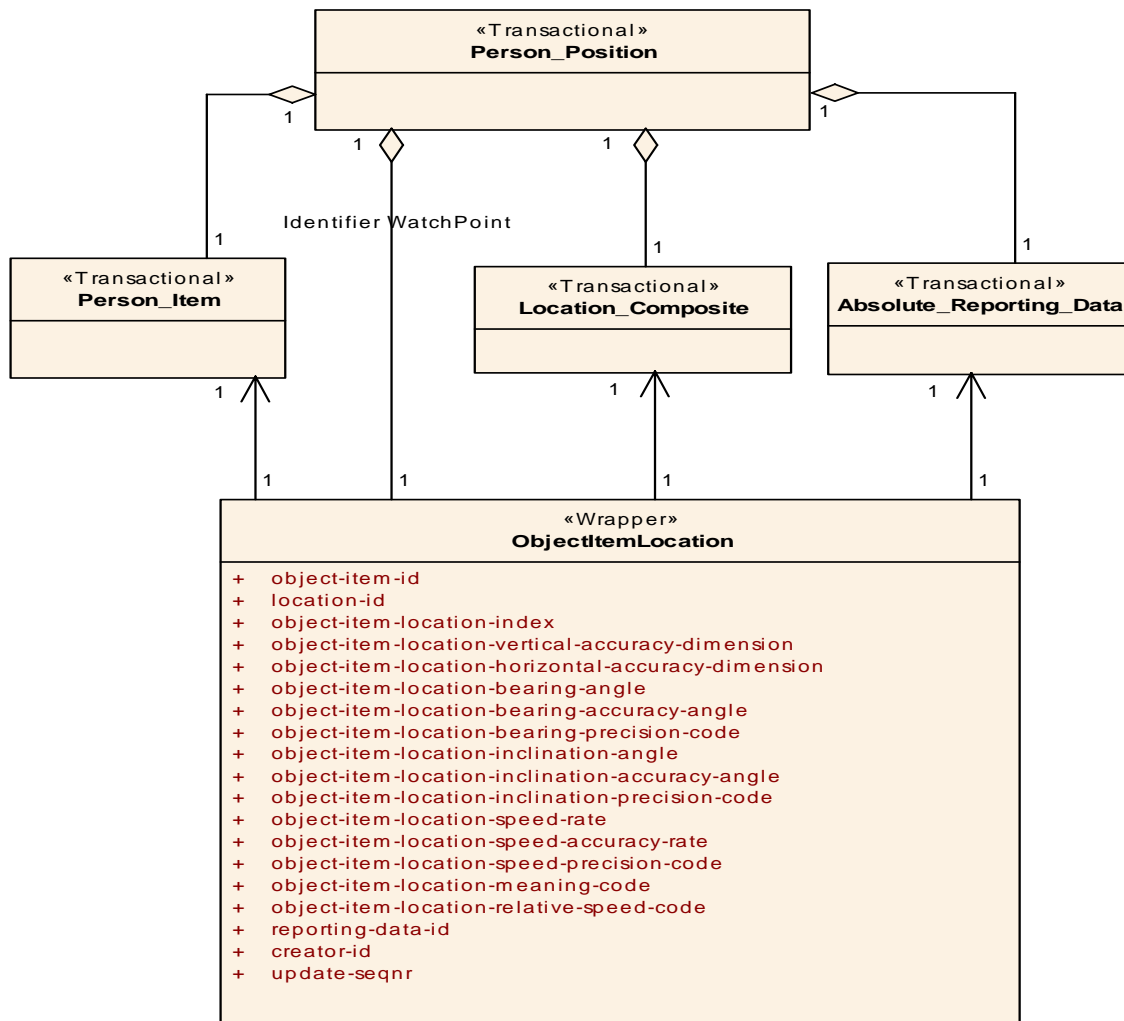


Figure 10.174 - Person_Position

10.14.6 Person_Status

The Person_Status Transactional Artifact captures information about the condition or status of a specific person. The status information captured pertains primarily to the operational status of the person. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the status report is captured.

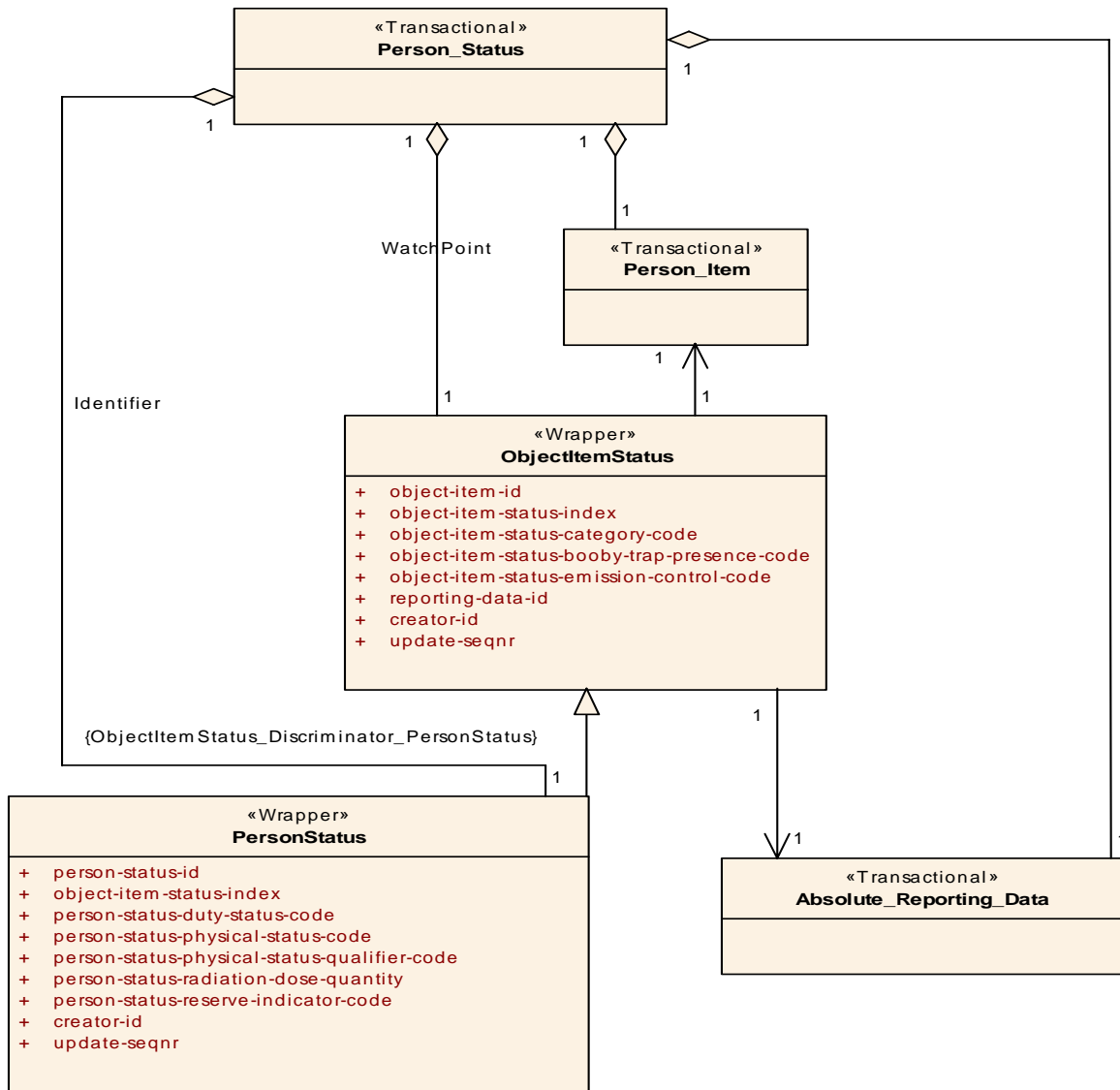


Figure 10.175 - Person_Status

10.14.7 Person_Type

The Person_Type Transactional Artifact captures information about a specific type of Person. The primary classification is Civilian, Military, or Parliamentary. The secondary classification is numerous, including such types as Intellectual, Landowner, Displaced person, Prisoner of war, etc. Another classification includes a designation of the military or civil grade that establishes the relative position or status of the specific person-type within an organization (rank).

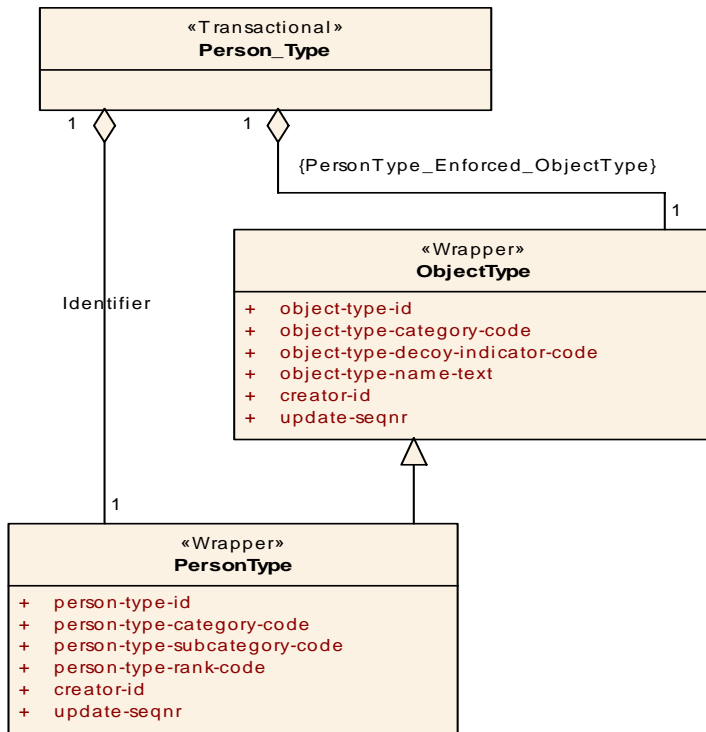


Figure 10.176 - Person_Type

10.15 Plans & Orders

The Plans & Orders package presents data patterns that describe pre-conceived schemes (planned or ordered) for the accomplishment of an operational objective.

10.15.1 Order_Status

The Order_Status Transactional Artifact captures information about the condition of a specific Order. The domain values are Issued, Stopped.

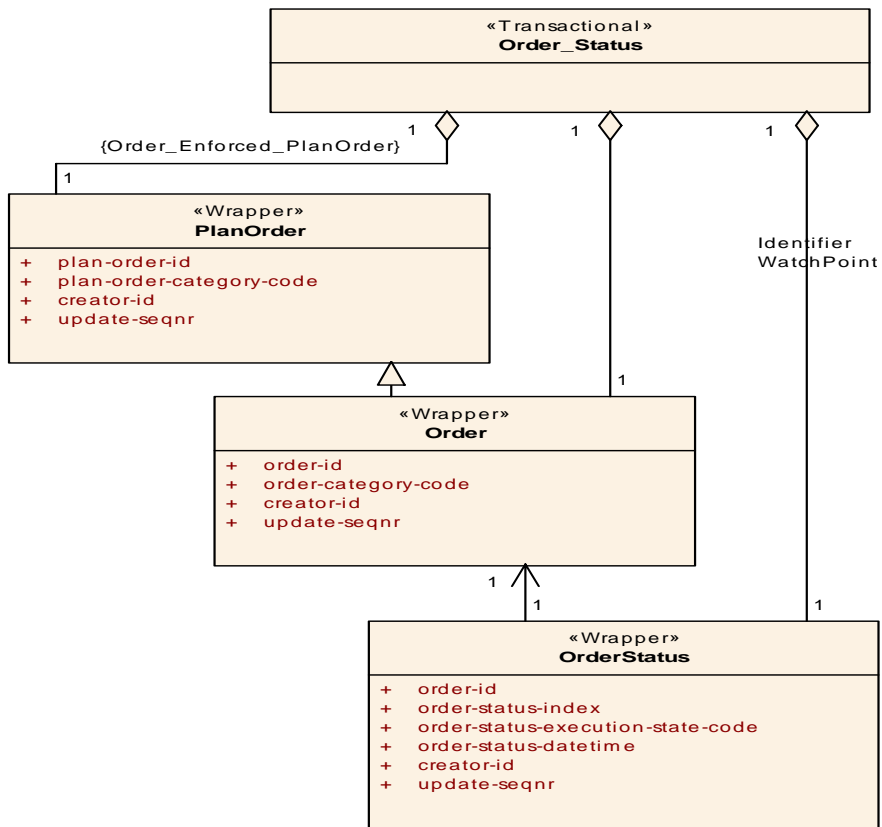


Figure 10.177 - Order_Status

10.15.2 Plan_Order_Assoc

The Plan_Order_Assoc Transactional Artifact captures information about the associations between specific pairs of plan-order, such as is superseded by.

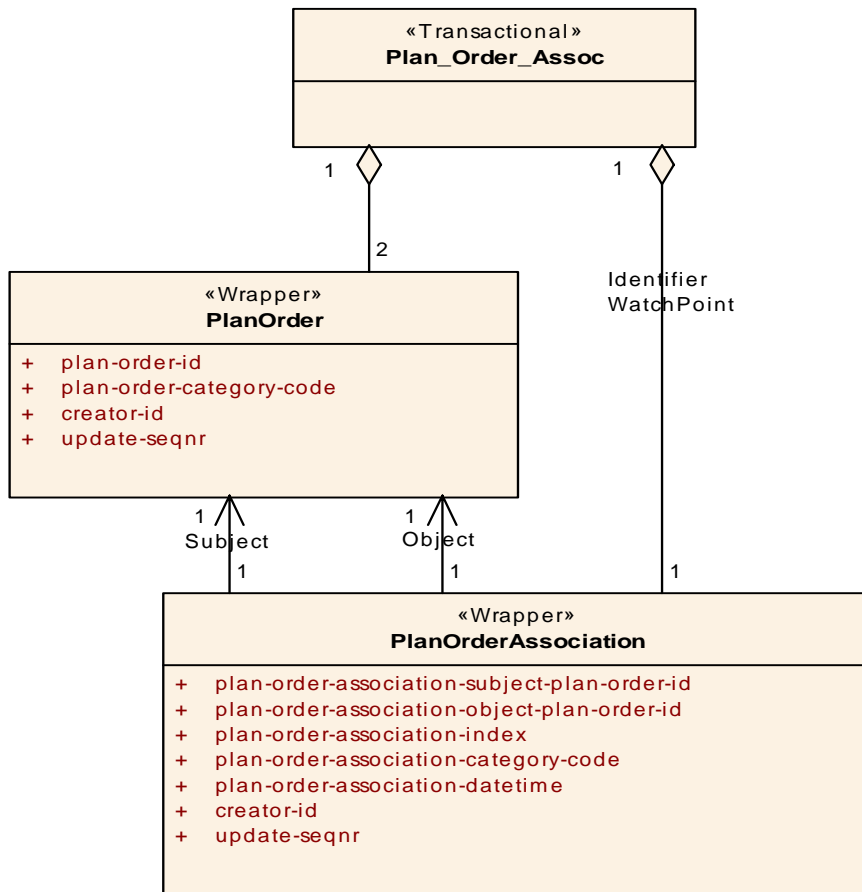


Figure 10.178 - Plan_Order_Assoc

10.15.3 Plan_Order_Component

The Plan_Order_Component Transactional Artifact captures information about the structural elements of a specific plan-order. It represents the parts of a plan or order, such as headers, paragraphs, or annexes.

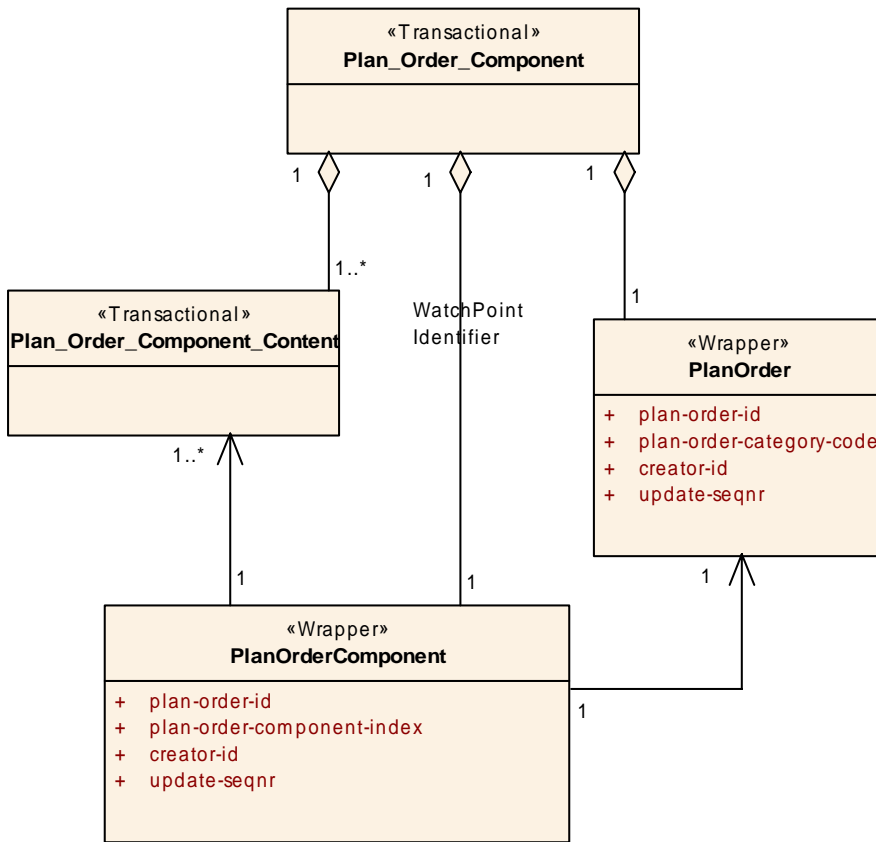


Figure 10.179 - Plan_Order_Component

10.15.4 Plan_Order_Component_Content

The Plan_Order_Component_Content Transactional Artifact captures information about the substantive subject matter (content) of a specific plan-order-component.

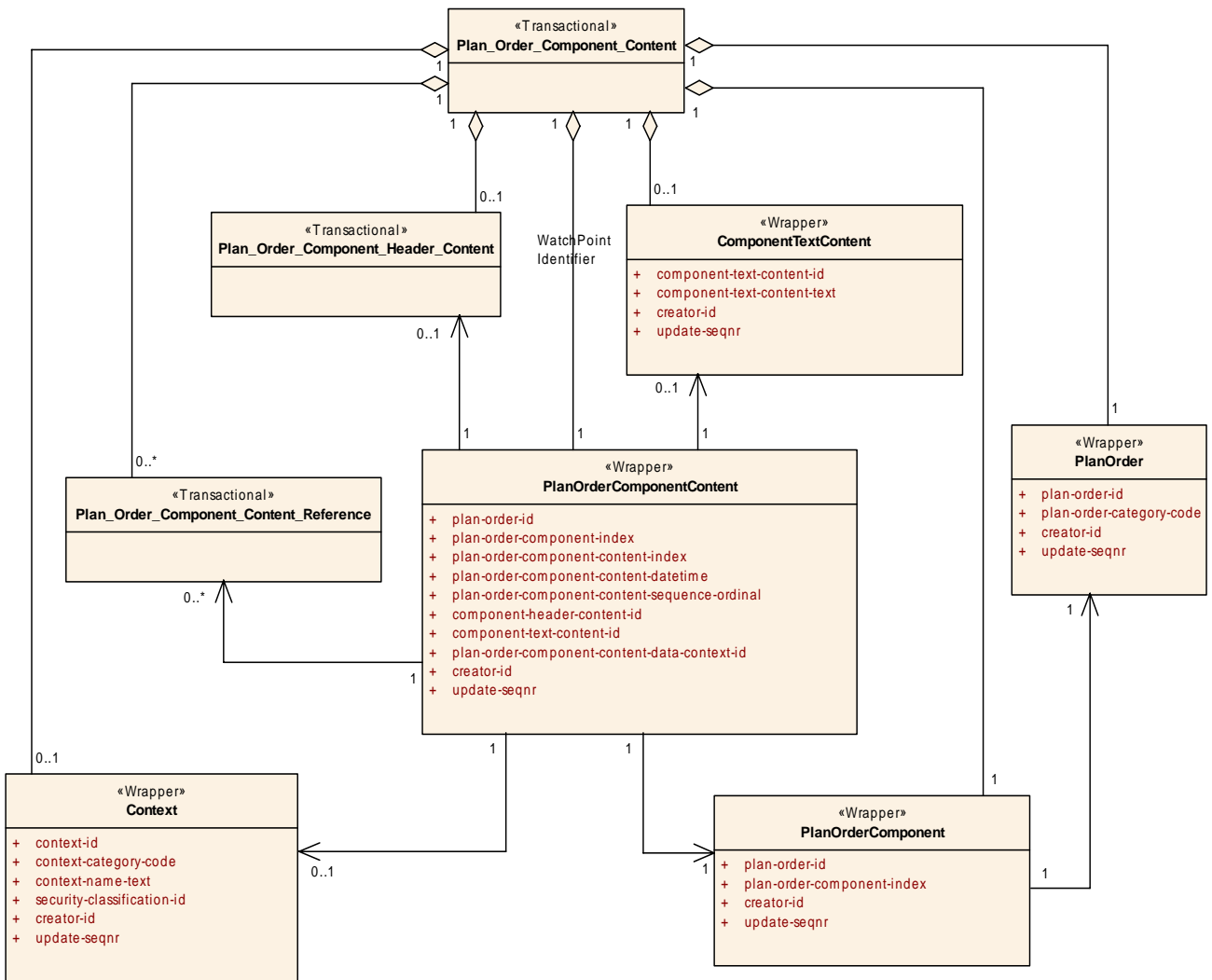


Figure 10.180 - Plan_Order_Component_Content

10.15.5 Plan_Order_Component_Content_Reference

The Plan_Order_Component_Content_Reference Transactional Artifact captures information about a specific reference that applies to a specific plan-order-component.

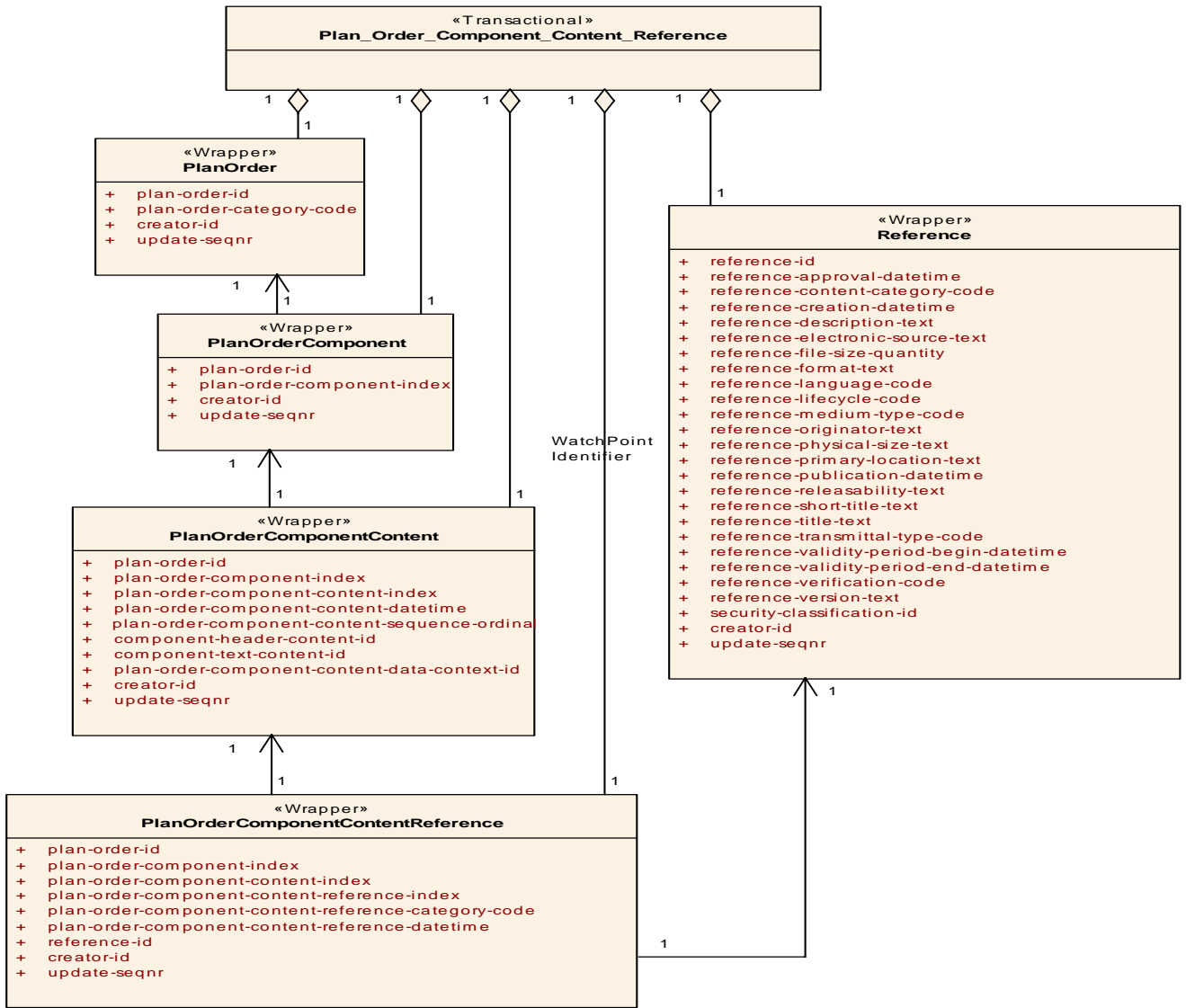


Figure 10.181 - Plan_Order_Component_Content_Reference

10.15.6 Plan_Order_Component_Header_Content

The Plan_Order_Component_Header_Content Transactional Artifact captures information about introductory subject matter intended to identify an element of a document.

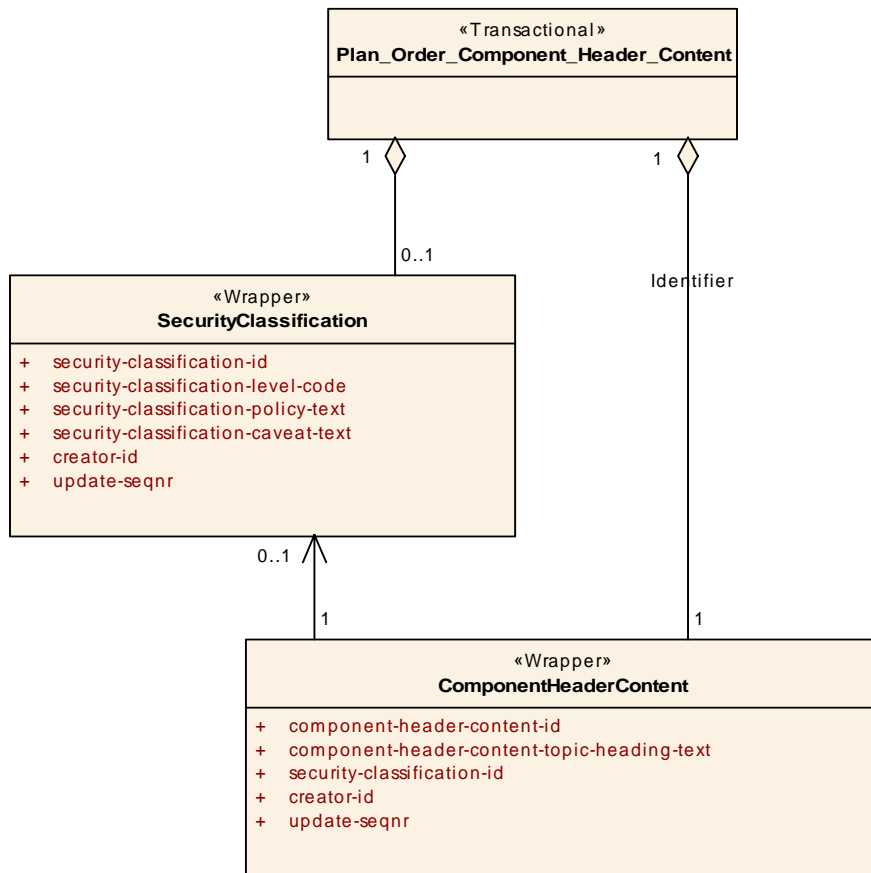


Figure 10.182 - Plan_Order_Component_Header_Content

10.15.7 Plan_Order_Component_Structure

The Plan_Order_Component_Structure Transactional Artifact captures information about the associations between specific pairs of plan-order-components to represent the hierarchical structure of a plan or order, such as is parent of.

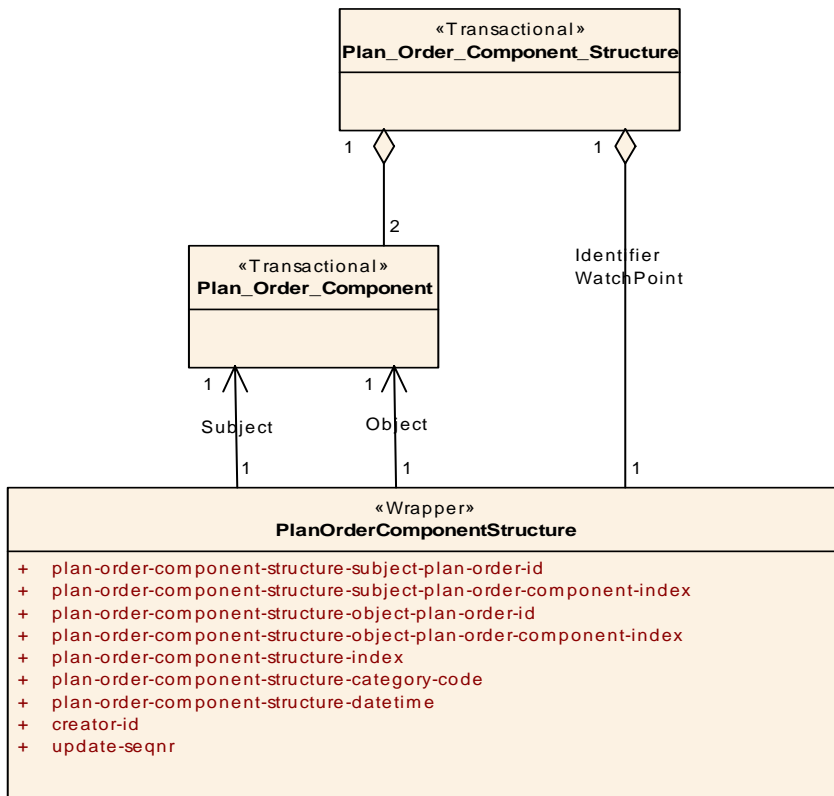


Figure 10.183 - Plan_Order_Component_Structure

10.15.8 Plan_Order_Distribution

The Plan_Order_Distribution Transactional Artifact captures information about the intended recipient organization of a specific plan-order. It conveys the reason that the plan or order was sent to the organization, which includes: for information or for execution.

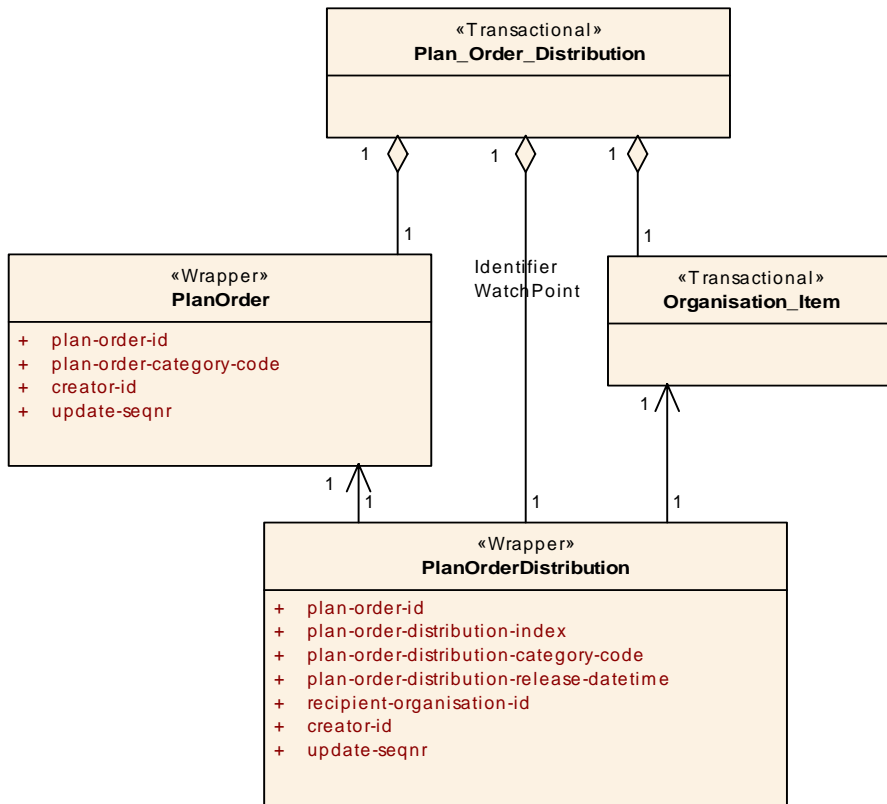


Figure 10.184 - Plan_Order_Distribution

10.15.9 Plan_Order_Distribution_Acknowledgement

The Plan_Order_Distribution_Acknowledgement Transactional Artifact captures information about the receipt by the intended recipient organization of a specific plan-order, which includes: Acknowledged, Read, and Received.

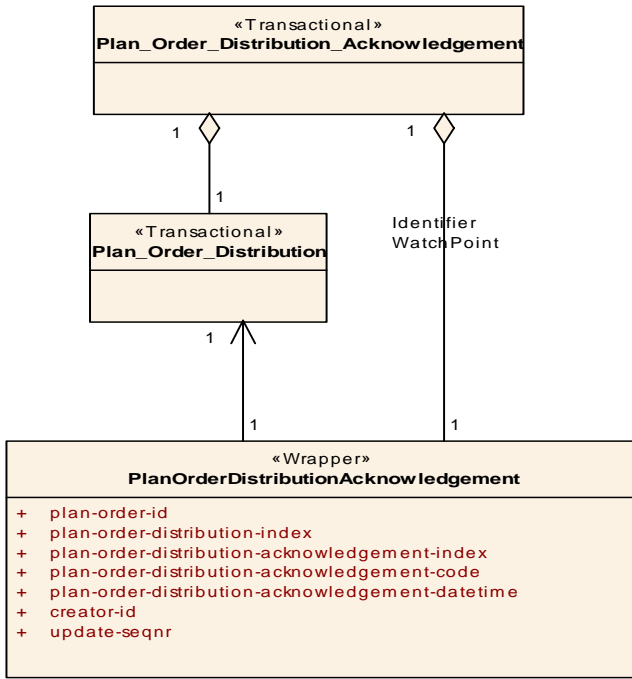


Figure 10.185 - Plan_Order_Distribution_Acknowledgement

10.15.10 Plan_Order_Header_Content

The Plan_Order_Header_Content Transactional Artifact captures information about the introductory subject matter that applies to the entirety of a specific plan-order. Note, it specifies information about the content, not the content itself.

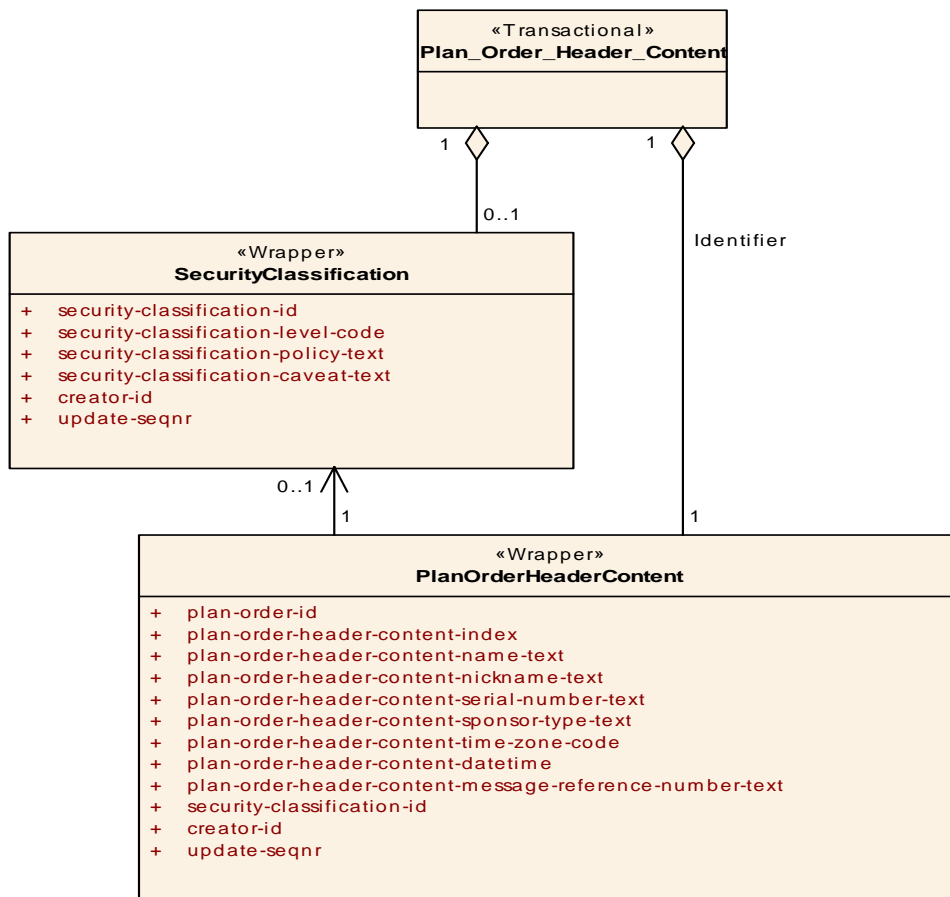


Figure 10.186 - Plan_Order_Header_Content

10.15.11 Plan_Order_Item

The Plan_Order_Item Transactional Artifact captures the information about a specific Plan (a proposal for executing a command decision or a project) or Order (a communication that conveys instructions from a superior to a subordinate).

Plan_Order_Item encapsulates transactional artifacts Plan_Order_Component and Plan_Order_Header_Content.

Plan_Order_Item is a support transactional of Transactional Artifacts

Operational_Information_Group_Plan_Order_Content and Organisation_Plan_Order_Assoc.

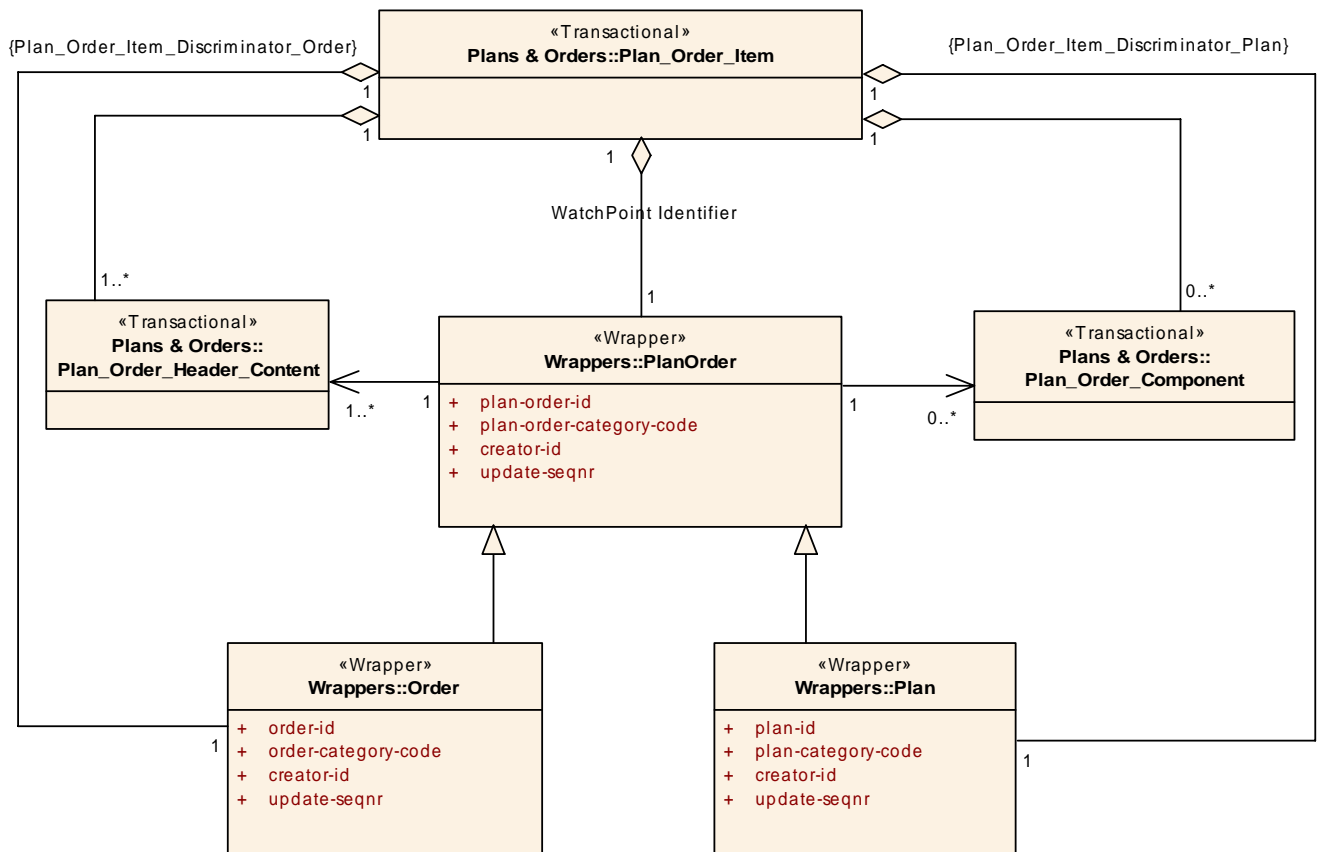


Figure 10.187 - Plan_Order_Item

10.15.12 Plan_Status

The Plan_Status Transactional Artifact captures information about the condition of a specific Plan, in terms of Complete or Not Complete.

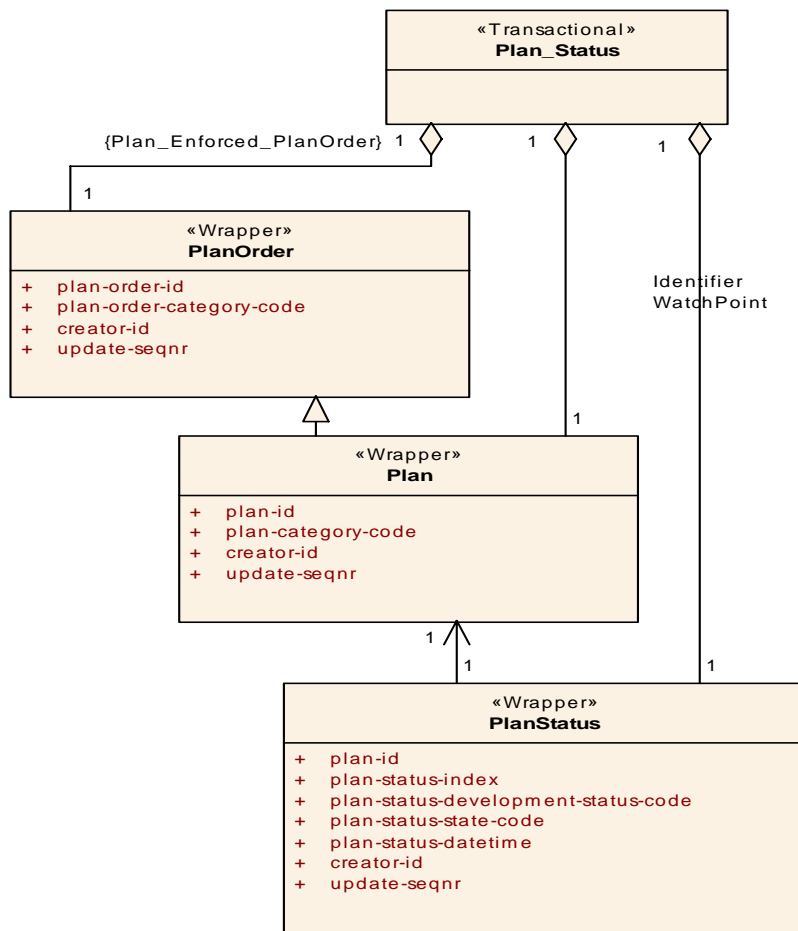


Figure 10.188 - Plan_Status

10.16 Report

The Report package presents data patterns that provide a mechanism for capturing amplifying information about reports, such as their source, effective and reporting times and degree of validity of the reported information.

10.16.1 Absolute_Reporting_Data

The Absolute_Reporting_Data Transactional Artifact captures information about an individual report, which generally relate to dynamic data (e.g., location, status, holdings, associations and classification). The amplifying information captured includes the identity of the reporting organization, the time of the report (expressed in a date-time that is referenced to Universal Time), and its credibility, and will also include any reference information that has been associated with the report.

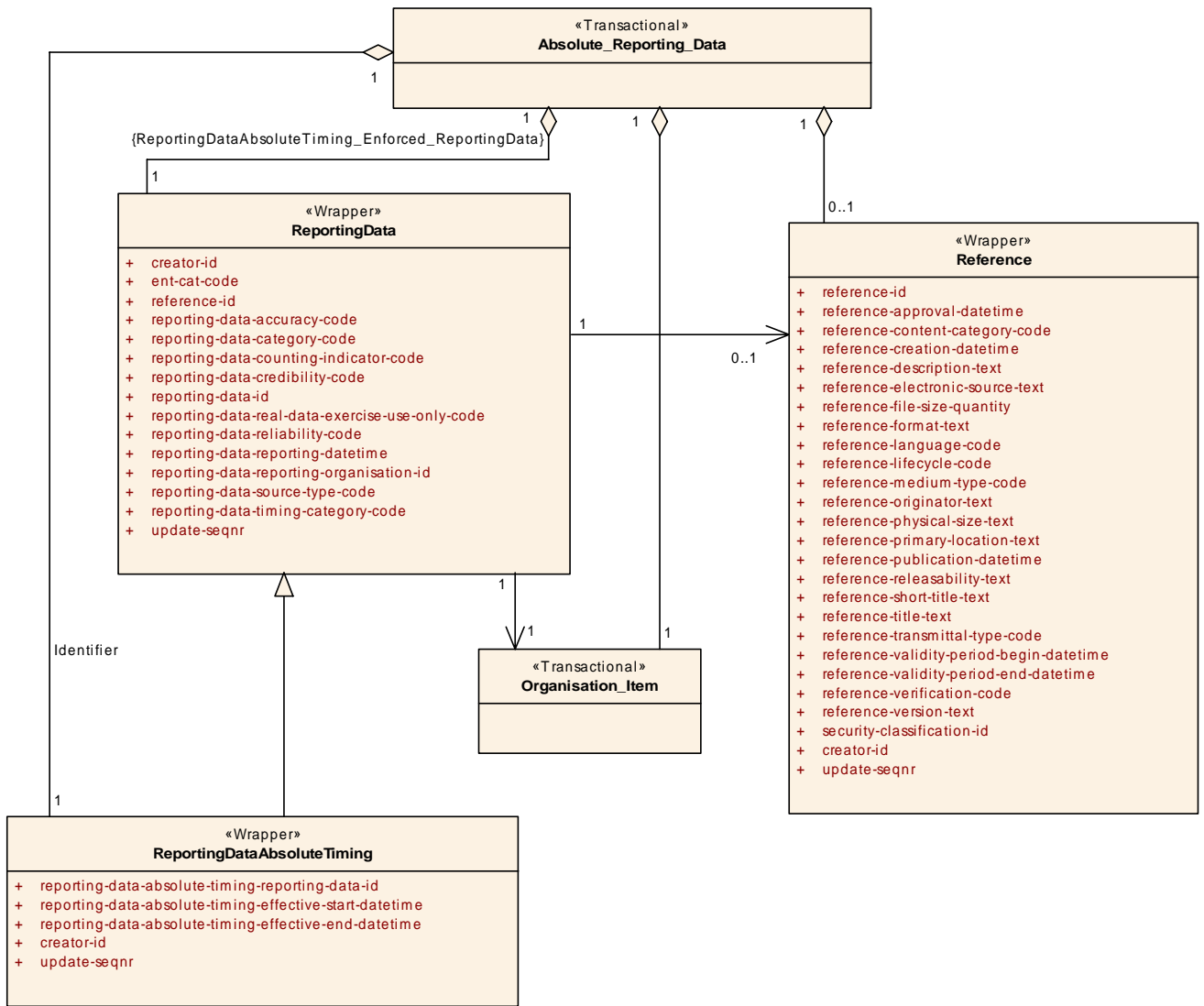


Figure 10.189 - Absolute_Reporting_Data

10.16.2 Relative_Reporting_Data

The Relative_Reporting_Data Transactional Artifact captures information about an individual report, which generally relate to dynamic data (e.g. location, status, holdings, associations and classification). The amplifying information captured includes the identity of the reporting organization, the time of the report (expressed in a date-time that is referenced to a specific Action-Task), and its credibility, and will also include any reference information that has been associated with the report.

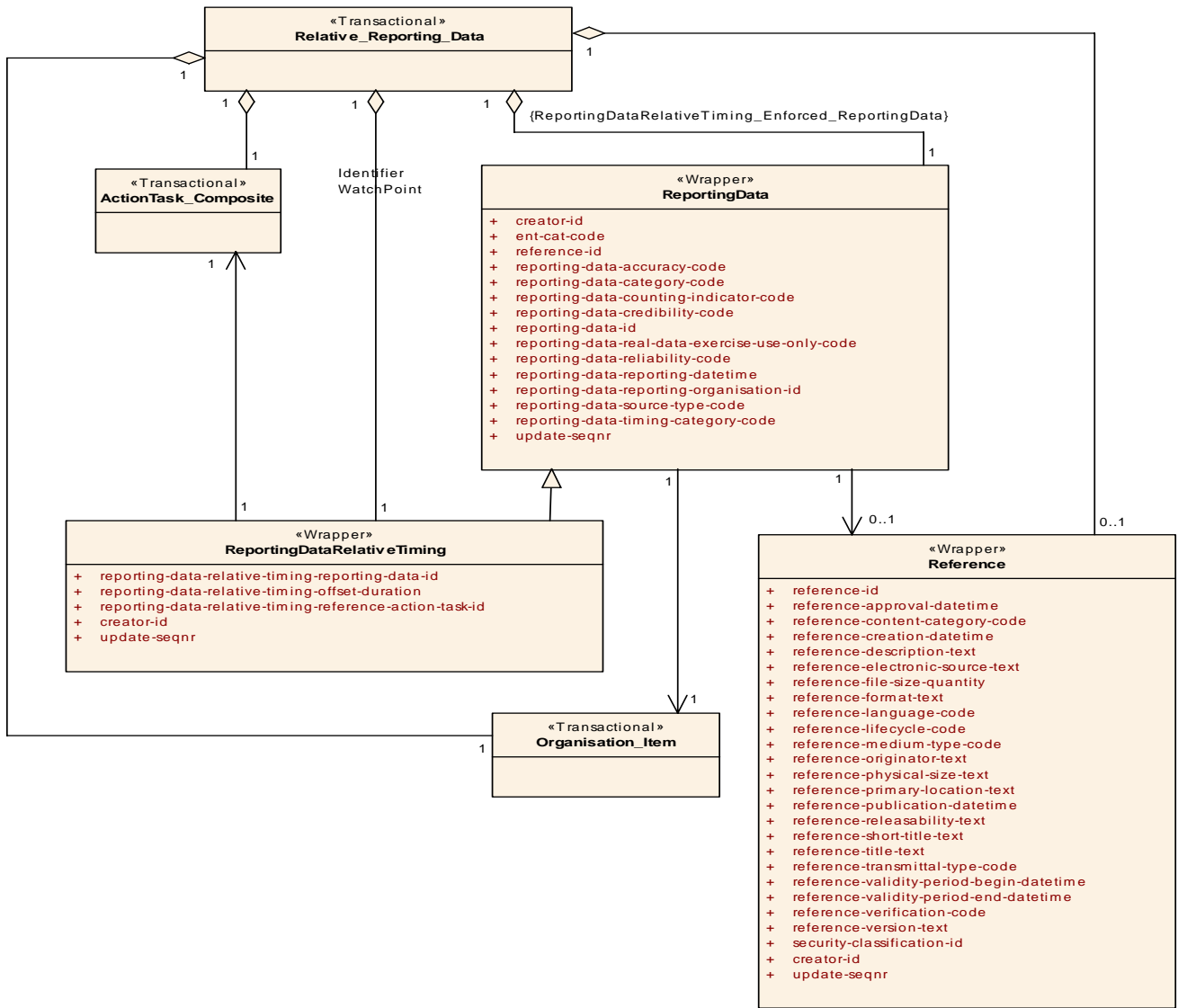


Figure 10.190 - Relative_Reporting_Data

11 Exemplar Semantics

11.1 ControlFeature_SA

The following figure provides an example for aggregate and marshal reports on control features.

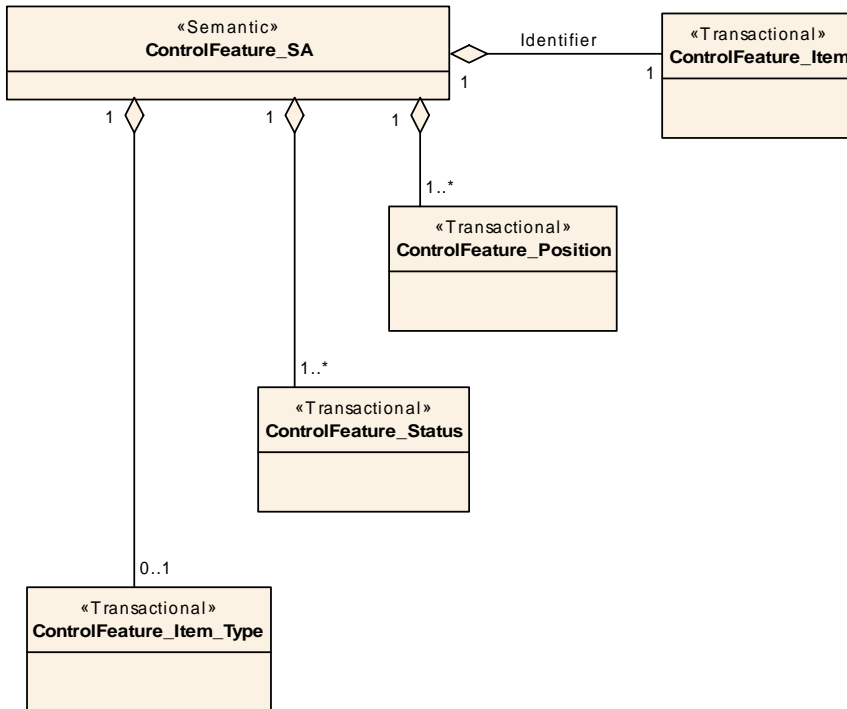


Figure 11.1 - ControlFeature_SA

11.2 Facility_SA

The following figure provides an exemplar for a aggregate and marshal reports on Facilities.

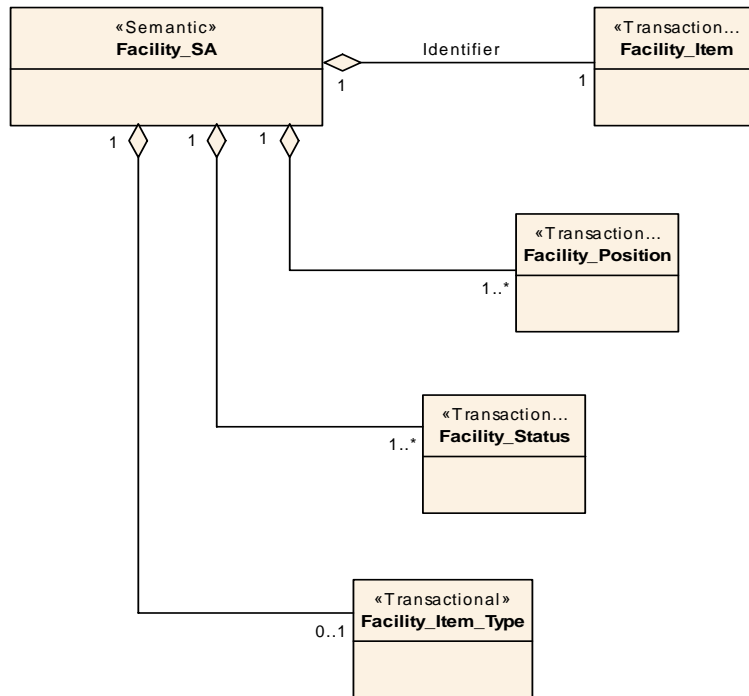


Figure 11.2 - Facility_SA

11.3 GeographicFeature_SA

The following figure provides an exemplar for an aggregate and marshal reports on geographic features.

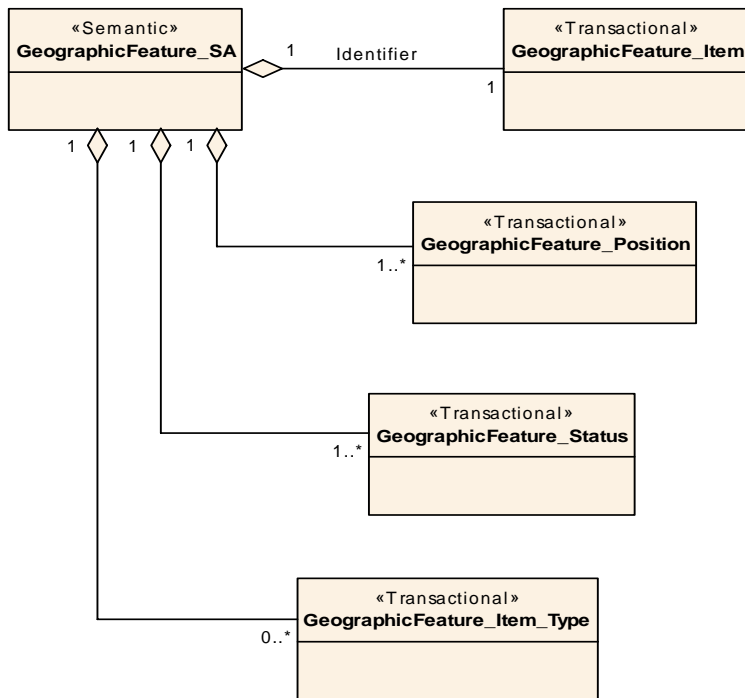


Figure 11.3 - GeographicFeature_SA

11.4 Materiel_SA

The following figure provides an exemplar for a aggregate and marshal reports on materiel.

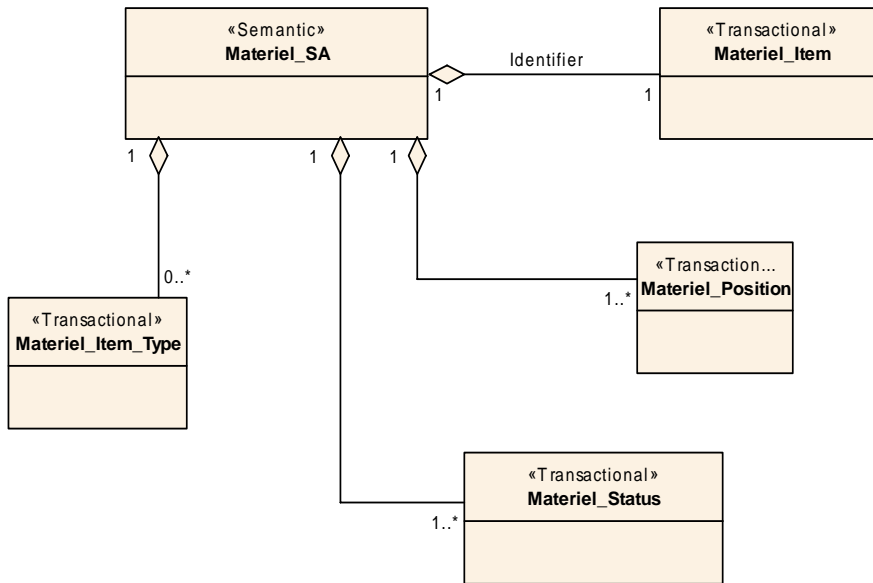


Figure 11.4 - Materiel_SA

11.5 Organisation_SA

The following figure provides an exemplar for an aggregate and marshal reports on organizations.

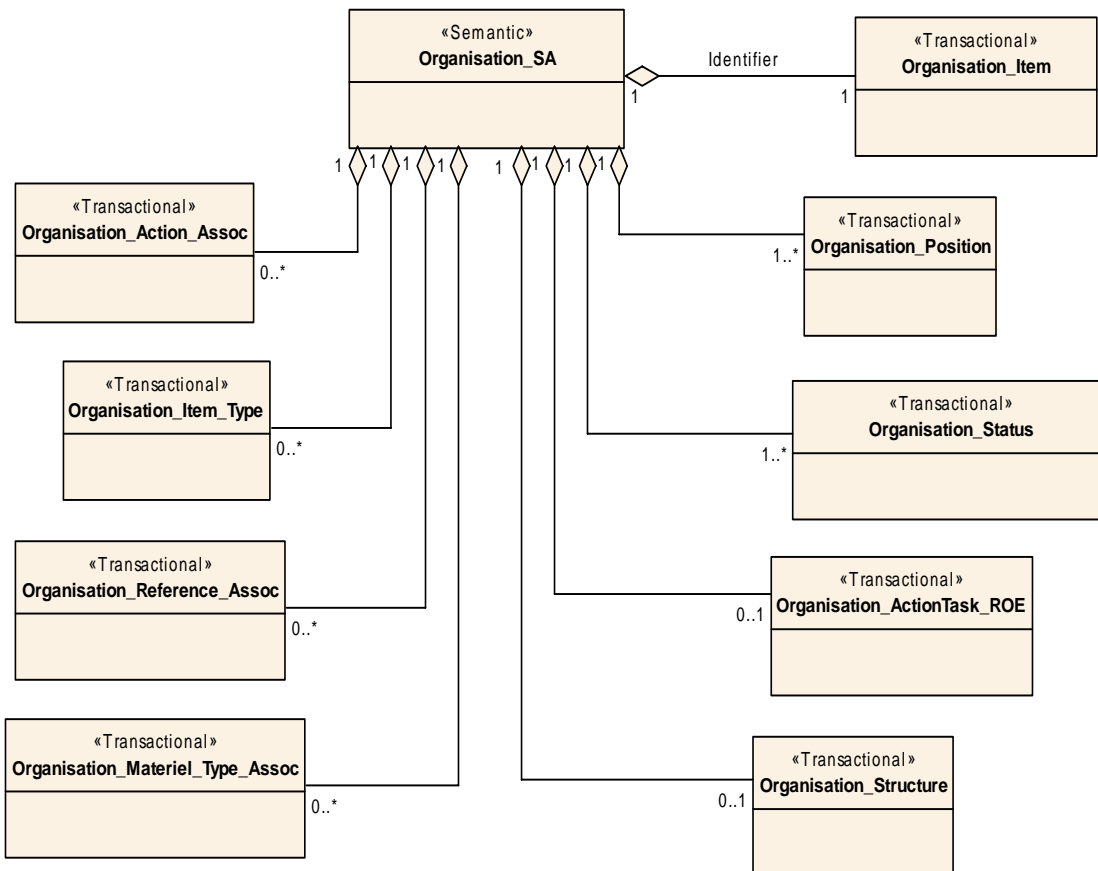


Figure 11.5 - Organisation_SA

11.6 Person_SA

The following figure provides an exemplar for a aggregate and marshal reports on persons.

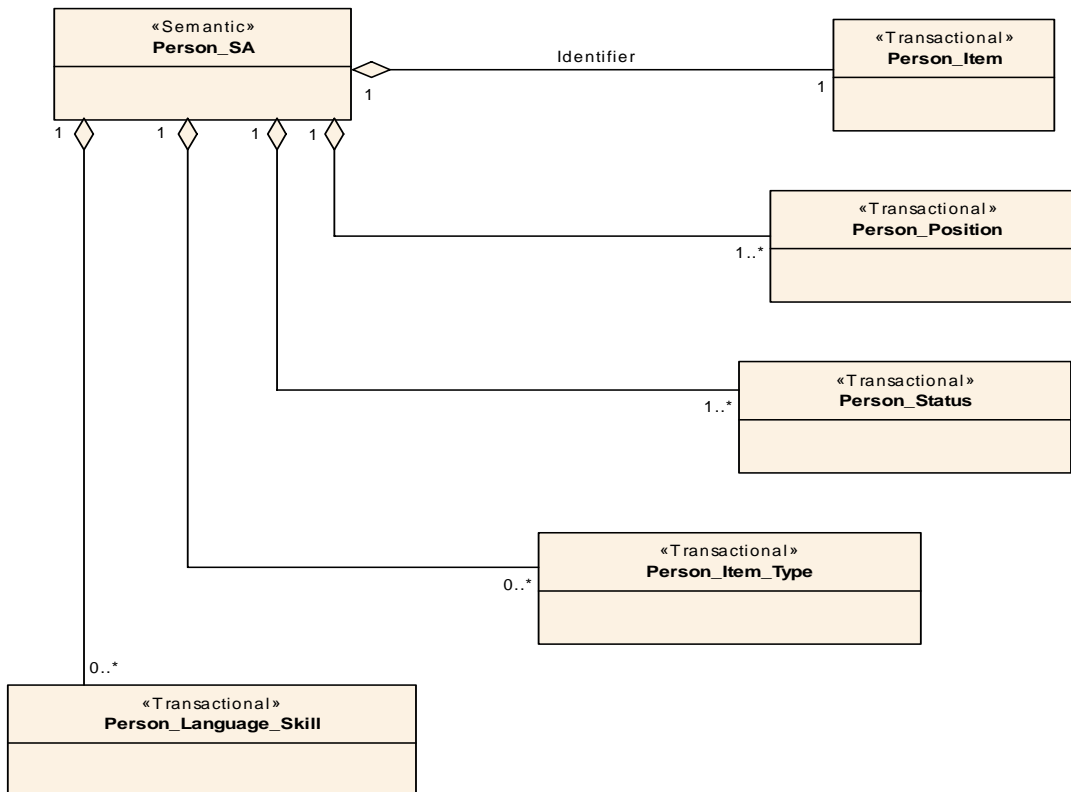


Figure 11.6 - Person_SA

Annex A

Modeling Profile Description

(normative)

A.1 Overview

The modeling approach used in this specification describes a set of reusable information patterns (building blocks) for a structured information store; in this case the JC3IEDM. The approach is intended to specify the operational policies for the composition, construction, processing and protection of information composites (or aggregates or business objects) as they are shared within and between operational nodes (e.g., systems, applications or services).

The approach encompasses the following architectural elements:

1. **Contract** – A contract represents a grouping of semantics and information flow controls which specify a formal information sharing agreement between two or more operational nodes or participants in a domain or community (e.g., Community of Interest [CoI]). Although provided and described in the approach, this element is not a normative component of this specification which seek to focus on the transactional information patterns for the JC3IEDM, the contracts and semantics are deemed the purview of the operational communities such as MIP.
2. **Semantic** – A semantic represents the build policy for an information composite or data composite that is specified as meaningful to participants (applications, systems and users) in a particular domain or community. Only exemplar semantics are provided in this submission as guidance to the design and development communities.
3. **Transactional** - A Transactional represent the build policy for a reusable information building blocks, often realized as business objects comprising the community logical data model, for which there is likely also an underlying information or data store; they maintain the referential and data integrity of that store. Transactionals form the core of this specification.
4. **Wrapper** - A Wrapper directly maps to a data instance (e.g., row of data in a database application) in the logical data model and the physical data model.
5. **Entity** - An Entity is a Class mapping directly to the Physical Model specification for the underlying datastore.

Figure A.1 illustrates the proposed relationship between four architectural views of the UML Profile for DODAF, MODAF, NAF and DNDAF (OV-2, OV-3, OV-7, and SV-11). These views combine to describe the flow and language of communication within the enterprise, operational environment of system depicted by an architectural model.

The OV-2 identifies the flows of Resources (material, energy, organization, services, and/or information) between operational nodes which fall into the context of the architectural model. The flow of these need resources are realized on a “needline” between two or more operational nodes. Information flows realize the exchange of information-composites, which represent the aggregation of information and data elements described in the OV-7s and SV-11s.

The OV-3 characterizes the flow of the information composites by specifying frequency, timeliness, safeguards, quality, etc. for each information flow (Information Exchange Requirements [IERs]).

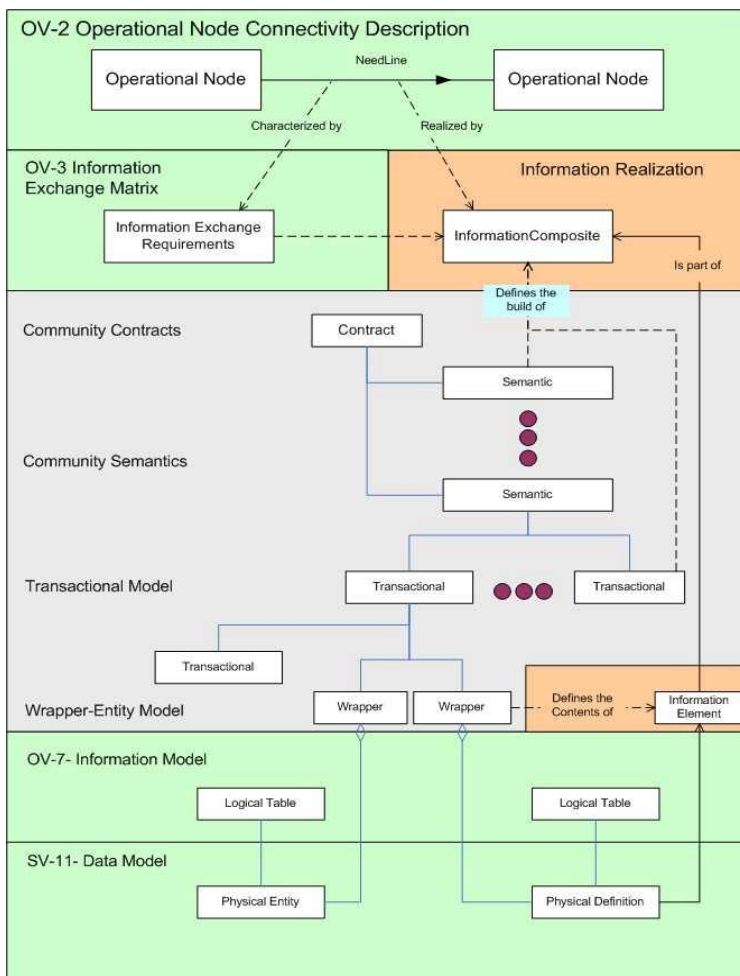


Figure A.1 - Alignment to the UPDM

The modeling approach aligns information exchange requirement or information flows (OV3) through to the logical and physical information definitions (OV-7 and SV-11 respectively). The models establish policies (or rules) describing the logical construction of composite information from the information and data elements defined in the OV-7s and SV-11s. Each subtended element is built into a construction plan to systematically provide the information specified on the needline. The models are intended to provide traceability between the IERs and the application logic used to combine information and data elements of the information stores.

The contracts group the semantics of the community into information sharing agreements. Providing a separation between the agreements and semantically complete information-composites makes the semantics architecturally reusable components.

Each contract (information sharing agreement or ontological commitment) comprises one or more semantics (i.e., a COI exchange pattern with a defined meaning and purpose), which are specified by the participants to define information of relevance to their community. Each semantic is composed of one or more “Transactionals,” which specify the logical information elements to be exchanged and how they are combined to meet the semantic requirements of the community.

The “Wrappers” represent the bridge between logical element of the transactional patterns and the physical data definitions SV-11, the Data Model. At the semantic, transactional, and wrapper levels there may also be formal domain rules and constraints that must be honoured by the parties to the contract.

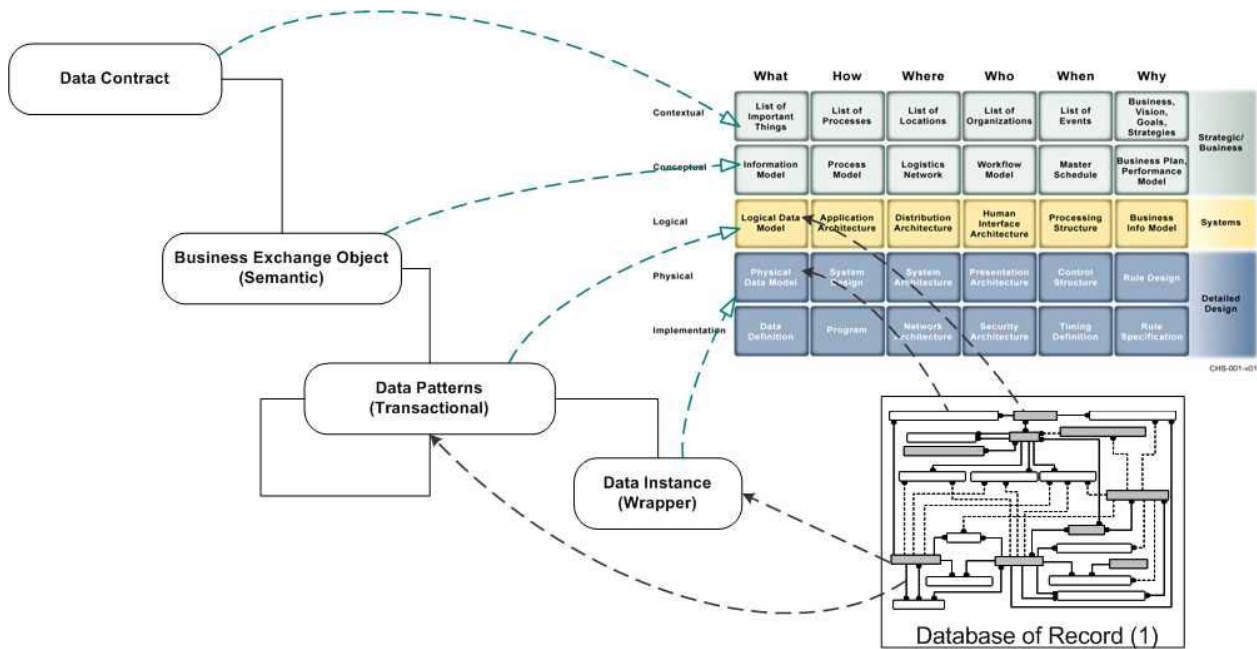


Figure A.2 - Alignment to the Zachman Framework

A.1.1 Other Architecture Frameworks

A separate alignment can be presented for other architectural frameworks. However, with the OMG's current focus on the UML Profile for DODAF and MODAF it seemed reasonable to present the architectural alignment to the related frameworks (e.g., DODAF, MODAF, NAF, DNDAF, PSAF and others). As an example the alignment to the Zachman Framework is depicted in Figure 2 (above).

A.1.2 Model Extensibility

Later in the document the modeling approach will be extended to model domain filters and attribution which extend the policy models for information tagged with security, Quality of service and other information considerations.

A.1.3 Modeling Objectives

The following objectives are critical to developing the concepts for policy based information interoperability:

1. A modeling profile based on UML;
2. Explicitly capture, as part of architecture, the business rules for the export, transform and load processes, which are typically embedded in middleware applications. These include:
 - a. Community semantics,

- b. Data store transactions,
 - c. Transformations
 - d. Data suppression filters, and
 - e. Domain business rules.
3. Assure that the concepts captured in the model enabled Model Driven Architecture (MDA) transformations to executable policies, which were alterable in the operational environment;
 4. Make the models useful and meaningful to stakeholders and users;
 5. Alignment with evolving architecture frameworks;
 6. Provide full traceability to requirements; and
 7. Design for change.

In an object environment (e.g., OO DB or object layer), support objects can be used (with a single existence) by multiple information-composites (semantics and transactions) providing a highly efficient use of information. Traditional approaches use a single information instance per composite causing increase memory and processing (e.g., data synchronization). Using the multi-use approach enables “event-driven global update.” A single data change (new instance of data/information) can initiate the build and release of all transactionals and semantics in which the element is contained.

Within the context of data, information and knowledge management, ontology is defined as an information model describing a set of concepts within a domain of interest and the relationships between those concepts. This specification describes a set of information exchange concepts for ECM situational awareness and collaborative planning. The IEDM describes a set of information and knowledge patterns based on JC3IEDM-compliant transactions and information elements (i.e., data entities).

The Information patterns (Chapter 10 and 11) describe:

- Individual information elements;
- Classes: sets, collections, or types of objects;
- Attributes: properties, features, characteristics, or parameters;
- Relations: ways that objects can be related to one another, for data storage and in the construction of semantics (meaningful data object: this specification); and
- Events (watch points): changes to the data environment (e.g., attributes or relations) that trigger an exchange of information.

The specification describes a set of policies for constructing and interpreting information exchanges using reusable architectural components (information building blocks) aligned directly to commonly used architecture frameworks aligned directly to commonly used architecture frameworks as illustrated in Figure A.1 and Figure A.2.

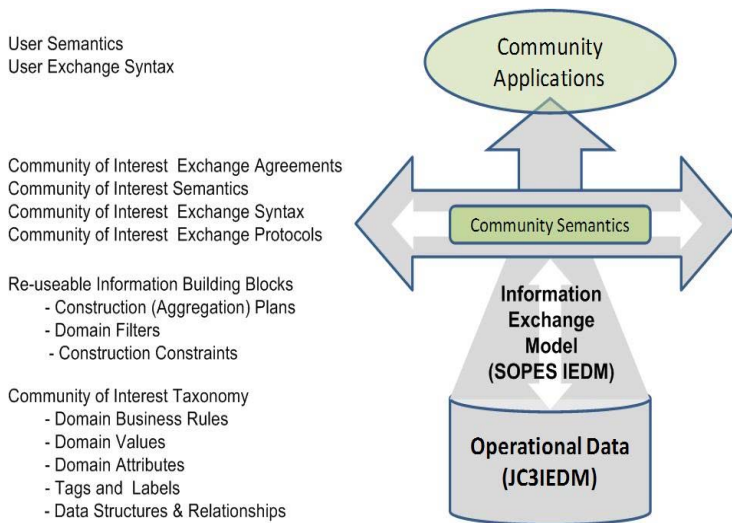


Figure A.3 - SOPES IEDM Scope

A.1.4 Modeling Concept

The class models describe the policies (or rules) for processing information datasets; and aligning the datasets to the underlying data schemas. The objective of the models is three fold: 1) explicitly capture these key business rules as part the enterprise and System architectures; 2) retain corporate knowledge and understanding; and 3) separate the business rules from the underlying middleware application. Meeting these objectives, this modeling approach delivers auditable systems with increased interoperability, portability, and assurance.

As illustrated in Figure A.3, the semantics, transactionals and wrappers document a set of policies for the processing of reusable informational building blocks that align the information Exchange Requirements specified in an information exchange requirements to the information schemas underlying the operational environment.

A “Semantic” represents a set of policies for the construction or marshalling of information objects (i.e., a dataset) that is meaningful to the community (e.g., applications, systems, and users that form the context of architecture Model). The semantic is the uppermost concept in the ontological structure. When enforced by a system or application, a semantic realizes a complete information object (e.g., message payload) that provides a clear and consistent meaning for the community.

A “Transactional” specifies the policy (or rules) for the construction or marshalling of reusable information sets (e.g., realized as information objects) derived from the underlying logical model and associated physical data store(s). These plans form a set of informational building blocks that encapsulate semantics of the stores and set the rules for semantic completeness. The Transactionals also assure a semantically consistent treatment of information as it transitions in and out of the data store.

The term “Transactional” was adopted to align its core concepts with that of a database transaction - a concept well understood by the data and information management communities. The base transactionals would encompass the referential and data integrity of the datastore(s). The transactions are combined to complete the semantic requirements of the community. When enforced by information systems and applications the transactionals realize composite information sets needed to complete one or more semantics.

The “Wrappers” form the foundation of the modeling approach. The wrappers are a logical representation of instances of information elements that can be held within a data store. Each wrapper represents a single instance (or row of data) of data from the underlying store.

A.1.5 Realization of Information

The models describe the policy (steps in a process) for systematically constructing or processing fused information sets (semantics). By definition the semantics ensure that the content exchange conforms to agreed community information patterns or semantics. It is important to understand that the models represent the specification for the aggregation or marshalling information - it is not the information carried on the needline; the actual information carried is referred to as an information-composite.

Definitions:

- Construction or Build: The process of aggregating information and data elements into their composite structures.
- Marshalling: The process of de-aggregating information composites and storing the information and data elements in their specified information or data stores.

A.1.6 Pattern Reuse

The modeling promotes the reuse of subtended elements and composites:

1. An InformationComposite at the Semantic level can be reused to fulfill multiple commitments (Contracts), which use different messaging standards (e.g., National ADatP-3, OTH-Gold, MIP PDU).
2. An InformationComposite at the transactional level can be reused within multiple transactional and semantics.
3. An informationElement can be reused in multiple InformationComposites such that a single change (i.e., new data) cascades through each of the informationComposites enclosing the element; resulting in the updating of every contract and semantic holding the data.

The model approach supports derive information patterns that enable concepts like event driven global update of all InformationComposite enclosing single instances of data enclose in well specified semantics.

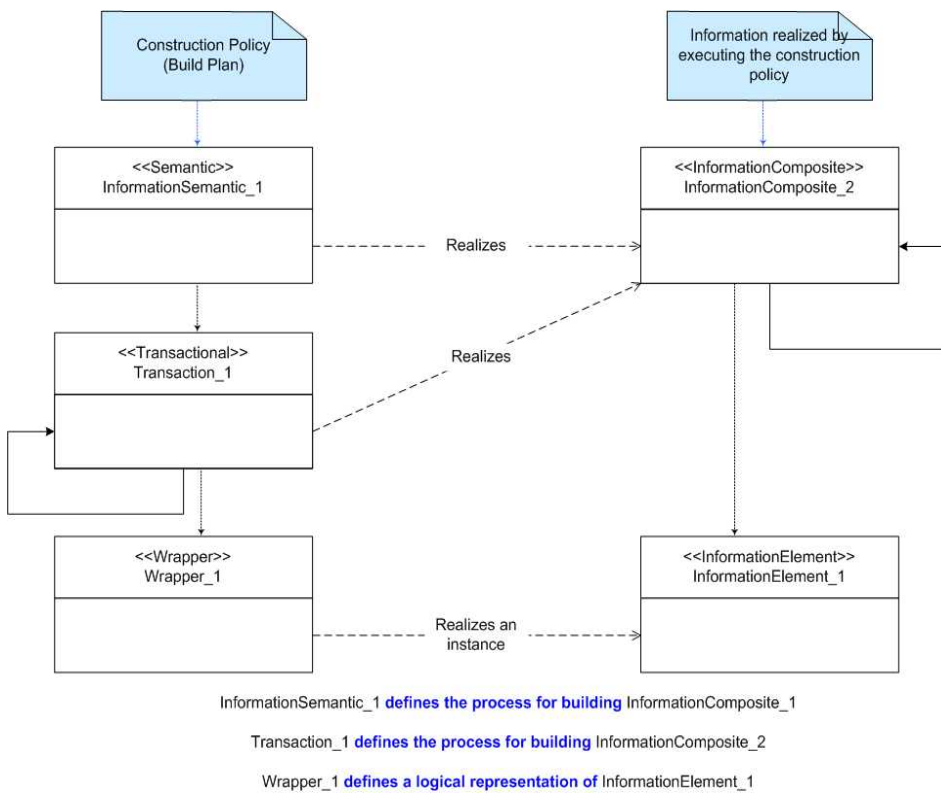


Figure A.4 - Realization of Information

A.1.7 Modeling Elements

Figure A.5 illustrates the basic modeling elements used in the models and the meanings applied to them. It is evident from the limited and standard set of modeling elements that the core concepts are not overly complicated and supportive of a broad community of practitioners.

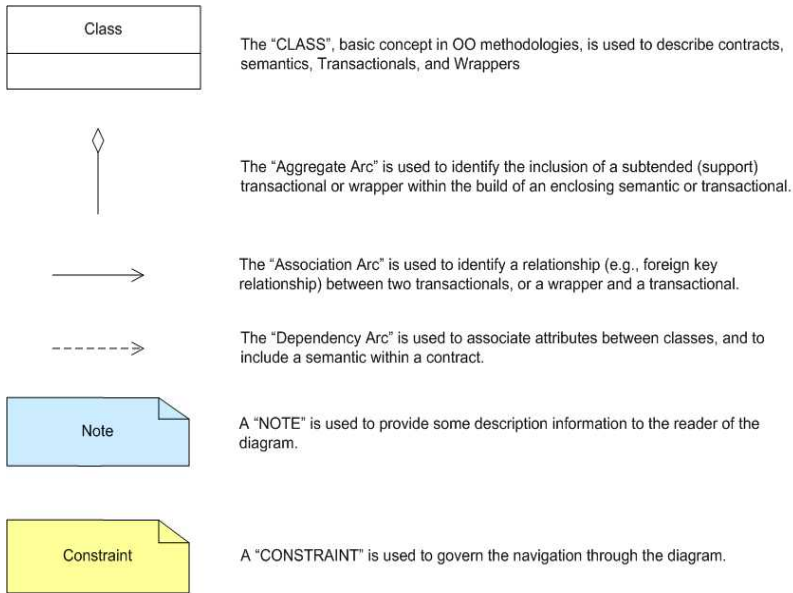


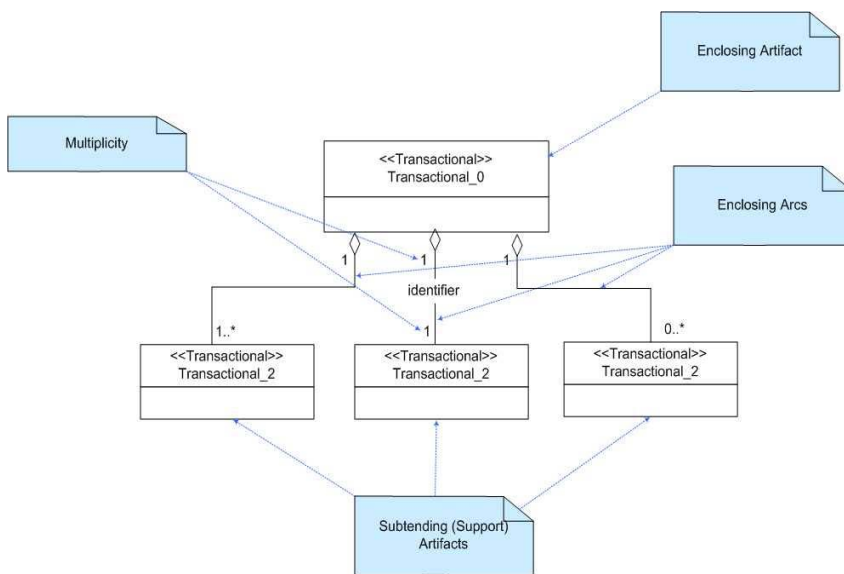
Figure A.5 - Basic Modeling Elements

A.1.7.1 Class Diagram

The modeling approach uses UML Class Diagrams to identify all the subtended Classes of a Semantic or Transactional. Those stereotyped as "Transactional" are decomposed on a secondary class diagram. This modeling style aids in the readability of the models and simplifies each model element. Typically, the "Diagram Name" matches the "Enclosing Class" name whether a Contract, Semantic or a Transactional. Again this is for readability and publishing of the model.

A.1.7.2 Classes

Core modeling concepts: contracts, semantic, transactions and wrappers are included in the class diagrams as class stereotypes (Figure A.6).



Reading the Diagram:
 InformationComposite **defined by** Transactional_0 **includes information defined by** Transactional_1 (mandatory, provide all instances), Transactional_2 (mandatory, provide current instance) and Transactional_3 (optional, provide all available instances).

Figure A.6 - Modeling Elements

Navigating the arcs of the class diagrams defines the construction plans for each information aggregation (i.e., transactions and semantics).

Classes fall into two categories on each diagram:

1. Enclosing Class
2. Subtended (Support) Class

Each class diagram identifies policies (rules) for building reusable information composites in the runtime environment.

A.1.7.3 Enclosing Class

A.1.7.3.1 Overview

The “Enclosing Class” is the focus of a diagram and encapsulates the policies associated with the aggregation of information at runtime. Each Enclosing Classes realizes an object that encloses the aggregate of information from each of its subtended classes.

On the diagram, the enclosing class is the one to which the white diamond symbol on the association line is attached. The modeling style has one enclosing class on each diagram, which typically shares the same name and the diagram title.

In a runtime environment, semantics and transactions are only instantiated in response to a data event, and only persist for the period needed to construct or marshal the information-composites specified. The information aggregates, enclosing the information element / data event, are built in response to that data event.

Semantic and transactionals do persist their reference and policy data patterns comprising the community semantics. This informs the environment of the information instances active in the particular operational domain. These elements are persisted until explicitly removed from the systems' or applications' domain. This concept of persistence applies to both the semantic and transactional objects.

The information or leaf-node elements of the information patterns are persisted in the operational domain.

A.1.7.3.2 Identifying Class

In each diagram, there exists one and only one subtended class that is labeled as the "Identifier." The Identifier indicates that the class on the labeled aggregation holds data that identifies which instance data is included in the build or aggregation. This information typically includes Database Keys or Unique Identifiers of some venue.

A.1.7.3.3 Subtended Class

The "Subtended (Support) Class" represents those classes, which are included within the build plan of the "Enclosing Class." Each subtended class is linked to the enclosing class through an enclosing aggregation arc. Subtended classes can be Transactionals or Wrappers.

A.1.7.4 Containment (Aggregation) Arc

The aggregation arc is read with inverse logic. In the information (/data) environment - the enclosing Class only exists if the mandatory subtended Classes exist. UML traditionalists would read the arc in the opposite direction. However, the models describe a build or construction policy for aggregated information sets, which require the existence of their subtended (support) classes to meet their semantic rules.

If mandatory subtended objects (identified through its multiplicity) do not exist, then the enclosing object cannot form or build and the policy fails. If optional subtended objects (identified through its multiplicity) do not exist, then the enclosing object builds with the information held by the existing subtended object.

As illustrated in Figure A.7, a single subtended element can be contained by multiple enclosing classes. This specifies that a change in that subtended object cause both enclosing objects to build at runtime. By cascading this concept, the models establish policy for event driven global update capability - one data event cause all semantics enclosing that subtended object to build and, if meeting there semantic requirements, and be released and fulfill ontological commitments of the participating communities.

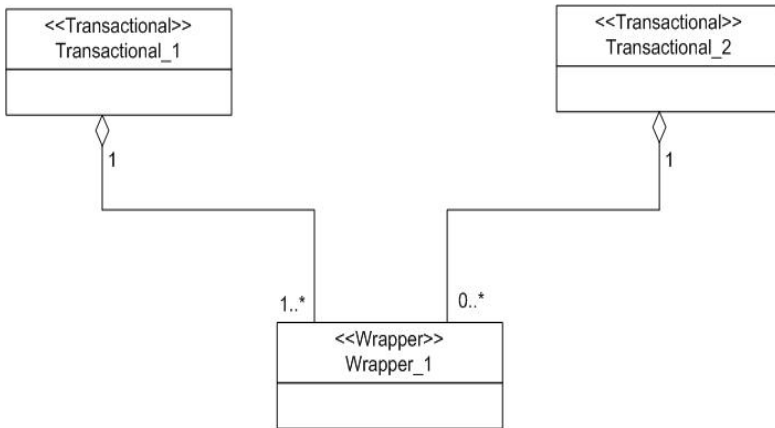


Figure A.7 - Single Instance Data

A.1.7.5 Dependency Arc

The dependency arc is used in the contract specification to identify the relationship between the contract and the semantics, where a change in the semantic affects the semantics of the contract - resulting in the exchange of information. The arrow representing a dependency specifies the direction of a relationship, not the direction of a process.

A.1.7.5.1 Association

Navigable associations indicate that there is a relationship present between the associated entities in the underlying data store. Where an association is made between a Wrapper class and a Transactional class it is understood that the relationship exists between the Wrapper and the Identifier of the Transactional class.

A.1.7.5.2 Identifier

There exists on and only one “identifier” on each semantic or transactional diagram. The “identifier” identifies the subtended class that holds data elements needed for the construction of semantically complete information composite. This class would contain, as a minimum, the base Global Unique Identifier (e.g., Database Key, foreign keys or unique identifier) that would differentiate which transactional or wrappers (information element instances) are included in the construction of the composite (e.g., foreign key relationships).

A.1.7.5.3 Multiplicity

Multiplicity is presented on the aggregations to identify:

1. The optionality of the subtended class;
2. The number of information instances to be included in the construction of the information composite specified by the composite class (e.g., transactional or semantic). The multiplicity of the composite class is always “1.”

Table A.2 - Multiplicity

Multiplicity Indicators		
Indicator	Meaning	
0..1	Zero or one	Optional
1	One only	Mandatory
0..*	Zero or more	Optional
1..*	One or more	Mandatory
0..n	Zero to n (where n > 1)	Optional
1..n	One to n (where n > 1)	Mandatory

A.1.7.6 Constraint

The Constraints, Figure A.8, govern the construction for the composite information object. There are three areas where the modeling includes explicit constraints:

1. Filter constraint is used selectively include or exclude information instances based on specific domain value instances at runtime.
2. Navigation constraint is used to constrain the inclusion of branches of the semantic tree based in specific domain value instances at runtime. Navigation constraints are primarily used when dealing with generalizations in the underlying data model (e.g., to select a specific subtype). The use of variable based constraints that apply only at runtime enables the selection of the specialization at runtime - allowing for variations in the semantic based on context.
3. Domain Rules are used to govern the allowable combinations of domain values in the underlying datastore (not illustrated). Domain rules can be contained within a single wrapper (entity / table) or cross tables. Domain rules are captures within the annotations of the classes.

Constraints are modeled in Object Constraint Language (OCL). In the future constraint definitions may be modeled using the structured English or Semantic Business Vocabulary and Rules (SBVR).

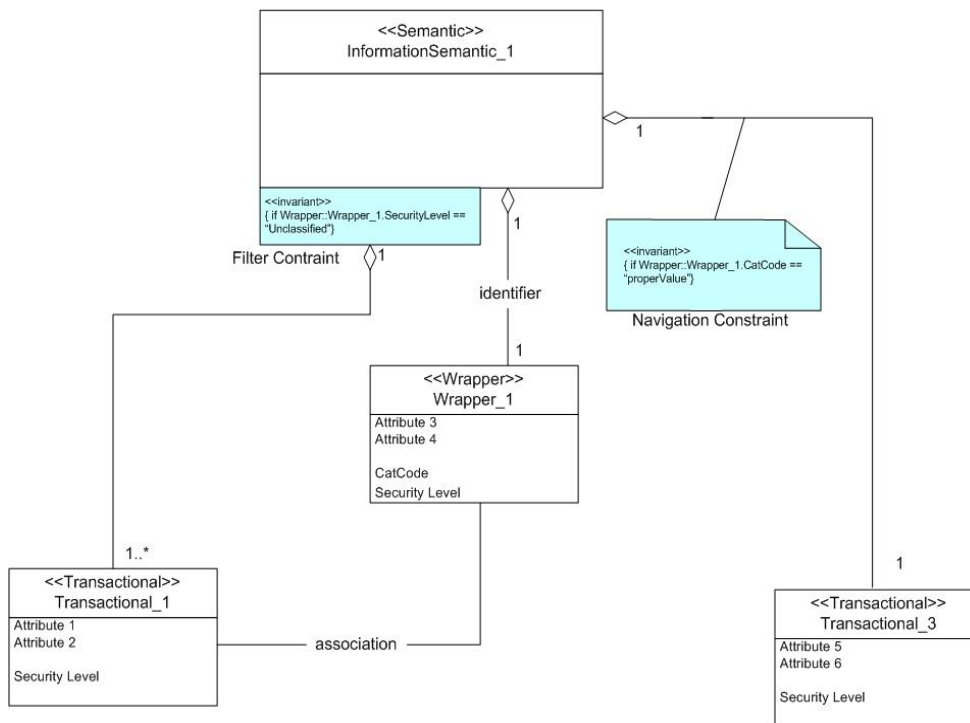


Figure A.8 - Constraints

A.1.7.7 Tagged Value

A tagged value is a combination of a tag and a value that gives supplementary information that is attached to a model element. A tagged value can be used to add properties to any model elements and can be applied to a model element or a stereotype. These tags are used to identify to the implementer specific information about the design pattern not carried with the attributes of the runtime object.

The tagged values used in the model include:

1. isIdentifier identifies the start point for the build of an information composite or artifact. There exists one “identifier” per enclosing class.
2. isWatchPoint both identifies the start point for the construction of the semantic contained in the model and identifies to the runtime what triggers the build of a semantic (data change in the subtended object); this tagged value, is a Boolean and assigned to an aggregation arc within a class model.
3. EntID holds the unique identifier for its corresponding entity in the underlying datastore. entID is associated with classes stereotyped as “Wrapper.”
4. EntName holds the name of its corresponding entity in the underlying datastore. entName is associated with classes stereotyped as “Wrapper.”

A.1.7.8 Independent Existence of Information Elements

Each subtended element within a model exists and persists independently from its enclosing classes; as a row of data can exist within a database table without the referential integrity necessary to complete a transaction or build aggregate information sets. This independent existence of information and data elements (a non-traditional interpretation of class diagrams) reflects the reality of information objects:

1. Information or data elements can exist in the environment without providing the completeness necessary for meaningful community semantics; and/or
2. Information elements may meet the requisite requirements for one community but not another.

A.2 Reading the Models

A.2.1 Semantic Construction

The first principle of the modeling approach is that the mandatory (multiplicities of 1, 1..n, 1..*) subtended must exist in the information domain as a prerequisite to the continuation of the build of enclosing transactionals. This policy ensures:

1. Semantic completeness of all aggregated data sets based on those policies; and
2. Semantic completeness of all data marshalled from received information composites (semantics must complete before information and data elements a place in information stores).

A.2.2 Marshalling a Received Data

When information is received its semantic type is identified, the information and data elements are parsed and processed. If all mandatory elements of the semantic are available – the information and data elements can be further processed as appropriate (e.g., placed in a data store).

If the semantic does not complete there are several options to the Designer: from discarding the data and reporting an error to and interactive request (from the producer of the data, from local store, from an operator, etc.) for data needed to complete the semantic. These are operational and design considerations outside the scope of this paper. In general, it is expected that at the COI-level some policy with respect to guaranteeing referential completeness would be established (e.g., a sender can only embed an information reference if it can provide the referenced data on request).

A.2.3 Class Hierarchy

The models can be developed as a top-down model starting with conceptual information sharing agreements which realize the needs of a community or needline. The models can also be developed using a bottom up approach using the data and information attributes of a legacy database application design (database schema) or through and iterative cycles of specification at each of the conceptual, logical and physical layers of the model. The intent is to provide users, analysts and developer an evolutionary method of development that yields reusable architectural components. As previously identified, the modeling constructs, illustrated in Figure A-1, include:

- CONTRACT) - identifies the semantics included in the information sharing agreement.
- SEMANTIC – specifies the information elements to be aggregated in to the document, message or information composite to be shared based on the community agreements.
- TRANSACTIONAL – specify the build-plans of information element from the foundation classes.

- **FOUNDATION** – identify the based information and data elements and align logical “wrapper” classes that underpin the models. The wrapper classes represent a single instance of an information element in the environment.

The models can also be developed bottom-up and middle-out depending on the use of legacy application and data stores, or the focus of the projects involved. The modeling techniques employed provide the ability to associate class attributes to accommodate differing naming conventions as one moved between the physical, logical, and conceptual (strategic or business) views of the architecture. The techniques also provide the ability to model attribute-method relationships to support data transformations (e.g., when integrating legacy data environments into a system-of-systems environment).

Figure A.1 illustrates the relationships between elements of the models and other views in an architecture framework. It is intended that the policies, or rules, generated from the models realize the elements currently defined by the UPDM; specifically, the realization of a needline’s information-flow and its information-composite (e.g., Message). The information composite is realized by the enforcement or execution of the derived policies by deployed systems, applications and services in the environment. This specification translates the models into multiple platform specific models (PSM), i.e., a set of JAVA Classes (Annex E) and XML Schema (Annex D).

The Contract enables the specification of community semantics outside the constraints of a needline and its associated operational-nodes. The Contract allow the formation on conceptual communities of interests (CoIs) outside the specification of its operational configurations. In its simplest form, a Contract can have a one-to-one relationship with a Needline.

The remainder of this section describes the use of the policy models within an architectural model. These descriptions will reflect a top-down development strategy and are critical to understanding the utility of the SOPES IEDM model. The integration of policy models with the SOPES semantics metamodel enables a rich collection of information management techniques to be executed by an operational information exchange framework.

A.2.4 Stereotypes

The models define the following stereotypes to describe the hierarchy of the models, tying business architecture requirements to the underlying information stores:

1. **Contract** identifies a class as a contract;
2. **Semantic** identifies a class as a Semantic;
3. **Guard** identifies a class as a semantic guard;
4. **Transactional** identifies a class an enclosing transactional;
5. **Wrapper** identifies a class as a wrapper for an instance of an information element;
6. **Entity** (which may be prefixed with the name of the data store and version) identifies a Modeling Element.

A.2.5 Contract

A “Contract” is simply an agreement to exchange information between two or more participants. As illustrated in Figure A.9, the contract is uses to realize the information exchange requirements of either a needline or a community of interest. The Contract sets a policy (exchange rules) by identifying which Semantics are included in the contract. This relationship is established by setting a dependency between the contract and the included semantics.

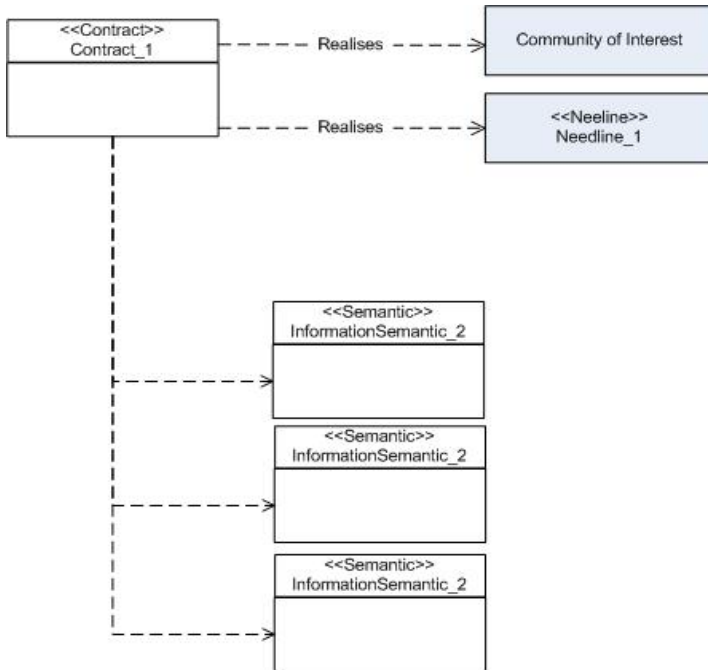


Figure A.9 - Contract

The semantics can be re-used to satisfy the requirements on multiple contracts; meaning, that any time there is a data change to the information contained within a semantic, the change would be reported to all the participants to each of the contracts that include the semantic. Applying this rule means that:

1. Semantics become reusable architectural components; and
2. Event (data change) driven global update levels of interoperability are achieved.

In addition to the containment for the semantics comprising and information flow, a “Contract” extends the definition of information exchange requirement to include:

1. The participating operational nodes;
2. The communication channel;
3. The distribution specification (e.g., language, schema, format, syntax and protocol);
4. The agreed quality of service;
5. The potential threats to the exchange;
6. The information sensitivity (e.g., caveat and classification); and
7. The participants and their required accreditations.

These concepts are not core to SOPES IEDM, and thus, are not discussed in this document. They are part of a broader discussion on the role of architecture and architecture frameworks. They play a critical role in specifying the context and requirements for information exchange and thus are beyond the critical and foundational information (or semantic) interoperability addressed by this specification.

A.2.6 Semantic

A semantic, Figure A.10, represents the specification for a complete data, which is considered meaningful to a community, organization, system or application; meeting one or more of the information flow requirements specification for a needline. The semantic is defined by the community, needline or application interface, while transactionals are closely linked to the underlying data store. The semantic can be thought of as a schema (e.g., IC.XSD) and the InformationComposite thought of as the instance document (e.g., IC.xml).

As illustrated, class attribution is not carried by the semantic. The semantic encloses and carries all attributes contained within its subtended transactionals and wrappers.

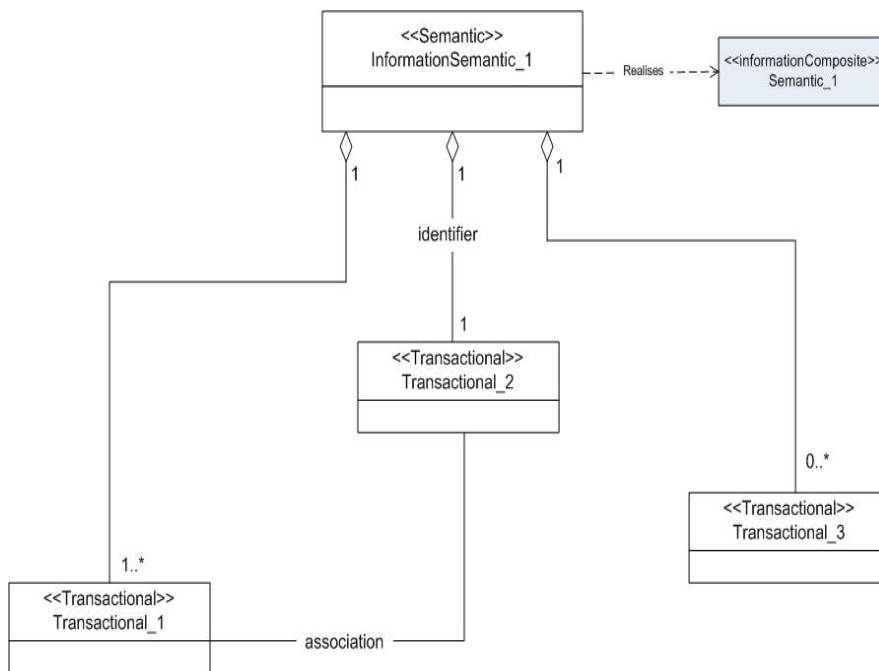


Figure A.10 - Semantic

A.2.6.1 Filtered Semantic

A “Filtered Semantic” represents a semantic with all filters, contained in the semantic or its support transactionals, set in the operational environment. Filters can be set by default during design or added during runtime. The constraints, describing a filter are modeled as illustrated in Figure A.10. A filtered semantic may be used to enforce policies that enable brevity and efficiency by removing from the InformationComposite content (but leaving a reference) that is assumed, or known, to have already been exchanged.

A.2.6.2 Guard Semantic

As “guard semantic” is modeled in the same manner as a semantic (above). In practical terms the “guard” is a semantic stereotyped as - “guard.” A Guard builds like a semantic - but works to lock the information contained in its structure from release on any contract. This concept will be explored in later document that address the potential extensions to this UML modeling profile information (semantic) interoperability.

Identifying this concept is intended to illustrate the extensibility of the approach as mandated by the request for proposal (RFP).

A.2.7 Transactional

The Transactional, Figure A.11, represents the core concepts within the models. They allow the information architects to construct reusable informational building blocks, upon which to build multiple community semantics. Transactionals document the constructions plans for an information/data store and ultimately link community information needs to the structure of the underlying stores.

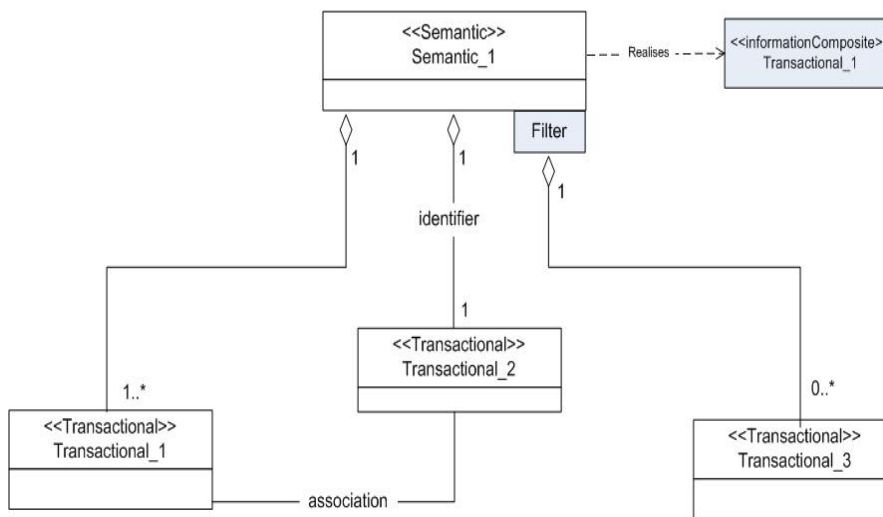


Figure A.11 - Transactional

Although there is only one form of transactional, in the course of the follow-on discussion we preface the transaction to identify its role in the construction plan and the structural hierarchy of the semantic:

1. Enclosing_Transactional identifies the transactional which forms the focus of the diagram. The enclosing transactional can be identified by the diamonds on the aggregation arc. They are always on the role-end associated with the Enclosing_Transactional.
2. Subtended_Transactional (or Support_Transactional) identifies the transactionals contained by a enclosing transactional.
3. Identifying_Transactional or Identifying_Wrapper, identifies the subtended transactional or wrapper that carries the keys or identifiers needed to built the aggregation. The Identifying_Transactional or Identifying_Wrapper is identified by the “Identifier” label on its aggregation arc; representing an aggregation arc with a tagged value isIdentifier set to “true.”
4. WatchPoint_Transactional is a transactional with an associated watchpoint data event that triggers the build of a semantic and all its subtended transactionals. Each WatchPoint Transactional has one aggregation arc with an 'isWatchPoint' tag set to True.

A single aggregation arc may have both an isIdentifier tag and an isWatchPoint tag. This Transactional must be built starting with the Wrapper at the end of the aggregation arc with the isWatchPoint tag. If both an isWatchPoint and an isIdentifier tag are present in the Transactional model on different arcs then the Transactional may be built as a WatchPoint or a support Transactional.

The rules that identify if a Transactional forms a watchpoint:

- a. Must contain a composition arc, tagged as 'WatchPoint = True,' that connects to a Wrapper;
- b. Must hold at least enough data to provide referential integrity when persisted to a data store;
- c. Complete in it's meaning, ie modeler must include all mandatory as well as optional tables that when combined, provide a coherent picture;
- d. Comprise basic building blocks for Semantic Artifact; and
- e. Maybe subtended as well as standalone.

A.2.8 Foundation

A.2.8.1 Wrapper

A Wrapper, Figure A.4, is a Class that directly maps between the logical data model and the physical data model. Wrappers therefore exist between the Logical Information Security Architecture and the Physical Information Security Architecture. Figure xx illustrates how this mapping is modeled.

A wrapper represents the metadata definition for a single instance (or row in the case of a traditional RDBMS) of data from the underlying information store.

A.2.8.2 Entities

The entity calls represent the physical entity (table) definitions, including the complete attribute metadata definitions, as well as attribute domain and domain business rules. The metadata associated with the entity is assigned to the wrapper and carried through the remainder of the model.

A.2.9 Build Plan

The models specify the policies or rules governing the aggregation or marshalling of information elements included in the community semantics in a manner that is consistent with the structures of the underlying data store. These policies bridge between the community semantics and information patterns (Transactionals) derived for a given data store. The policies (or rules at execution) are enforced by the information applications and services designed to broker information within and between information systems. The models represent a set of architectural views that provide a platform independent specification for the environmental policies governing the exchange of information between operational nodes.

The information pattern provide a systematic build (or construction or navigation) plan for the aggregation of information elements into the Information composite (semantics) agreed to by the community or the participants (systems, applications, services or users) to the exchange. Adherence to the build plan assures that information stores are used in a consist manner and the semantic integrity of the information is maintained.

A.2.9.1 Initiation of Build

A “Build” refers to the formation of a semantic or transactional within the environment to accommodate a change in information available in the operational environment. The build or processing of new information starts when new information, encompassed by a “watchpoint” transactional, is identified. The existence of a new data event within a watchpoint causes that watchpoint transactional to build, together with all the transactionals and semantics that enclose that watchpoint.

The watchpoint works in a similar manner to a database trigger, but initiates a business object to respond to its environment - rather than a database application triggering a store procedure.

A.2.9.2 Navigation Constraints

Figure A.12 illustrates the ability of the architect to adorn the models with constrains that direct specific build steps based on the value of an attribute at runtime. This addresses inclusions or exclusions of specialized objects which can only be determined at runtime. The build plans integrate these navigation constraints.

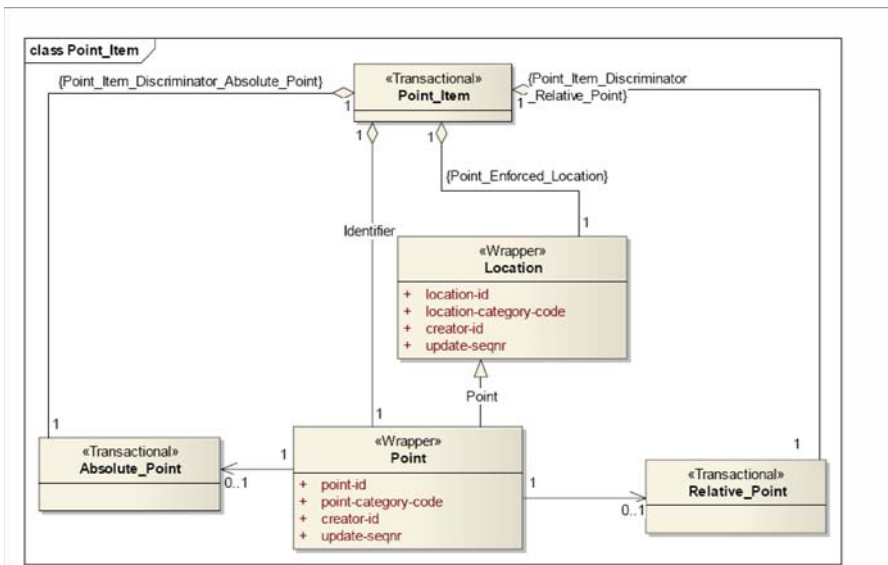


Figure A.12 - Constraining Navigation

The SOPES OCL utilizes two constraint patterns that are directly related to the ConstructionSequence. The naming convention for these two patterns include their respective roles within the ConstructionSequence i.e., a_Discriminator_mN0, a_Discriminator_mN1, or mN0_Enforced_a, mN1_Enforced_a.

These two types of ConstructionSequence constraints are linked by the use of attributes whose enumerated domains include a specific reference from the “a” object type to the linked mN# object types.

The use of a_Discriminator_mN# requires that the object "a" have an attribute whose enumerated domain references a set of object types mN# as well as a readPlan between “a” and the object type in the set. For the sake of clarification it should be noted that though this domain explicitly references these mN# object types the enumeration may also includes other choices that are not associated to objects. In the cases of a Wrapper to Transactional based Discriminator the relationship is to the WatchPoint/Identifier of the Transactional

As an example; in Figure A.11 objects of type Point have the enumerated domain attribute point-category-code which references objects of type AbsolutePoint the identifier of Absolute_Point (enumerated domain value ‘ABS’) and RelativePoint the identifier of Relative_Point (enumerated domain value ‘REL’) as well as other attribute values which do not reference objects of any type. If in Point_Item an object of type Point exists and the data in point-category-code is ‘ABS’ then the associated (and now mandatory) Absolute_Point object must exist for the Point_Item to complete instantiation correctly, furthermore the ‘ABS’ data also prohibits the construction of a Relative_Point object.

As a counterpoint to the `a_Discriminator_mN#` constraint is the `mN#_Enforced_a` which requires that if an object of a set `mN#` exists then the enumerated domain attribute in “a” must be that value which refers to the specific object type member of `mN#`. Continuing our example from above, `Location` has the enumerated domain attribute `location-category-code` which associates `Location` with objects of type `GeometricVolume`, `Line`, `Point`, and `Surface`. In objects of type `Point_Item` the object of type `Point` is the identifier and is constructed before the object of type `Location`, this requires that the enumerated domain value for the attribute `location-category-code` be ‘PT’ if the value is any other then the `Point_Item` should not complete instantiation.

Object constraint language is used to constrain navigation (Section 8) on a containment arc to assure the correct aggregation of subtended element in an information construct and to describe the navigation/construction plan (Annex C) derived from the UML. An exemplar for the use of navigation constraints is illustrated in Figure A.11.

Table A.3 provides an example of the OCL used to constrain navigations:

Constraint	Details
<code>Point_Item_Discriminator_Absolute_Point</code>	<code>inv: self.Point.point-category-code='ABS'</code>
<code>Point_Item_Discriminator_Relative_Point</code>	<code>inv: self.Point.point-category-code='REL'</code>
<code>Point_Enforced_Location</code>	<code>inv: self.Location.location-category-code='PT'</code>

A.3 Developing the Information Exchange Models

A.3.1 Top-Down Approach

For new environments, containing no legacy, a top down approach can be used. A top-down approach follows the traditional enterprise architecture methodology.

A.3.2 Bottom-up Approach

In most environments, new architectures are developed based on legacy environments, which have significant investment in their underlying information store. It would be unreasonable to propose a strategy the only supports a top-down approach that may not align with legacy environments in the long run; requiring major upgrade and modification to working systems. A bottom-up approach addresses the possible integration of legacy information applications and stores.

Bottom-up was the approach used to develop the SOPES IEDM specification and prototype implementations. The JC3IEDM, in the form of the MIP information Resource Dictionary (MIRD), was used for the development of the SOPES IEDM Specification Foundation Model. The MIRD content documents the results of a legacy ongoing COI consensus process that captures many unique consultation, command and control requirements in a normalized and generic model. In the process, visibility of the individual business requirements has been somewhat lost.

Today a bottom-up approach can document the available normalized and generic transactional semantics supported by the information stores, but not the business requirements from evolving information architectures.

A.3.3 Hibrid Approach

The most likely approach to be adopted by projects is a hybrid environment where team members would define business requirements in a top-down approach, and others would build up project information based on a bottom-up documentation effort on the legacy information stores. This requires the two efforts to align at the semantic level of the model. The models cater directly to this requirement.

The hierarchical modeling approach provides SOPES implementer with several options and locations where this integration can occur.

A.4 Linking to UPDM

A.4.1 Connecting to the Architecture

One of the first steps in the architectural process is the identification of the needlines between operational nodes. As illustrated in Figure A.13 the needline represents a stereotyped association between two operational nodes.

Operational Nodes and Needlines



Figure A.13 - Needline

The next step in the architecture process is the identification of the information flows between the operational nodes; bi-directional information flows are illustrated in Figure A.14. In the runtime environment the information flows realize the exchange of information-composites comprising the content of a community semantic.

Information Flows Between Nodes

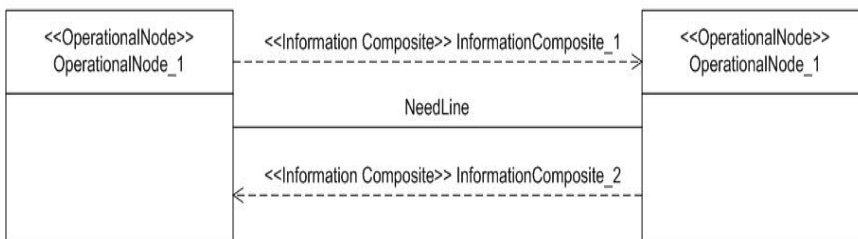


Figure A.14 - Information Flows

The information-composites are realized by the execution or enforcement of the information exchange policies defined by the models. The information exchange policies defined by the models (when executed) realize the information-composites realized by the information flows (Figure A.15).

Assigning Information Flows to Needlines

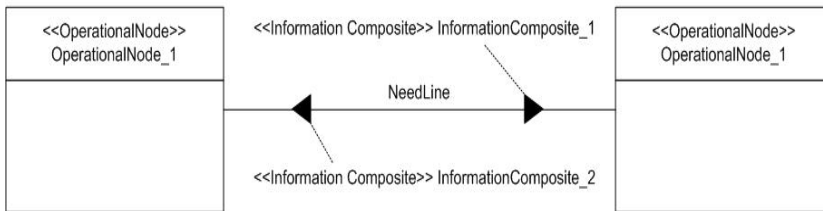


Figure A.15 - Realizing Information Flows

Lastly, the information flows (information composites) are realized on the needlines (Figure A.16). At this point, having semantic realized by the execution or the enforcement of policies derived from the semantic model we have full traceability from the needline to the instance data in the SV-11 data store.

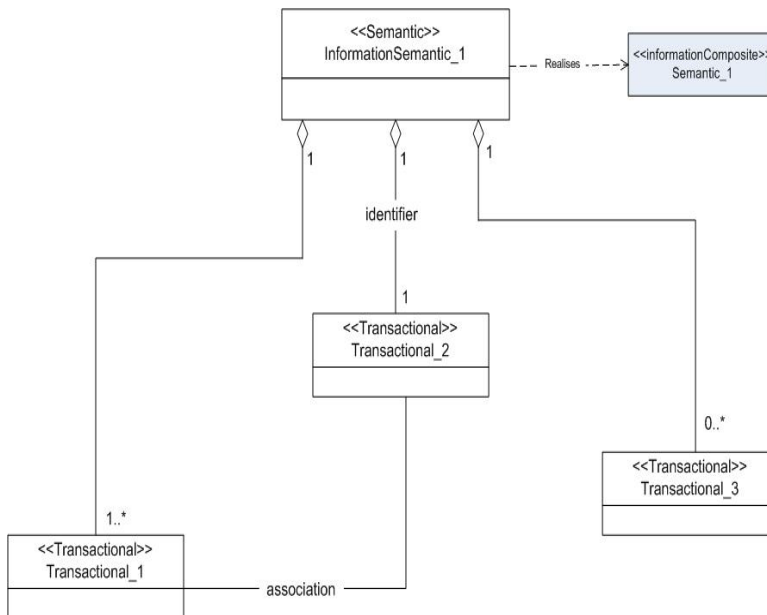


Figure A.16 - Semantics

A.5 Community Defined Completeness

The modeling concepts presented support COIs implementing different approaches to specifying semantic and referential completeness. This section will discuss exemplars, from the SOPES IEDM Specification, showing alternative COI approaches for specifying completeness using the model.

In the SOPES IEDM specification the “Materiel_Item” and its necessary encyclopedic Type data (“Materiel_Type”) are not formally associated until the Semantic (“Materiel_SA”) is formed. In that exemplar, the Materiel_Type is identified as optional (multiplicity: 0..*). For the MIP community this appeared to depart from the referential integrity prescribed by the JC3IEDM Schema (i.e., all Object_Item must be associated with an Object_Type (multiplicity: 1..*)). As illustrated in Figure 1-16, the Materiel_Item transactional does not include the Material Type information prescribed by the JC3IEDM Schema. The SOPES submitters took the assumption that type_side data is often preloaded into a data store and not required in each transmission. The authors provided the flexibility in the specification for the individual communities to make these assertions in their specified semantics an or through the use of filters.

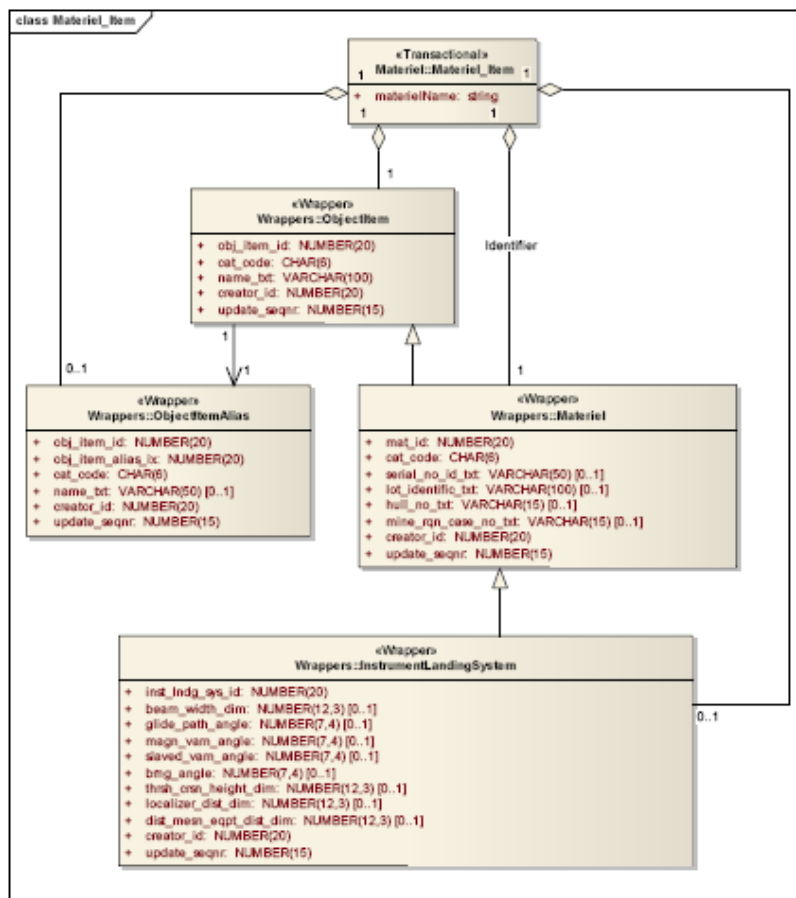


Figure A.17 - Realization of Information

As illustrated in Figure A.17, the SOPES IEDM exemplar semantic for Materiel (Materiel_SA) encloses Materiel_Item and Materiel_Type, thus aligning the referential integrity of the models and the JC3IEDM Schema. The multiplicity could be defined to require Materiel_Type information.

Alternately the community can extend the core models to include additional transactionals which embed the “Item” and “Type” side data. The SOPES specification leaves this within the purview of the individual communities. This approach provides flexibility and extensibility to the core specification.

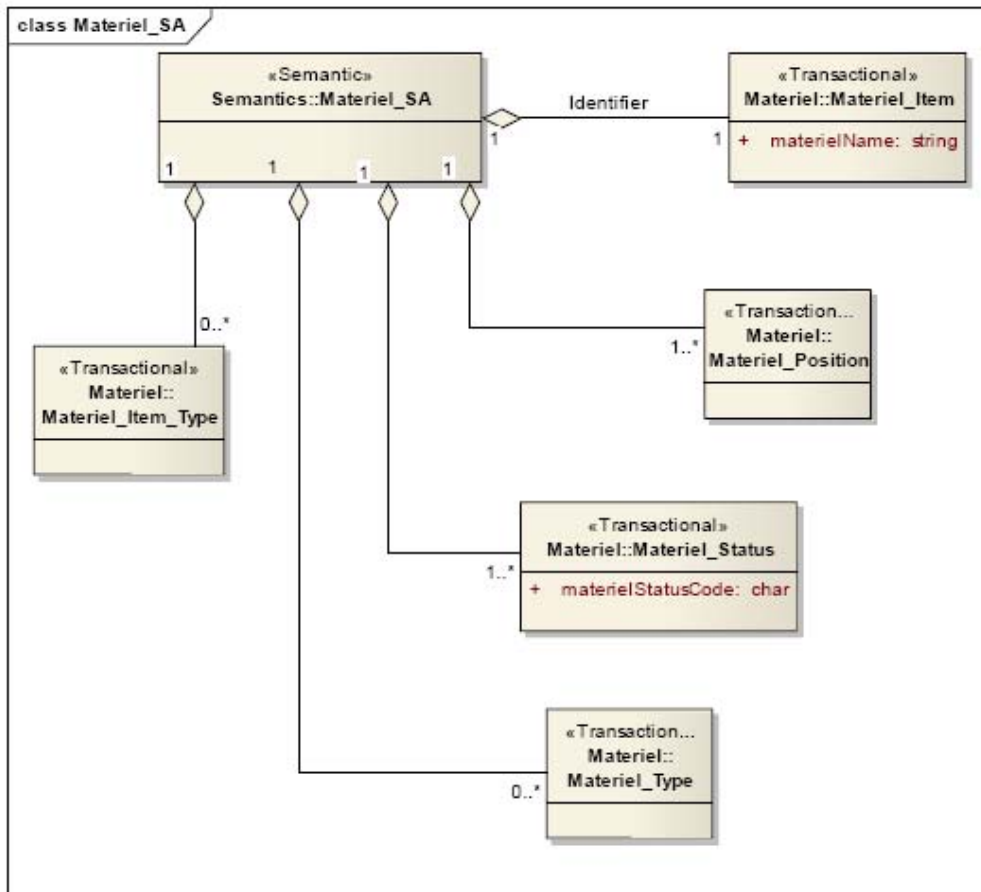


Figure A.18 - Realization of Information

A.6 Modeling Extension Examples

A.6.1 Domain Filter

Domain Filters can address a number of information quality requirements, including network performance, information overload and priority to name a few. In this section we will look at the use of filters to address elements of security (e.g., Filter based in security tags in the data).

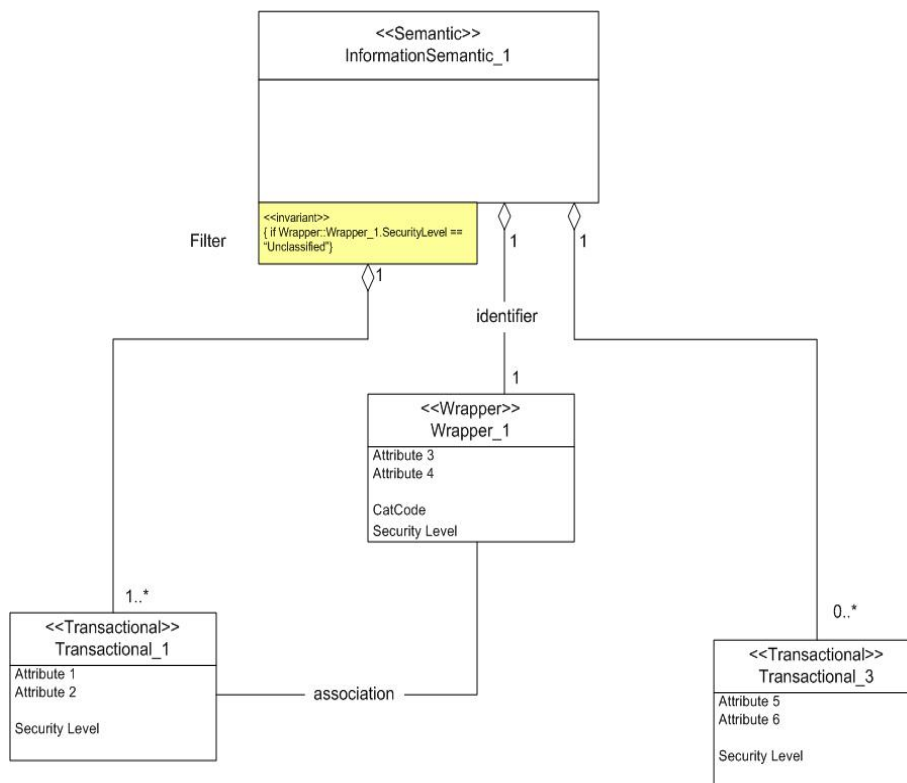


Figure A.19 - Domain Filter

A filter is modeled as a constraint on the role end associated with the enclosing transactional or semantic. Figure A.19 illustrates the inclusion of a domain filter to the inclusion of “Transactional_1,” which limits the inclusion of an information_composite into the build, if its SecurityLevel attribute is set to “unclassified.” An aggregate security attribute can be modeled and evaluated at runtime based on domain specific attribute combinations (i.e., with out the use of the specific subtended “SecurityLevel” attributes). For example, in the context of Action, a domain policy may be that future planned tasks are classified, thus:

- <<invariant>>{ if Wrapper::ActionTask.CategoryCode == "Plan" AND Wrapper::ActionTask.planned-start-datetime > Time.Current THEN Context.SecurityClassificationLevelCode == "Confidential"} (Computed Security Caveat)

This security example can be extended in to other areas, including:

- <<invariant>>{ if Wrapper::Wrapper_1.Priority == "High" } (Quality of Service example)
- <<invariant>>{ if Wrapper::Wrapper_1.PrivacyCode == "Private" } (Privacy example)
- <<invariant>>{ if Wrapper::Wrapper_1.Caveat == "NATO" OR Wrapper_1.Caveat == "5Eyes" } (Release-ability example)
- Other

A.6.2 Methods

Within the modeling approach, methods can be used to specify transformations or aggregations of attribute values during the build of an informationComposite. Figure A.20 illustrates the basic construction of a transformation. The attribute(s) associated with the transformation are link through dependency arcs. The index on the arc is a tagged value which indicates the order index of the parameters to the method. The order index identifies the order of the attributes in a method call.

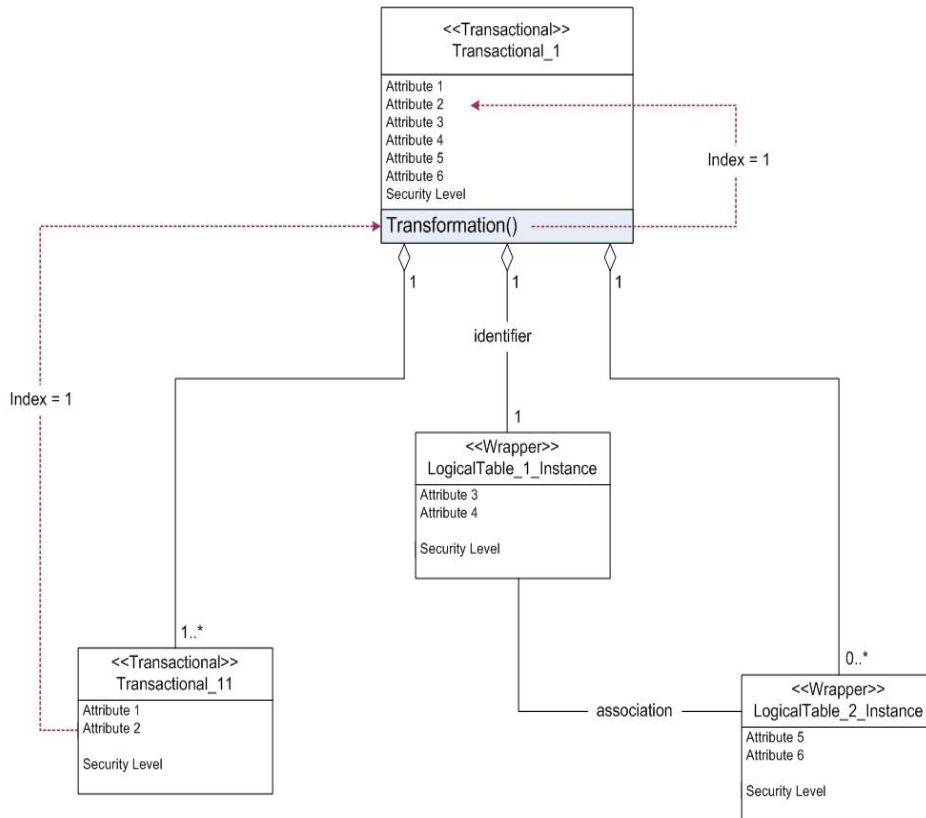


Figure A.20 - Transformation

A security example for the use of methods is illustrated in Figure A.20. As illustrated, the method on the enclosing-transactional processes the runtime security level tags of the subtended-elements processes and then sets security level on the generated informationComposite. The diagram does not prescribe the methodology for determining the actual level - merely, that a runtime determination needs to be made.

The specification and design of the method can be handed off to a security analyst or linked to existing policy. Either way, the need for a security decision point in the processing of the information is now captured in the architecture.

Note: the specification of the algorithm can be modeled independently and added to the model. This model only indicates the existence of the decision point.

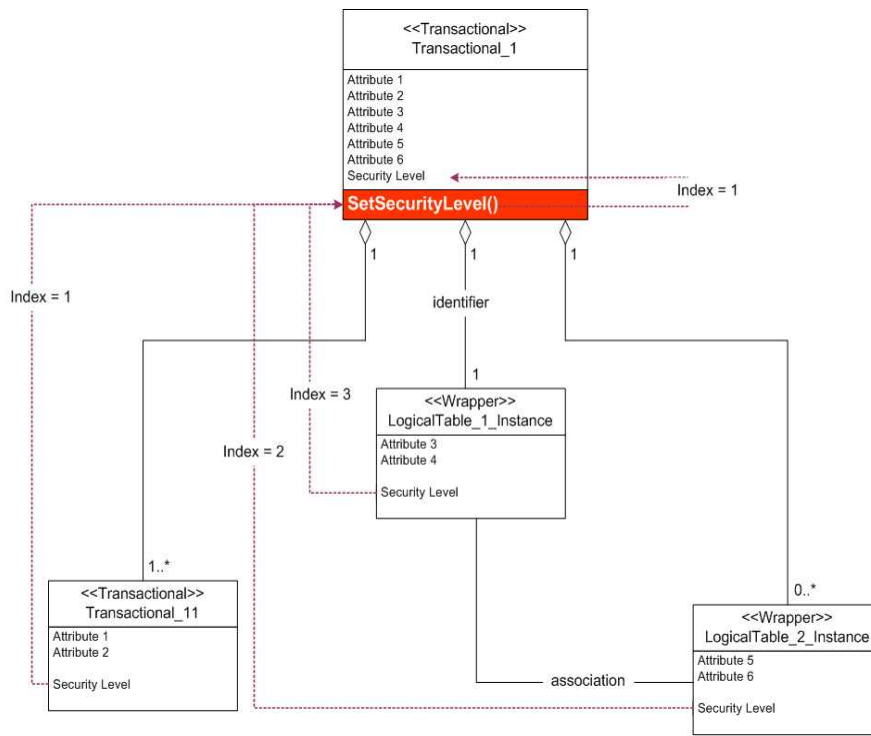


Figure A.21 - Processing Tags and Labels

A.6.3 Forced Method

Figure A.21 illustrates a direct force of the security level base on the existence of the subtended objects by an analyst specification that a combination of subtended information classes automatically mandates a specification of a security level. In this case the classification of the enclosing object is forced to a level independent of the classifications of the subtended objects.

This option adds flexibility to the security considerations of the model.

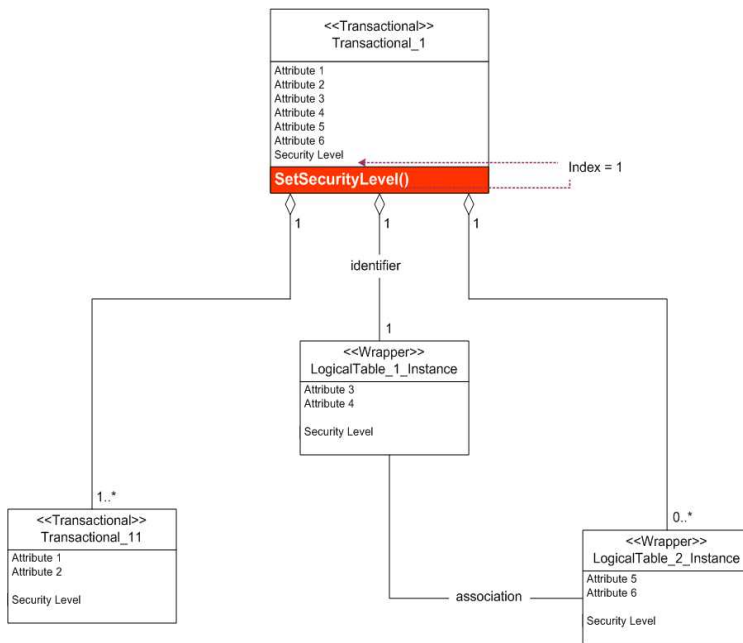


Figure A.22 - Forced Data Change

A.6.4 Selective Replication

Figure A.23 illustrates attribute-to-attribute association. This aspect of the notation can be used to specifically select which data elements (attributes) are processed during the processing of a composite object.

This modeling approach can also be used to migrate from physical names, to logical names to business named (community terminology) as the objects build.

If the attribution is not provided, it is assumed that all attributes are included in the build.

This modeling option also aids in the defining security restrictions on the release of specific data elements.

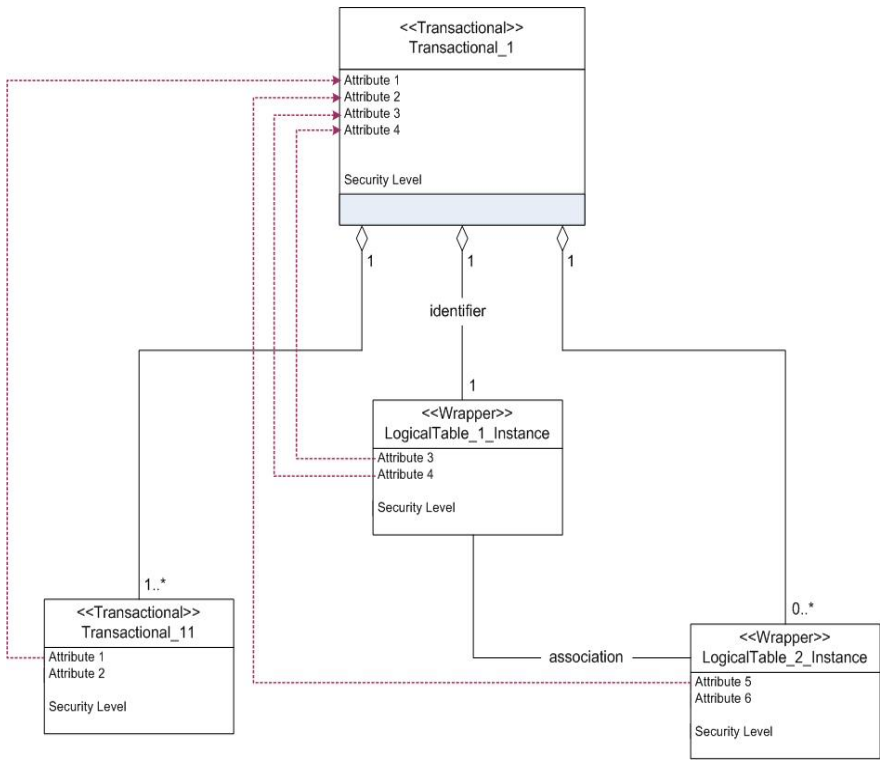


Figure A.23 - Selective Replication

Annex B

Wrapper Class Descriptions

(normative)

B.1 Overview

This annex describes the information elements and attributes comprising the wrappers layer of the SOPES information exchange Data Model (IEDM). These wrapper classes replicate the table descriptions from the logical model describing JC3IEDM V3.1c. For additional detail and alignment with the physical specification refer to the MIP Information Resource Dictionary (MIRD) or JCIEDM Specification.

The MIRD and JC3IEDM specification also provide an exemplar for the domain value business rules for a community. Additional community business rules would have to be developed for a community adopting the JC3IEDM. This exemplar can be adopted as a foundation to the data requirements for other communities adopting the JC3IEDM.

AbsolutePoint

A POINT in a geodetic system.

Wrapper Attribute	Description	JC3IEDM Physical Type
absolute-point-id	The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS.	NUMBER(20)
absolute-point-category-code	The specific value that represents the class of ABSOLUTE-POINT with respect to the reference frame. It serves as a discriminator that partitions ABSOLUTE-POINT into subtypes.	CHAR(6)
absolute-point-vertical-distance-id	The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS.	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item.	NUMBER(15)

Action

An activity, or the occurrence of an activity, that may utilise resources and may be focused against an objective."

Wrapper Attribute	Description	JC3IEDM Physical Type
action-id	The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS.	NUMBER(20)
action-category-code	The specific value that represents the class of ACTION. It serves as a discriminator that partitions ACTION into subtypes.	CHAR(6)
action-name-text	The character string assigned to represent a specific ACTION.	VARCHAR(50)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item.	NUMBER(15)

ActionAircraftEmployment

The procedure that guides the use of an ACTION-RESOURCE that is capable of atmospheric flight.

Wrapper Attribute	Description	JC3IEDM Physical Type
action-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-resource-index	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-resource-employment-index	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-aircraft-employment-approach-offset-code	The specific value that represents the side of the initial point-to-target line that the attack aircraft is cleared to manoeuvre in during the target run.	CHAR(6)
action-aircraft-employment-deplanement-method-code	The specific value that represents the standard method of deplanement of a specific ACTION-RESOURCE in support of a specific ACTION.	CHAR(6)

action-aircraft-employment-egress-direction-angle	The rotational measurement clockwise from the line of true north to the direction to be used by an aircraft when departing an ACTION-OBJECTIVE.	NUMBER(7,4)
action-aircraft-employment-inflight-report-requirement-indicator-code	The specific value that represents whether there is a requirement for the flight leader to provide a report of mission accomplishments.	CHAR(6)
action-aircraft-employment-ingress-direction-angle	The rotational measurement clockwise from the line of true North to the direction to be used by an aircraft when approaching an ACTION-OBJECTIVE. Includes the concept of terminal attack direction.	NUMBER(7,4)
action-aircraft-employment-crew-composition-code	The specific value that represents the composition of the crew.	CHAR(6)
action-aircraft-employment-general-role-code	The specific value that represents the general operational role of an aircraft.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ActionContext

A relationship between a specific ACTION and a specific CONTEXT.

Wrapper Attribute	Description	JC3IEDM Physical Type
action-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
context-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-context-index	"The unique value, or set of characters, assigned to represent a specific ACTION-CONTEXT for a specific ACTION and a specific CONTEXT and to distinguish it from all other ACTION-CONTEXTs for that ACTION and that CONTEXT."	NUMBER(20)
action-context-category-code	The specific value that represents the nature of the ACTION-CONTEXT as it relates to a specific ACTION and a specific CONTEXT.	CHAR(6)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ActionContextStatus

A record of the perceived state of a specific ACTION-CONTEXT as determined by the establishing organisation.

Wrapper Attribute	Description	JC3IEDM Physical Type
action-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
context-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-context-index	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-context-status-index	"The unique value, or set of characters, assigned to represent a specific ACTION-CONTEXT-STATUS for a specific ACTION-CONTEXT and to distinguish it from all other ACTION-CONTEXT-STATUSs for that ACTION-CONTEXT."	NUMBER(20)
action-context-status-category-code	The specific value that indicates whether a specific ACTION-CONTEXT-STATUS refers to the beginning or termination of the association.	CHAR(6)
action-context-status-effective-datetime	The character string representing a point in time that designates the beginning of the period of effectiveness for a specific ACTION-CONTEXT-STATUS.	CHAR(18)
action-context-status-establishing-organisation-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ActionEffect

A perceived effectiveness of a specific ACTION against a specific battlespace object or its class.

Wrapper Attribute	Description	JC3IEDM Physical Type
action-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-effect-index	"The unique value, or set of characters, assigned to represent a specific ACTION-EFFECT for a specific ACTION and to distinguish it from all other ACTION-EFFECTs for that ACTION."	NUMBER(20)
action-effect-category-code	The specific value that represents the class of ACTION-EFFECT with respect to item or type. It serves as a discriminator that partitions ACTION-EFFECT into subtypes.	CHAR(6)
action-effect-description-code	The specific value that represents the type of outcome of a specific ACTION that is being estimated or recorded.	CHAR(6)
action-effect-severity-code	The specific value that represents the degree of seriousness of a specific ACTION-EFFECT.	CHAR(6)
reporting-data-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ActionEffectItem

An ACTION-EFFECT of a specific ACTION in accomplishing its aim in relation to a specific OBJECT-ITEM.

Wrapper Attribute	Description	JC3IEDM Physical Type
action-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)

action-effect-index	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-effect-item-ratio	The numeric quotient value that represents the portion of a whole OBJECT-ITEM that is estimated in a specific ACTION-EFFECT-ITEM to have the result specified in ACTION-EFFECT. The value must be in the range from 0 to 1.	NUMBER(6,5)
object-item-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ActionEffectType

An ACTION-EFFECT of a specific ACTION in accomplishing its aim in relation to a specific OBJECT-TYPE.

Wrapper Attribute	Description	JC3IEDM Physical Type
action-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-effect-index	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-effect-type-count	The integer value representing the aggregated units of an OBJECT-TYPE that is estimated in a specific ACTION-EFFECT-TYPE to have the result specified in a particular ACTION-EFFECT.	NUMBER(6)
object-type-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ActionElectronicWarfareEmployment

The technique used by an ACTION-RESOURCE for Electronic Warfare by electronic or mechanical means.

Wrapper Attribute	Description	JC3IEDM Physical Type
action-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-resource-index	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-resource-employment-index	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-electronic-warfare-employment-category-code	The specific value that represents an electronic or mechanical technique.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ActionEvent

"An ACTION that is an incident, phenomenon, or occasion of military significance which has occurred or is occurring but for which planning is not known."

Wrapper Attribute	Description	JC3IEDM Physical Type
action-event-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-event-category-code	The specific value that represents the general class or nature of activity prescribed by an ACTION-EVENT. It serves as a discriminator that partitions ACTION-EVENT into subtypes.	CHAR(6)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ActionEventDetail

Supplemental information about the ACTION-EVENT.

Wrapper Attribute	Description	JC3IEDM Physical Type
action-event-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-event-detail-index	"The unique value, or set of characters, assigned to represent a specific ACTION-EVENT-DETAIL for a specific ACTION-EVENT and to distinguish it from all other ACTION-EVENT-DETAILs for that ACTION-EVENT."	NUMBER(20)
action-event-detail-classification-code	The specific value that represents the classification of a specific ACTION-EVENT according to a broad subject area.	CHAR(6)
action-event-detail-crime-indicator-code	The specific value that denotes a judgement whether a specific event is a crime or not.	CHAR(6)
action-event-detail-text	The character string assigned to represent the description of the event detail of a specific ACTION-EVENT.	VARCHAR(255)
reporting-data-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ActionEventStatus

The perceived appraisal of the actual progress of a specific ACTION-EVENT as determined by the reporting organisation.

Wrapper Attribute	Description	JC3IEDM Physical Type
action-event-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-event-status-index	"The unique value, or set of characters, assigned to represent a specific ACTION-EVENT-STATUS for a specific ACTION-EVENT and to distinguish it from all other ACTION-EVENT-STATUSs for that ACTION-EVENT."	NUMBER(20)
action-event-status-completion-ratio	The numeric quotient value that represents the portion of a whole ACTION-EVENT that is estimated to have been accomplished. The value must be in the range from 0 to 1.	NUMBER(6,5)
action-event-status-feint-indicator-code	The specific value that indicates whether the ACTION-EVENT is a feint.	CHAR(6)
reporting-data-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ActionFunctionalAssociation

A relationship of an ACTION as a subject with another ACTION as an object in order to specify functional dependence.

Wrapper Attribute	Description	JC3IEDM Physical Type
action-functional-association-subject-action-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)

action-functional-association-object-action-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-functional-association-index	"The unique value, or set of characters, assigned to represent a specific ACTION-FUNCTIONAL-ASSOCIATION for a specific subject ACTION and a specific object ACTION and to distinguish it from all other ACTION-FUNCTIONAL-ASSOCIATIONS for those ACTIONS."	NUMBER(20)
action-functional-association-category-code	The specific value that represents the class of relationship of subject ACTION to object ACTION.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ActionLocation

An association of an ACTION with a LOCATION that enables the geographic position of the ACTION to be specified.

Wrapper Attribute	Description	JC3IEDM Physical Type
action-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
location-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-location-index	"The unique value, or set of characters, assigned to represent a specific ACTION-LOCATION for a specific ACTION and a specific LOCATION and to distinguish it from all other ACTION-LOCATIONS for that ACTION and that LOCATION."	NUMBER(20)
action-location-accuracy-dimension	The one-dimensional linear distance representing the uncertainty in the estimate of a specific ACTION-LOCATION.	NUMBER(12,3)
action-location-bearing-angle	The rotational measurement clockwise from true North to the right side of a horizontal conical section used in defining a specific ACTION-LOCATION.	NUMBER(7,4)
reporting-data-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ActionMaritimeEmployment

The procedure that guides the use of an ACTION-RESOURCE in a maritime environment.

Wrapper Attribute	Description	JC3IEDM Physical Type
action-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-resource-index	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-resource-employment-index	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-maritime-employment-coordinated-air-sea-procedure-code	The specific value that represents the type of coordinated procedure that is to be followed in maritime operations with respect to Air Defence.	CHAR(6)
action-maritime-employment-number-runs-required-count	An integer value that represents the number of MCM runs required through a minefield to achieve the required clearance level.	NUMBER(3)
action-maritime-employment-swept-lane-actuation-width-dimension	The one-dimensional linear measurement representing the swept lane width within which mines will be actuated.	NUMBER(12,3)
action-maritime-employment-vessel-transit-instruction-code	The specific value providing lead through instructions for a convoy or vessel to pass through a maritime minefield.	CHAR(6)
action-maritime-employment-vessel-transit-recommended-speed-rate	The numeric value that represents the maximum distance per unit time that is recommended for a vessel to traverse a specific maritime minefield. The speed is measured in knots. The specified value must be greater than or equal to 0 (zero).	NUMBER(8,4)
action-maritime-employment-vessel-transit-longitudinal-spacing-dimension	The one dimensional linear measurement representing the distance between vessels in order to traverse a specific maritime minefield. The distance is measured in metres.	NUMBER(12,3)

action-maritime-employment-group-vessel-transit-longitudinal-spacing-dimension	The one dimensional linear measurement representing the distance between groups of vessels in order to traverse a specific maritime minefield. The distance is measured in nautical miles.	NUMBER(12,3)
action-maritime-employment-lead-vessel-name-text	An unformatted character string assigned to name a specific lead vessel in a convoy moving through a maritime minefield.	VARCHAR(50)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ActionObjective

"The focus, in terms of an OBJECT-ITEM, OBJECT-TYPE, or ACTION-TASK, in conducting a specific ACTION."

Wrapper Attribute	Description	JC3IEDM Physical Type
action-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-objective-index	"The unique value, or set of characters, assigned to represent a specific ACTION-OBJECTIVE for a specific ACTION and to distinguish it from all other ACTION-OBJECTIVES for that ACTION."	NUMBER(20)
action-objective-category-code	The specific value that represents the class of ACTION-OBJECTIVE with respect to item or type. It serves as a discriminator that partitions ACTION-OBJECTIVE into subtypes.	CHAR(6)
action-objective-qualifier-code	The specific value that represents a restriction or other qualification applicable to a specific ACTION-OBJECTIVE for a specific ACTION.	CHAR(6)
action-objective-authorising-organisation-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ActionObjectiveItem

"A battlespace object (FACILITY, FEATURE, MATERIEL, ORGANISATION or PERSON) which is the focus of a specific ACTION."

Wrapper Attribute	Description	JC3IEDM Physical Type
action-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-objective-index	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-objective-item-category-code	The specific value that represents the class of ACTION-OBJECTIVE-ITEM. It serves as a discriminator that partitions ACTION-OBJECTIVE-ITEM into subtypes.	CHAR(6)
action-objective-item-primacy-code	The specific value that represents the relative usage of a specific ACTION-OBJECTIVE-ITEM when more than one instance of ACTION-OBJECTIVE-ITEM is designated for a specific ACTION.	CHAR(6)
candidate-target-list-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
candidate-target-detail-item-index	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
object-item-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ActionObjectiveItemMarking

The technique of indicating the position of an ACTION-OBJECTIVE-ITEM at a given time for the benefit of a using ORGANISATION.

Wrapper Attribute	Description	JC3IEDM Physical Type
action-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-objective-index	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-objective-item-marking-index	"The unique value, or set of characters, assigned to represent a specific ACTION-OBJECTIVE-ITEM-MARKING for a specific ACTION-OBJECTIVE-ITEM and to distinguish it from all other ACTION-OBJECTIVE-ITEM-MARKINGs for that ACTION-OBJECTIVE-ITEM."	NUMBER(20)
action-objective-item-marking-laser-correlation-code-text	The character string assigned to represent the code to be used by both the target designation system and the weapon delivery system.	VARCHAR(4)
action-objective-item-marking-method-code	The specific value that represents the method of marking a position.	CHAR(6)
action-objective-item-marking-panel-shape-code	The specific value that represents the shape of the marking panel.	CHAR(6)
action-objective-item-marking-recognition-signal-colour-code	The specific value that represents the coloration of the marking signal.	CHAR(6)
action-objective-item-marking-start-datetime	The character string representing a point in time that designates the start of a specific ACTION-OBJECTIVE-ITEM-MARKING.	CHAR(18)
action-objective-item-marking-using-organisation-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ActionObjectiveTask

The objective of the specific ACTION is the operation identified as the specific ACTION-TASK.

Wrapper Attribute	Description	JC3IEDM Physical Type
action-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-objective-index	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-objective-task-action-task-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ActionObjectiveType

"A class of battlespace object (FACILITY-TYPE, FEATURE-TYPE, MATERIEL-TYPE, ORGANISATION-TYPE or PERSON-TYPE) which is the focus of a specific ACTION."

Wrapper Attribute	Description	JC3IEDM Physical Type
action-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-objective-index	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-objective-type-category-code	The specific value that represents the class of ACTION-OBJECTIVE-TYPE. It serves as a discriminator that partitions ACTION-OBJECTIVE-TYPE into subtypes.	CHAR(6)
action-objective-type-priority-text	The character string assigned to represent the rank of importance of a specific ACTION-OBJECTIVE-TYPE according to the planning authority.	VARCHAR(20)

action-objective-type-quantity	The numeric value that represents the aggregated units of a specific ACTION-OBJECTIVE-TYPE. No unit of measure is required.	NUMBER(12,3)
candidate-target-list-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
candidate-target-detail-type-index	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
object-type-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ActionObjectiveTypeImageryProduct

The intended characteristics of a specific ACTION-OBJECTIVE-TYPE-IMAGERY-PRODUCT that is an instance of MATERIEL-TYPE.

Wrapper Attribute	Description	JC3IEDM Physical Type
action-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-objective-index	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-objective-type-imagery-product-image-scale-count	The integer value representing the scale of the imagery mapping required.	NUMBER(9)
action-objective-type-imagery-product-image-type-code	The specific value that represents the media of transmission and the quality of the photographic product required.	CHAR(6)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ActionReconnaissanceEmployment

The parameters that guide the use of an ACTION-RESOURCE that is employed in a reconnaissance role.

Wrapper Attribute	Description	JC3IEDM Physical Type
action-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-resource-index	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-resource-employment-index	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-reconnaissance-employment-image-coverage-mode-code	The specific value that represents the mode of image coverage required.	CHAR(6)
action-reconnaissance-employment-image-view-qualifier-code	The specific value that represents the recorded media based on the type of imagery the interpreter is viewing.	CHAR(6)
action-reconnaissance-employment-type-of-coverage-code	The specific value that represents the type of coverage required.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ActionReferenceAssociation

A relationship between a specific ACTION and a specific REFERENCE.

Wrapper Attribute	Description	JC3IEDM Physical Type
action-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
reference-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-reference-association-category-code	The specific value that represents the class of a specific ACTION-REFERENCE-ASSOCIATION.	CHAR(6)
action-reference-association-part-text	The character string assigned to represent a specific part of the artefact that applies in a specific ACTION-REFERENCE-ASSOCIATION.	VARCHAR(50)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ActionRequiredCapability

"The specific military quality, specified as a CAPABILITY, required to meet an agreed operational need, specified as an ACTION."

Wrapper Attribute	Description	JC3IEDM Physical Type
action-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
capability-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-required-capability-quantity	The numeric value that represents the aggregated units of a specific CAPABILITY that is needed for a specific ACTION. The unit of measure is defined in the CAPABILITY specification.	NUMBER(12,3)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ActionResource

"An OBJECT-ITEM or an OBJECT-TYPE that is required, requested, allocated or otherwise used or planned to be used in conducting a specific ACTION."

Wrapper Attribute	Description	JC3IEDM Physical Type
action-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-resource-index	"The unique value, or set of characters, assigned to represent a specific ACTION-RESOURCE for a specific ACTION and to distinguish it from all other ACTION-RESOURCES for that ACTION."	NUMBER(20)
action-resource-category-code	The specific value that represents the class of ACTION-RESOURCE with respect to item or type. It serves as a discriminator that partitions ACTION-RESOURCE into subtypes.	CHAR(6)
action-resource-criticality-indicator-code	The specific value that denotes a judgement whether a specific resource (OBJECT-ITEM or OBJECT-TYPE) associated with a specific ACTION is essential for the effective completion of that ACTION.	CHAR(6)
action-resource-qualifier-code	The specific value that represents the type of restriction or other qualification applicable to a specific ACTION-RESOURCE for a specific ACTION.	CHAR(6)
action-resource-authorising-organisation-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ActionResourceEmployment

The procedure for using a specific ACTION-RESOURCE with or without dependence upon a specific ACTION-OBJECTIVE.

Wrapper Attribute	Description	JC3IEDM Physical Type
action-resource-index	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-resource-employment-index	"The unique value, or set of characters, assigned to represent a specific ACTION-RESOURCE-EMPLOYMENT for a specific ACTION-RESOURCE and to distinguish it from all other ACTION-RESOURCE-EMPLOYMENTS for that ACTION-RESOURCE."	NUMBER(20)
action-resource-employment-category-code	The specific value that represents the class of ACTION-RESOURCE-EMPLOYMENT. It serves as a discriminator that partitions ACTION-RESOURCE-EMPLOYMENT into subtypes.	CHAR(6)
action-resource-employment-azimuth-fire-angle	The rotational measurement clockwise from the line of true North specifying the direction of fire for the ACTION-RESOURCE.	NUMBER(7,4)
action-resource-employment-method-of-control-code	The specific value that represents the standard procedure to be used in controlling the employment of a specific ACTION-RESOURCE in support of a specific ACTION.	CHAR(6)
action-resource-employment-trajectory-fire-code	The specific value that represents the type of trajectory to be used in firing of a specific ACTION-RESOURCE in support of a specific ACTION.	CHAR(6)
action-objective-index	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)
action-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)

ActionResourceItem

"An OBJECT-ITEM (FACILITY, FEATURE, MATERIEL, ORGANISATION, or PERSON) to be used, excluded from use, being used, or having been used, in conducting a specific ACTION."

Wrapper Attribute	Description	JC3IEDM Physical Type
action-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-resource-index	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
object-item-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ActionResourceType

"An OBJECT-TYPE (FACILITY-TYPE, FEATURE-TYPE, MATERIEL-TYPE, ORGANISATION-TYPE, or PERSON-TYPE) to be used, excluded from use, being used, or having been used, in conducting a specific ACTION."

Wrapper Attribute	Description	JC3IEDM Physical Type
action-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-resource-index	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-resource-type-quantity	The numeric value that represents the aggregated units of a specific ACTION-RESOURCE-TYPE. No unit of measure is required.	NUMBER(9)
action-resource-type-apportionment-ratio	The numeric quotient value that represents a proportion of a specific ACTION-RESOURCE-TYPE devoted to an ACTION. The value must be in the range from 0 to 1.	NUMBER(6,5)

object-type-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ActionTask

An ACTION that is being or has been planned and for which the planning details are known.

Wrapper Attribute	Description	JC3IEDM Physical Type
action-task-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-task-category-code	The specific value that represents the class of ACTION-TASK. It serves as a discriminator that partitions ACTION-TASK into subtypes.	CHAR(6)
action-task-activity-code	The specific value that represents the type of activity prescribed by the ACTION-TASK.	CHAR(6)
action-task-minimum-duration	The numeric value that represents a quantity of time in milliseconds for the minimum permissible period of effectiveness of a specific ACTION-TASK.	CHAR(19)
action-task-estimated-duration	The numeric value that represents a quantity of time in milliseconds for the estimated period of effectiveness of a specific ACTION-TASK.	CHAR(19)
action-task-maximum-duration	The numeric value that represents a quantity of time in milliseconds for the maximum permissible period of effectiveness of a specific ACTION-TASK.	CHAR(19)
action-task-planned-start-datetime	The character string representing a point in time that designates the occurrence of the planned beginning of the specific ACTION-TASK.	CHAR(18)
action-task-start-qualifier-code	The specific value that denotes the role of starting date and time with respect to the period of effectiveness of a specific ACTION-TASK.	CHAR(6)

action-task-planned-end-datetime	The character string representing a point in time that designates the occurrence of the planned conclusion of the specific ACTION-TASK.	CHAR(18)
action-task-end-qualifier-code	The specific value that denotes the role of ending date and time with respect to the period of effectiveness of a specific ACTION-TASK.	CHAR(6)
action-task-priority-code	The specific value that represents the rank of importance of a specific ACTION-TASK in view of the planning organisation.	CHAR(6)
action-task-entailed-safety-degree-code	The specific value that represents the degree of safety (or risk) entailed with an ordered operation.	CHAR(6)
action-task-overt-covert-code	The specific value that represents the property of an ACTION-TASK to be overt or covert.	CHAR(6)
action-task-detail-text	The character string assigned to represent the description of an ACTION-TASK's detail.	VARCHAR(255)
action-task-timing-day-code	The specific value that represents the notional start of the ACTION in terms of a day with defined operational meaning.	CHAR(6)
action-task-timing-hour-code	The specific value that represents the notional start of the ACTION in terms of an hour with defined operational meaning.	CHAR(6)
action-task-meteorological-impact-code	The specific value that represents a subjective indication of the effect of weather conditions on a specific operation.	CHAR(6)
action-task-operational-level-code	The specific value that represents the operational level of the specific ACTION-TASK.	CHAR(6)
candidate-target-list-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
organisation-structure-root-organisation-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
organisation-structure-index	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ActionTaskRuleOfEngagement

The imposition of a specific RULE-OF-ENGAGEMENT on a specific ACTION-TASK.

Wrapper Attribute	Description	JC3IEDM Physical Type
action-task-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
rule-of-engagement-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ActionTaskStatus

The perceived appraisal of the planning and execution progress of a particular ACTION-TASK as determined by the reporting organisation.

Wrapper Attribute	Description	JC3IEDM Physical Type
action-task-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-task-status-index	"The unique value, or set of characters, assigned to represent a specific ACTION-TASK-STATUS for a specific ACTION-TASK and to distinguish it from all other ACTION-TASK-STATUSES for that ACTION-TASK."	NUMBER(20)
action-task-status-category-code	The specific value that represents the perceived class of a specific ACTION-TASK at a given time.	CHAR(6)

action-task-status-completion-ratio	The numeric quotient value that represents the portion of a whole ACTION-TASK that is estimated to have occurred or been accomplished. The value must be in the range from 0 to 1.	NUMBER(6,5)
action-task-status-planning-indicator-code	The specific value that denotes at the reporting time whether an ACTION-TASK is completed in the planning process.	CHAR(6)
action-task-status-progress-code	The specific value that represents the perceived appraisal of the progress of a specific ACTION-TASK.	CHAR(6)
action-task-status-amend-timing-code	The specific value that denotes request or requirement to modify the timing associated with a specific ACTION-TASK.	CHAR(6)
action-task-status-approval-indicator-code	The specific value that denotes at the reporting time whether an ACTION-TASK is approved for execution.	CHAR(6)
action-task-status-feint-indicator-code	The specific value that indicates whether the ACTION-TASK is a feint.	CHAR(6)
reporting-data-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ActionTemporalAssociation

The relationship of an ACTION as a subject to another ACTION as an object in order to specify time dependence.

Wrapper Attribute	Description	JC3IEDM Physical Type
action-temporal-association-subject-action-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-temporal-association-object-action-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)

action-temporal-association-index	"The unique value, or set of characters, assigned to represent a specific ACTION-TEMPORAL-ASSOCIATION for a specific subject ACTION and a specific object ACTION and to distinguish it from all other ACTION-TEMPORAL-ASSOCIATIONS for those ACTIONS."	NUMBER(20)
action-temporal-association-category-code	The specific value that represents the class of chronological relationship of a subject ACTION to an object ACTION for a specific ACTION-TEMPORAL-ASSOCIATION.	CHAR(6)
action-temporal-association-reference-duration	The numeric value that represents a quantity of time in milliseconds that elapses after the start or end of a specific object ACTION that a subject ACTION is referenced to for its execution.	CHAR(19)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Address

Precise information on the basis of which a physical or electronic destination may be accessed.

Wrapper Attribute	Description	JC3IEDM Physical Type
address-id	"The unique value, or set of characters, assigned to represent a specific ADDRESS and to distinguish it from all other ADDRESSES."	NUMBER(20)
address-category-code	The specific value that represents the class of ADDRESS. It serves as a discriminator that partitions ADDRESS into subtypes.	CHAR(6)
address-place-name-text	The character string assigned to represent the name of the place related to the subject address.	VARCHAR(100)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Affiliation

"A specification of a country, nationality, ethnic group, functional group, exercise group, or religion to which membership or allegiance may be ascribed."

Wrapper Attribute	Description	JC3IEDM Physical Type
affiliation-id	"The unique value, or set of characters, assigned to represent a specific AFFILIATION and to distinguish it from all other AFFILIATIONS."	NUMBER(20)
affiliation-category-code	The specific value that represents the class of AFFILIATION. It serves as a discriminator that partitions AFFILIATION into subtypes.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

AffiliationEthnicGroup

A specification of an ethnic group to which membership or allegiance may be ascribed.

Wrapper Attribute	Description	JC3IEDM Physical Type
affiliation-id	"The unique value, or set of characters, assigned to represent a specific AFFILIATION and to distinguish it from all other AFFILIATIONS."	NUMBER(20)
affiliation-ethnic-group-code	The specific value that represents an ethnic group in a specific AFFILIATION-ETHNIC-GROUP.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

AffiliationFunctionalGroup

A specification of a functional group characterised by its primary purpose to which membership or allegiance may be ascribed.

Wrapper Attribute	Description	JC3IEDM Physical Type
affiliation-id	"The unique value, or set of characters, assigned to represent a specific AFFILIATION and to distinguish it from all other AFFILIATIONS."	NUMBER(20)
affiliation-functional-group-code	The specific value that represents the category of functional group.	CHAR(6)
affiliation-functional-group-name-text	The character string assigned to represent a specific AFFILIATION-FUNCTIONAL-GROUP.	VARCHAR(50)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

AffiliationGeopolitical

A specification of a country or political entity to which membership or allegiance may be ascribed.

Wrapper Attribute	Description	JC3IEDM Physical Type
affiliation-id	"The unique value, or set of characters, assigned to represent a specific AFFILIATION and to distinguish it from all other AFFILIATIONS."	NUMBER(20)
affiliation-geopolitical-code	"The specific value that represents the identification of the independent first-level geographic-political area and its dependencies, areas of quasi-independence, and areas with special unrecognised sovereignty, including outlying and disputed areas."	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

AffiliationReligion

A specification of a religion to which membership or allegiance may be ascribed.

Wrapper Attribute	Description	JC3IEDM Physical Type
affiliation-id	"The unique value, or set of characters, assigned to represent a specific AFFILIATION and to distinguish it from all other AFFILIATIONS."	NUMBER(20)
affiliation-religion-code	The specific value that represents a religion in a specific AFFILIATION-RELIGION.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

AirRouteSegment

"A portion of a route to be flown usually without an intermediate stop, as defined by two consecutive significant points."

Wrapper Attribute	Description	JC3IEDM Physical Type
air-route-segment-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
air-route-segment-required-navigation-performance-code	The specific value that represents the required navigation performance when flying routes for which external route navigation aids are not provided.	CHAR(6)
air-route-segment-civil-military-code	The specific value that represents the civil/military status of the AIR-ROUTE-SEGMENT.	CHAR(6)
air-route-segment-international-route-code	The specific value that represents the domestic/international status of the AIR-ROUTE-SEGMENT.	CHAR(6)
air-route-segment-maintained-speed-rate	The numeric value that denotes the speed of movement to be maintained between route points. The unit of measure is kilometres per hour. The specified value must be greater than or equal to 0 (zero).	NUMBER(8,4)
air-route-segment-description-text	The character string assigned to represent the description of specific AIR-ROUTE-SEGMENT.	VARCHAR(255)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

AircraftType

An EQUIPMENT-TYPE that is designed to fly.

Wrapper Attribute	Description	JC3IEDM Physical Type
aircraft-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPES."	NUMBER(20)
aircraft-type-category-code	The specific value that represents the class of AIRCRAFT-TYPE.	CHAR(6)
aircraft-type-airframe-design-code	The specific value that represents the design of the airframe of an AIRCRAFT-TYPE.	CHAR(6)
aircraft-type-model-code	The specific value that represents the specific design of an AIRCRAFT-TYPE.	CHAR(6)
aircraft-type-manning-code	The specific value that represents whether an aircraft is designed to be manned or unmanned.	CHAR(6)
aircraft-type-military-civilian-code	The specific value that represents whether an aircraft is primarily intended for military or civilian use.	CHAR(6)
aircraft-type-main-purpose-code	The specific value that represents the main purpose of an AIRCRAFT-TYPE.	CHAR(6)
aircraft-type-design-role-code	The specific value that represents the designed role of an AIRCRAFT-TYPE.	CHAR(6)
aircraft-type-design-range-code	The specific value that represents the designed range of an AIRCRAFT-TYPE.	CHAR(6)

aircraft-type-weather-qualifier-code	The specific value that represents the weather conditions in which an AIRCRAFT-TYPE can perform its mission.	CHAR(6)
aircraft-type-training-category-code	The specific value that denotes whether an aircraft can be used for training purposes.	CHAR(6)
aircraft-type-load-category-code	The specific value that represents a loading capability of an AIRCRAFT-TYPE.	CHAR(6)
aircraft-type-takeoff-and-landing-code	The specific value that represents the takeoff and landing designation of an AIRCRAFT-TYPE.	CHAR(6)
aircraft-type-wing-span-dimension	The one-dimensional linear distance representing the spread of the wings of a specific AIRCRAFT-TYPE measured from end to end.	NUMBER(12,3)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Airfield

"A FACILITY that is an area prepared for the accommodation (including any buildings, installations, or equipment) of landing and take off of aircraft."

Wrapper Attribute	Description	JC3IEDM Physical Type
airfield-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
airfield-air-traffic-control-presence-indicator-code	The specific value that indicates whether a specific AIRFIELD provides air traffic control.	CHAR(6)
airfield-hangar-area-quantity	The numeric value that represents the total hangar area in a specific AIRFIELD. The unit of measure is square metre.	NUMBER(6)
airfield-instrument-landing-system-presence-indicator-code	The specific value that indicates whether a specific AIRFIELD has an instrument landing system.	CHAR(6)

airfield-international-civil-aviation-organisation-text	The character string assigned to represent the description the international civil aviation organization (ICAO) identifier commonly used throughout the world for reference to a known aviation facility.	VARCHAR(100)
airfield-visual-navigational-aid-indicator-code	The specific value indicating whether or not the airport has a visual navigational aid displaying flashes of white or colored light to indicate the location of an airport.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

AirfieldStatus

A FACILITY-STATUS that is a record of conditions of a specific AIRFIELD.

Wrapper Attribute	Description	JC3IEDM Physical Type
airfield-status-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-status-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
airfield-status-day-operations-code	The specific value that indicates the status of a specific AIRFIELD to only operate during daylight.	CHAR(6)
airfield-status-flight-support-category-code	The specific value that indicates the capability of a specific AIRFIELD to function under defined flight rules.	CHAR(6)
airfield-status-evaluation-indicator-code	The specific value that indicates that an AIRFIELD has been checked and its characteristics have been verified.	CHAR(6)
airfield-status-maximum-nbac-throughput-count	The integer value representing the maximum count of narrow body civilian aircrafts (NBAC) that specific AIRFIELD can process per day.	NUMBER(4)
airfield-status-maximum-nbac-park-count	The integer value representing the maximum count of narrow body civilian aircrafts (NBAC) that can be parked at a specific AIRFIELD at one time.	NUMBER(4)

airfield-status-maximum-wbac-throughput-count	The integer value representing the maximum count of wide body civilian aircrafts (WBAC) that specific AIRFIELD can process per day.	NUMBER(4)
airfield-status-maximum-wbac-park-count	The integer value representing the maximum count of wide body civilian aircrafts (WBAC) that can be parked at a specific AIRFIELD at one time.	NUMBER(4)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

AirfieldType

"A FACILITY-TYPE that is a class of an area prepared for the accommodation (including any buildings, installations, or equipment) of landing and take off of aircraft."

Wrapper Attribute	Description	JC3IEDM Physical Type
airfield-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPEs."	NUMBER(20)
airfield-type-use-category-code	The specific value indicating an airport's main use.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

AirspaceControlMeans

"A CONTROL-FEATURE that reserves airspace for specific airspace users, restricts the action of airspace users, controls the actions of specific airspace users, and/or requires airspace users to accomplish specific actions."

Wrapper Attribute	Description	JC3IEDM Physical Type
airspace-control-means-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
airspace-control-means-transit-instruction-text	The character string assigned to represent the specific transit instructions for a specific airspace.	VARCHAR(100)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

AmmunitionType

"A CONSUMABLE-MATERIEL-TYPE that is a complete device charged with explosives, propellants, pyrotechnics, initiating composition, or nuclear, biological, or chemical material for use in military operations."

Wrapper Attribute	Description	JC3IEDM Physical Type
ammunition-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPEs."	NUMBER(20)
ammunition-type-category-code	The specific value that represents the class of AMMUNITION-TYPE.	CHAR(6)
ammunition-type-calibre-text	The character string assigned to represent a specific calibre of an AMMUNITION-TYPE.	VARCHAR(15)
ammunition-type-mine-maritime-firing-code	The specific value that represents the firing mechanism for a maritime mine.	CHAR(6)
ammunition-type-exercise-mine-flare-colour-code	The specific value that represents the colour of the flare released by the exercise mine.	CHAR(6)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Anchorage

A FACILITY that is a place where vessels anchor.

Wrapper Attribute	Description	JC3IEDM Physical Type
anchorage-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
anchorage-bottom-type-code	"The specific value that represents the description of the ground under the water of a lake, river, ocean, or other body of water at a specific ANCHORAGE."	CHAR(6)
anchorage-day-limit-net-explosive-quantity	The numeric value that represents the maximum net explosive quantity that can be handled at the ANCHORAGE during the day. The unit of measure is kilogram.	NUMBER(6)
anchorage-draught-high-tide-dimension	The one-dimensional linear distance representing the maximum draught of vessel at high tide that the specific ANCHORAGE can accommodate.	NUMBER(12,3)
anchorage-draught-low-tide-dimension	The one-dimensional linear distance representing the maximum draught of vessel at low tide that the specific ANCHORAGE can accommodate.	NUMBER(12,3)
anchorage-moorings-type-code	The specific value that represents the class of mooring available at the specific ANCHORAGE.	CHAR(6)
anchorage-night-limit-net-explosive-quantity	The numeric value that represents the maximum net explosive quantity that can be handled at the ANCHORAGE during the night. The unit of measure is kilogram.	NUMBER(6)
anchorage-prevailing-wind-direction-code	The specific value that represents the direction of the wind that most frequently occurs for the specific ANCHORAGE.	CHAR(6)
anchorage-vessel-tonnage-quantity	The numeric value that represents the maximum tonnage of a vessel that can be accommodated at a specific ANCHORAGE. The unit of measure is metric ton.	NUMBER(9)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ApproachDirection

A CONTROL-FEATURE that specifies approach directional details for takeoff and landing.

Wrapper Attribute	Description	JC3IEDM Physical Type
approach-direction-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
approach-direction-category-code	"The specific value that differentiates between left, right and centre parallel runways, Short Takeoff and Landing (STOL) or true as applicable."	CHAR(6)
approach-direction-angle-text	"The character string assigned to represent a runway in terms of a whole number nearest one-tenth of the magnetic azimuth of the centreline of the runway, measured clockwise from magnetic north (where six degrees is used as the break off point for the next highest number)."	VARCHAR(3)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Apron

"A FACILITY that is an area intended for parking, loading, unloading and/or servicing."

Wrapper Attribute	Description	JC3IEDM Physical Type
apron-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
apron-weight-bearing-capacity-quantity	The numeric value that denotes the maximum gravitational force exerted on the surface of a specific APRON. The unit of measure is kilograms per square centimetre.	NUMBER(8,4)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Atmosphere

"A METEOROLOGIC-FEATURE that specifies humidity, pressure, and temperature characteristics of Earth's atmosphere."

Wrapper Attribute	Description	JC3IEDM Physical Type
atmosphere-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
atmosphere-humidity-ratio	The numeric quotient value that represents the proportion of water present in the air to the maximum amount of water (saturation point) possible at a given temperature and pressure. The value must be in the range from 0 to 1.	NUMBER(6,5)
atmosphere-inversion-layer-code	The specific value that represents the height of the inversion layer in the atmosphere. The stability class describes the degree of mixing of released material in the atmosphere.	CHAR(6)
atmosphere-pressure-quantity	The numeric value that denotes the ambient air in terms of force per unit area. The unit of measure is newtons per square metre.	NUMBER(8,4)
atmosphere-pressure-system-category-code	The specific value that represents the class of a pressure system in a particular ATMOSPHERE.	CHAR(6)
atmosphere-temperature	The numeric value that indicates the heat of the ambient air for a specific ATMOSPHERE.	NUMBER(5,1)
atmosphere-temperature-gradient-code	The specific value that represents heat change with respect to the ground and 100 m in elevation in a certain area. Acts as an indication of vertical air movement between the ground and higher elevations.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Basin

"A FACILITY that is an open area of water, usually artificial and enclosed by dock gates lined with wharves, warehouses and berths to enable vessels to load and unload."

Wrapper Attribute	Description	JC3IEDM Physical Type
basin-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
basin-deadweight-tonnage-quantity	The numeric value that represents the maximum deadweight tonnage that can be accommodated for a vessel at the specific BASIN. The unit of measure is metric ton.	NUMBER(9)
basin-depth-dimension	The one-dimensional linear distance representing the depth of water available at the BASIN at low tide.	NUMBER(12,3)
basin-location-text	The character string assigned to represent a statement of the details that relate to the specific BASIN.	VARCHAR(255)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Berth

A FACILITY that is a space or length in the water at a harbour allocated to or reserved for a vessel to dock and moor for loading or unloading.

Wrapper Attribute	Description	JC3IEDM Physical Type
berth-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
berth-deadweight-tonnage-quantity	The numeric value that represents the maximum deadweight tonnage that can be accommodated for a vessel at the specific BERTH. The unit of measure is metric ton.	NUMBER(9)
berth-depth-dimension	The one-dimensional linear distance representing the depth of water available at the BERTH at low tide.	NUMBER(12,3)

berth-location-text	The character string assigned to represent a statement of the details that relate to the specific BERTH.	VARCHAR(255)
berth-major-vessel-class-code	The specific value that represents the class of vessels to be serviced.	CHAR(6)
berth-maximum-beam-dimension	"The one-dimensional linear distance representing the width athwartships, including all projections, of the largest vessel a specific berth can process."	NUMBER(12,3)
berth-maximum-capacity-quantity	The numeric value that represents the maximum tonnage a specific berth can process per day. The unit of measure is Gross Registered Tonnage (GRT).	NUMBER(6)
berth-maximum-vessel-count	The integer value representing the maximum number of vessels a specific berth can process at the same time.	NUMBER(2)
berth-day-limit-net-explosive-quantity	The numeric value that represents the maximum net explosive quantity that can be handled at the BERTH during the day. The unit of measure is kilogram.	NUMBER(6)
berth-night-limit-net-explosive-quantity	The numeric value that represents the maximum net explosive quantity that can be handled at the BERTH during the night. The unit of measure is kilogram.	NUMBER(6)
berth-rail-availability-indicator-code	The specific value that represents the availability of railroad transportation capability at a specific berth.	CHAR(6)
berth-roll-on-roll-off-indicator-code	The specific value that represents whether or not the berth has roll on/roll off capabilities.	CHAR(6)
berth-turnaround-time-duration	"The numeric value that represents a quantity of time in milliseconds representing the average units of time for the process of docking, unloading, reloading and undocking a ship for a specific berth."	CHAR(19)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

BiologicalMaterielType

"A CONSUMABLE-MATERIEL-TYPE that is either a microorganism that causes disease in man, plants, or animals or causes the deterioration of materiel; or a toxin, produced by an animal, plant, or microorganism, which may kill, seriously injure, or incapacitate personnel through its physiological effects."

Wrapper Attribute	Description	JC3IEDM Physical Type
biological-materiel-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPES."	NUMBER(20)
biological-materiel-type-category-code	The specific value that represents the class of BIOLOGICAL-MATERIEL-TYPE.	CHAR(6)
biological-materiel-type-subcategory-code	The specific value that represents the detailed class of a specific BIOLOGICAL-MATERIEL-TYPE.	CHAR(6)
biological-materiel-type-persistency-code	The specific value that represents the temporal variation of the effectiveness of a BIOLOGICAL-MATERIEL-TYPE under determined conditions after its dispersal.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Bridge

"A FACILITY that is a structure (including overpass and viaduct), fixed or moveable, spanning and/or providing passage over an object."

Wrapper Attribute	Description	JC3IEDM Physical Type
bridge-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
bridge-longest-span-length-dimension	The one-dimensional linear distance representing the longest span's length in a specific BRIDGE.	NUMBER(12,3)
bridge-span-count	The integer value representing the number of sections that a specific BRIDGE may have.	NUMBER(3)

bridge-usage-code	The specific value that represents the usage of a specific BRIDGE.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

BridgeType

"A FACILITY-TYPE that is a class of structures (including overpasses and viaducts), fixed or moveable, spanning and/or providing passage over an object."

Wrapper Attribute	Description	JC3IEDM Physical Type
bridge-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPEs."	NUMBER(20)
bridge-type-design-type-code	The specific value that represents the design class of BRIDGE-TYPE.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

CandidateTargetDetail

An element of CANDIDATE-TARGET-LIST.

Wrapper Attribute	Description	JC3IEDM Physical Type
candidate-target-list-id	"The unique value, or set of characters, assigned to represent a specific CANDIDATE-TARGET-LIST and to distinguish it from all other CANDIDATE-TARGET-LISTs."	NUMBER(20)

candidate-target-detail-index	"The unique value, or set of characters, assigned to represent a specific CANDIDATE-TARGET-DETAIL for a specific CANDIDATE-TARGET-LIST and to distinguish it from all other CANDIDATE-TARGET-DETAILs for that CANDIDATE-TARGET-LIST."	NUMBER(20)
candidate-target-detail-category-code	The specific value that denotes a CANDIDATE-TARGET-DETAIL as being an item or a type. It serves as a discriminator that partitions CANDIDATE-TARGET-DETAIL into subtypes.	CHAR(6)
candidate-target-detail-focus-type-code	The specific value that denotes a general class of actions intended by the nominating authority for a specific CANDIDATE-TARGET-DETAIL.	CHAR(6)
candidate-target-detail-label-text	The character string assigned to represent the identity of a specific CANDIDATE-TARGET-DETAIL in accordance with a specific scheme.	VARCHAR(255)
candidate-target-detail-priority-ordinal	The integer value that indicates the rank of importance of a specific CANDIDATE-TARGET-DETAIL in the view of nominating authority.	NUMBER(6)
candidate-target-detail-scheme-code	The specific value that denotes an identification scheme used for recording a CANDIDATE-TARGET-DETAIL.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

CandidateTargetDetailAssociation

A relationship of a CANDIDATE-TARGET-DETAIL as a subject with another CANDIDATE-TARGET-DETAIL as an object.

Wrapper Attribute	Description	JC3IEDM Physical Type
candidate-target-detail-association-subject-candidate-target-list-id	"The unique value, or set of characters, assigned to represent a specific CANDIDATE-TARGET-LIST and to distinguish it from all other CANDIDATE-TARGET-LISTS."	NUMBER(20)
candidate-target-detail-association-subject-candidate-target-detail-index	"The unique value, or set of characters, assigned to represent a specific CANDIDATE-TARGET-LIST and to distinguish it from all other CANDIDATE-TARGET-LISTS."	NUMBER(20)
candidate-target-detail-association-object-candidate-target-list-id	"The unique value, or set of characters, assigned to represent a specific CANDIDATE-TARGET-LIST and to distinguish it from all other CANDIDATE-TARGET-LISTS."	NUMBER(20)

candidate-target-detail-association-object-candidate-target-detail-index	"The unique value, or set of characters, assigned to represent a specific CANDIDATE-TARGET-LIST and to distinguish it from all other CANDIDATE-TARGET-LISTS."	NUMBER(20)
candidate-target-detail-association-category-code	The specific value that represents the class of CANDIDATE-TARGET-DETAIL-ASSOCIATION.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

CandidateTargetDetailAuthorisation

The designation by competent authority of an instance of CANDIDATE-TARGET-DETAIL as an approved objective in planning battlespace activities.

Wrapper Attribute	Description	JC3IEDM Physical Type
candidate-target-list-id	"The unique value, or set of characters, assigned to represent a specific CANDIDATE-TARGET-LIST and to distinguish it from all other CANDIDATE-TARGET-LISTS."	NUMBER(20)
candidate-target-detail-index	"The unique value, or set of characters, assigned to represent a specific CANDIDATE-TARGET-LIST and to distinguish it from all other CANDIDATE-TARGET-LISTS."	NUMBER(20)
candidate-target-detail-authorisation-index	"The unique value, or set of characters, assigned to represent a specific CANDIDATE-TARGET-DETAIL-AUTHORISATION for a specific CANDIDATE-TARGET-DETAIL and to distinguish it from all other CANDIDATE-TARGET-DETAIL-AUTHORISATIONS for that CANDIDATE-TARGET-DETAIL."	NUMBER(20)
candidate-target-detail-authorisation-approval-code	The specific value that represents the type of approval that a specific CANDIDATE-TARGET-DETAIL is authorised for further consideration in planning military operations.	CHAR(6)
candidate-target-detail-authorisation-priority-ordinal	The integer value that indicates the rank of importance of a specific CANDIDATE-TARGET-DETAIL in the view of authorising authority.	NUMBER(6)
reporting-data-id	"The unique value, or set of characters, assigned to represent a specific CANDIDATE-TARGET-LIST and to distinguish it from all other CANDIDATE-TARGET-LISTS."	NUMBER(20)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

CandidateTargetDetailItem

An instance of CANDIDATE-TARGET-DETAIL that is an OBJECT-ITEM.

Wrapper Attribute	Description	JC3IEDM Physical Type
candidate-target-list-id	"The unique value, or set of characters, assigned to represent a specific CANDIDATE-TARGET-LIST and to distinguish it from all other CANDIDATE-TARGET-LISTS."	NUMBER(20)
candidate-target-detail-item-index	"The unique value, or set of characters, assigned to represent a specific CANDIDATE-TARGET-LIST and to distinguish it from all other CANDIDATE-TARGET-LISTS."	NUMBER(20)
object-item-id	"The unique value, or set of characters, assigned to represent a specific CANDIDATE-TARGET-LIST and to distinguish it from all other CANDIDATE-TARGET-LISTS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

CandidateTargetDetailType

An instance of CANDIDATE-TARGET-DETAIL that is an OBJECT-TYPE.

Wrapper Attribute	Description	JC3IEDM Physical Type
candidate-target-list-id	"The unique value, or set of characters, assigned to represent a specific CANDIDATE-TARGET-LIST and to distinguish it from all other CANDIDATE-TARGET-LISTS."	NUMBER(20)
candidate-target-detail-type-index	"The unique value, or set of characters, assigned to represent a specific CANDIDATE-TARGET-LIST and to distinguish it from all other CANDIDATE-TARGET-LISTS."	NUMBER(20)

object-type-id	"The unique value, or set of characters, assigned to represent a specific CANDIDATE-TARGET-LIST and to distinguish it from all other CANDIDATE-TARGET-LISTS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

CandidateTargetList

"A list of selected battlespace objects or types that have potential value for destruction or exploitation, nominated by competent authority for consideration in planning battlespace activities."

Wrapper Attribute	Description	JC3IEDM Physical Type
candidate-target-list-id	"The unique value, or set of characters, assigned to represent a specific CANDIDATE-TARGET-LIST and to distinguish it from all other CANDIDATE-TARGET-LISTS."	NUMBER(20)
candidate-target-list-name-text	The character string assigned to represent a specific CANDIDATE-TARGET-LIST.	VARCHAR(80)
reporting-data-id	"The unique value, or set of characters, assigned to represent a specific REPORTING-DATA and to distinguish it from all other REPORTING-DATAs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

CandidateTargetListAssociation

A relationship of a CANDIDATE-TARGET-LIST as a subject with another CANDIDATE-TARGET-LIST as an object.

Wrapper Attribute	Description	JC3IEDM Physical Type
candidate-target-list-association-subject-candidate-target-list-id	"The unique value, or set of characters, assigned to represent a specific CANDIDATE-TARGET-LIST and to distinguish it from all other CANDIDATE-TARGET-LISTS."	NUMBER(20)

candidate-target-list-association-object-candidate-target-list-id	"The unique value, or set of characters, assigned to represent a specific CANDIDATE-TARGET-LIST and to distinguish it from all other CANDIDATE-TARGET-LISTS."	NUMBER(20)
candidate-target-list-association-category-code	The specific value that represents the class of CANDIDATE-TARGET-LIST-ASSOCIATION.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

CandidateTargetListAuthorisation

The designation by competent authority of a CANDIDATE-TARGET-LIST as an approved source of objectives in planning battlespace activities.

Wrapper Attribute	Description	JC3IEDM Physical Type
candidate-target-list-id	"The unique value, or set of characters, assigned to represent a specific CANDIDATE-TARGET-LIST and to distinguish it from all other CANDIDATE-TARGET-LISTS."	NUMBER(20)
candidate-target-list-authorisation-index	"The unique value, or set of characters, assigned to represent a specific CANDIDATE-TARGET-LIST-AUTHORISATION for a specific CANDIDATE-TARGET-LIST and to distinguish it from all other CANDIDATE-TARGET-LIST-AUTHORISATIONS for that CANDIDATE-TARGET-LIST."	NUMBER(20)
candidate-target-list-authorisation-indicator-code	The specific value that denotes whether a specific CANDIDATE-TARGET-LIST is authorised further consideration in planning military operations.	CHAR(6)
candidate-target-list-authorisation-priority-ordinal	The integer value that indicates the rank of importance of a specific CANDIDATE-TARGET-LIST in the view of authorising authority.	NUMBER(6)
reporting-data-id	"The unique value, or set of characters, assigned to represent a specific CANDIDATE-TARGET-LIST and to distinguish it from all other CANDIDATE-TARGET-LISTS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Capability

"The potential ability to do work, perform a function or mission, achieve an objective, or provide a service."

Wrapper Attribute	Description	JC3IEDM Physical Type
capability-id	"The unique value, or set of characters, assigned to represent a specific CAPABILITY and to distinguish it from all other CAPABILITIES."	NUMBER(20)
capability-category-code	The specific value that represents the general class of a CAPABILITY. It serves as a discriminator that partitions CAPABILITY into subtypes.	CHAR(6)
capability-day-night-code	The specific value that defines the light conditions that apply to a particular CAPABILITY.	CHAR(6)
capability-unit-of-measure-code	The specific value that represents the quantities in terms of which the magnitude of a specific CAPABILITY descriptor is stated.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

CapabilityReferenceAssociation

A relationship between a specific CAPABILITY and a specific REFERENCE.

Wrapper Attribute	Description	JC3IEDM Physical Type
capability-id	"The unique value, or set of characters, assigned to represent a specific CAPABILITY and to distinguish it from all other CAPABILITIES."	NUMBER(20)
reference-id	"The unique value, or set of characters, assigned to represent a specific CAPABILITY and to distinguish it from all other CAPABILITIES."	NUMBER(20)
capability-reference-association-category-code	The specific value that represents the class of a specific CAPABILITY-REFERENCE-ASSOCIATION.	CHAR(6)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

CartesianPoint

An ABSOLUTE-POINT that has its position specified in a three-dimensional Earth-centred Cartesian system.

Wrapper Attribute	Description	JC3IEDM Physical Type
cartesian-point-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
cartesian-point-x-coordinate-dimension	"The one-dimensional linear distance representing the X-component of a coordinate which expresses the position of a point in a three-dimensional Cartesian coordinate system that is fixed to the earth, where the X-axis lies in the planes of the Equator and the Greenwich meridian."	NUMBER(12,3)
cartesian-point-y-coordinate-dimension	The one-dimensional linear distance representing the Y-component of a coordinate which expresses the position of a point in a three-dimensional Cartesian coordinate system that is fixed to the earth where the Y-axis is perpendicular to both the X- and Z-axes completing the right-handed coordinate system.	NUMBER(12,3)
cartesian-point-z-coordinate-dimension	"The one-dimensional linear distance representing the Z-component of a coordinate which expresses the position of a point in a three-dimensional Cartesian coordinate system that is fixed to the earth, where the Z-axis coincides with the mean rotation axis of the Earth."	NUMBER(12,3)
cartesian-point-x-precision-code	The specific value that represents the resolution used for the expression of a value of a Cartesian x-coordinate.	CHAR(6)
cartesian-point-y-precision-code	The specific value that represents the resolution used for the expression of a value of a Cartesian y-coordinate.	CHAR(6)
cartesian-point-z-precision-code	The specific value that represents the resolution used for the expression of a value of a Cartesian z-coordinate.	CHAR(6)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

CbrnEquipmentType

"An EQUIPMENT-TYPE that is designed for specialised roles in detecting, decontaminating or reconnoitring CBRN agents."

Wrapper Attribute	Description	JC3IEDM Physical Type
cbrn-equipment-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPEs."	NUMBER(20)
cbrn-equipment-type-category-code	The specific value that represents the class of CBRN-EQUIPMENT-TYPE.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

CbrnEvent

"An ACTION-EVENT that involves chemical, biological, radiological or nuclear materiel individually or in combination."

Wrapper Attribute	Description	JC3IEDM Physical Type
cbrn-event-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
cbrn-event-category-code	The specific value that represents the class of CBRN-EVENT. It serves as a discriminator that partitions CBRN-EVENT into subtypes.	CHAR(6)

cbrn-event-subcategory-code	The specific value that represents the detailed class or nature of activity prescribed by CBRN-EVENT.	CHAR(6)
cbrn-event-alarm-result-indicator-code	The specific value that denotes whether a detector has indicated the presence of a CBRN-EVENT.	CHAR(6)
cbrn-event-confirmation-test-indicator-code	The specific value that denotes whether a test confirms the presence of a CBRN-EVENT.	CHAR(6)
cbrn-event-materiel-container-type-code	The specific value that represents the type of container that stores the materiel (agent) involved in a specific CBRN-EVENT and characterised in ATP-45.	CHAR(6)
cbrn-event-materiel-container-total-count	The integer value representing the number of [materiel] agent containers involved in a specific CBRN-EVENT and characterised in ATP-45.	NUMBER(4)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ChemicalBiologicalEvent

A CBRN-EVENT involving chemical and/or biological materiel.

Wrapper Attribute	Description	JC3IEDM Physical Type
chemical-biological-event-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
chemical-biological-event-category-code	The specific value that represents the class of CHEMICAL-BIOLOGICAL-EVENT.	CHAR(6)
chemical-biological-event-release-category-code	The specific value that represents the class of release in a CHEMICAL-BIOLOGICAL-EVENT.	CHAR(6)
chemical-biological-event-spill-size-code	The specific value that represents the mass or the volume of a materiel spilled in a CHEMICAL-BIOLOGICAL-EVENT that is a release other than attack (ROTA).	CHAR(6)

chemical-biological-event-release-height-dimension	The one-dimensional linear distance representing the height above ground level at which the chemical or biological agent is released. Release height is frequently referred to as burst height.	NUMBER(12,3)
chemical-biological-event-volume-concentration-quantity	The numeric value that represents the level of chemical or biological contamination per unit volume in air or water. The unit of measure is milligrams per cubic metre (MGM3).	NUMBER(14,6)
chemical-biological-event-surface-deposition-quantity	The numeric value that represents the level of chemical or biological contamination per unit area on a surface. The unit of measure is milligrams per square metre (MGM2).	NUMBER(14,6)
chemical-biological-event-atmospheric-particle-concentration-quantity	The numeric value that represents the level of chemical or biological atmospheric contamination. The unit of measure is Agent Containing Particles Per Litre (ACPL).	NUMBER(14,6)
chemical-biological-event-mass-fraction-concentration-quantity	The numeric value that represents the number of "parts" by weight of a biological or chemical substance per million parts of water. The unit of measure is in Parts per Million (PPM).	NUMBER(14,6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ChemicalMaterielType

"A CONSUMABLE-MATERIEL-TYPE that is a substance that is not produced by a living organism, and does not emit radiation but may kill, seriously injure, or incapacitate personnel through its physiological effects or cause the deterioration of materiel."

Wrapper Attribute	Description	JC3IEDM Physical Type
chemical-materiel-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPES."	NUMBER(20)
chemical-materiel-type-category-code	The specific value that represents the general class of a specific CHEMICAL-MATERIEL-TYPE.	CHAR(6)
chemical-materiel-type-subcategory-code	The specific value that represents the detailed class of a specific CHEMICAL-MATERIEL-TYPE.	CHAR(6)
chemical-materiel-type-persistence-code	The specific value that represents the temporal variation of the effectiveness of a CHEMICAL-MATERIEL-TYPE under determined conditions after its dispersal.	CHAR(6)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

CivilianPostType

An ORGANISATION-TYPE with a set of duties that are intended to be fulfilled by one person in private sector and non-military government organisations.

Wrapper Attribute	Description	JC3IEDM Physical Type
civilian-post-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPEs."	NUMBER(20)
civilian-post-type-category-code	The specific value that represents the class of CIVILIAN-POST-TYPE.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

CloudCover

A METEOROLOGIC-FEATURE that specifies the characteristics of clouds above Earth's surface.

Wrapper Attribute	Description	JC3IEDM Physical Type
cloud-cover-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
cloud-cover-category-code	The specific value that represents the prevailing class of a specific CLOUD-COVER.	CHAR(6)
cloud-cover-base-dimension	The one-dimensional linear distance representing the elevation of the lowest cloud base for a specific CLOUD-COVER.	NUMBER(12,3)

cloud-cover-top-dimension	The one-dimensional linear distance representing the elevation of the highest cloud ceiling for a specific CLOUD-COVER.	NUMBER(12,3)
cloud-cover-average-coverage-code	The specific value that represents the average density of a specific CLOUD-COVER as fractional coverage.	CHAR(6)
cloud-cover-light-refraction-ratio	"The numeric quotient value that represents the velocity of light in a specific CLOUD-COVER as a fraction of the velocity of light in a vacuum, based on cloud height. This represents the inverse of the index of refraction. The value must be in the range from 0 to 1."	NUMBER(7,6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ComponentHeaderContent

Introductory subject matter intended to identify an element of a plan or order.

Wrapper Attribute	Description	JC3IEDM Physical Type
component-header-content-id	"The unique value, or set of characters, assigned to represent a specific COMPONENT-HEADER-CONTENT and to distinguish it from all other COMPONENT-HEADER-CONTENTS."	NUMBER(20)
component-header-content-topic-heading-text	The character string assigned to represent a user-defined topic in a specific COMPONENT-HEADER-CONTENT.	VARCHAR(255)
security-classification-id	"The unique value, or set of characters, assigned to represent a specific SECURITY-CLASSIFICATION and to distinguish it from all other SECURITY-CLASSIFICATIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ComponentTextContent

A textual statement of substantive subject matter.

Wrapper Attribute	Description	JC3IEDM Physical Type
component-text-content-id	"The unique value, or set of characters, assigned to represent a specific COMPONENT-TEXT-CONTENT and to distinguish it from all other COMPONENT-TEXT-CONTENTS."	NUMBER(20)
component-text-content-text	The character string that is the substantive textual content for a specific COMPONENT-TEXT-CONTENT.	VARCHAR(2000)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ConeVolume

A GEOMETRIC-VOLUME whose boundary is swept by a line that has a fixed point and another that moves along the path defined by the border of a specific SURFACE.

Wrapper Attribute	Description	JC3IEDM Physical Type
cone-volume-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
cone-volume-defining-surface-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
cone-volume-vertex-point-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ConsumableMaterielType

A MATERIEL-TYPE that is an expendable class of supply.

Wrapper Attribute	Description	JC3IEDM Physical Type
consumable-materiel-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPES."	NUMBER(20)
consumable-materiel-type-category-code	The specific value that represents the class of CONSUMABLE-MATERIEL-TYPE. It serves as a discriminator that partitions CONSUMABLE-MATERIEL-TYPE into subtypes.	CHAR(6)
consumable-materiel-type-subcategory-code	The specific value that represents the detailed class of a specific CONSUMABLE-MATERIEL-TYPE.	CHAR(6)
consumable-materiel-type-hazard-code	The specific value that represents a CONSUMABLE-MATERIEL-TYPE that requires special handling because of environmental or safety reasons.	CHAR(6)
consumable-materiel-type-issuing-element-code	The specific value that represents a standard unit in which a specific CONSUMABLE-MATERIEL-TYPE is made available.	CHAR(6)
consumable-materiel-type-issuing-count	The integer value representing the aggregated units in which a specific CONSUMABLE-MATERIEL-TYPE is made available.	NUMBER(9)
consumable-materiel-type-issuing-unit-of-measure-code	The specific value that represents the unit of measure of which a standard quantity (unit) of a specific CONSUMABLE-MATERIEL-TYPE is made available.	CHAR(6)
consumable-materiel-type-issuing-weight-quantity	The numeric value that represents the gravitational force exerted on an amount of a standard unit of issue for a specific CONSUMABLE-MATERIEL-TYPE when it is prepared for delivery. The unit of measure is kilogram.	NUMBER(12,3)
consumable-materiel-type-perishability-indicator-code	The specific value that represents whether a particular CONSUMABLE-MATERIEL-TYPE is liable to decay or spoil.	CHAR(6)
consumable-materiel-type-united-nations-number-code	The specific value that represents the United Nations (UN) Numbers that are four-digit numbers used world-wide in international commerce and transportation to identify hazardous chemicals or classes of hazardous materials.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Context

"A collection of information that provides in its entirety the circumstances, conditions, environment, or perspective for a situation."

Wrapper Attribute	Description	JC3IEDM Physical Type
context-id	"The unique value, or set of characters, assigned to represent a specific CONTEXT and to distinguish it from all other CONTEXTs."	NUMBER(20)
context-category-code	The specific value that represents the class of CONTEXT. It serves as a discriminator that partitions CONTEXT into subtypes.	CHAR(6)
context-name-text	The character string assigned to represent a specific CONTEXT.	VARCHAR(80)
security-classification-id	"The unique value, or set of characters, assigned to represent a specific SECURITY-CLASSIFICATION and to distinguish it from all other SECURITY-CLASSIFICATIONs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ContextAssessment

A record of appraisal by a specific ORGANISATION regarding the information that is referenced by a specific instance of CONTEXT.

Wrapper Attribute	Description	JC3IEDM Physical Type
context-id	"The unique value, or set of characters, assigned to represent a specific CONTEXT and to distinguish it from all other CONTEXTs."	NUMBER(20)
context-assessment-index	"The unique value, or set of characters, assigned to represent a specific CONTEXT-ASSESSMENT for a specific CONTEXT and to distinguish it from all other CONTEXT-ASSESSMENTs for that CONTEXT."	NUMBER(20)
context-assessment-text	The character string assigned to represent an appraisal regarding the information that is referenced by a specific instance of CONTEXT.	VARCHAR(2000)

context-assessment-limiting-factors-code	"The specific value that represents the logistic factors, which are degrading operational capability in a specific CONTEXT-ASSESSMENT."	CHAR(6)
reporting-data-id	"The unique value, or set of characters, assigned to represent a specific CONTEXT and to distinguish it from all other CONTEXTs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ContextAssociation

A relationship of a CONTEXT as a subject with another CONTEXT as an object.

Wrapper Attribute	Description	JC3IEDM Physical Type
context-association-subject-context-id	"The unique value, or set of characters, assigned to represent a specific CONTEXT and to distinguish it from all other CONTEXTs."	NUMBER(20)
context-association-object-context-id	"The unique value, or set of characters, assigned to represent a specific CONTEXT and to distinguish it from all other CONTEXTs."	NUMBER(20)
context-association-category-code	The specific value that represents the type of relationship between the subject CONTEXT and the object CONTEXT in a specific CONTEXT-ASSOCIATION.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ContextAssociationStatus

A record of the perceived state of a specific CONTEXT-ASSOCIATION as determined by the establishing organisation.

Wrapper Attribute	Description	JC3IEDM Physical Type
context-association-subject-context-id	"The unique value, or set of characters, assigned to represent a specific CONTEXT and to distinguish it from all other CONTEXTs."	NUMBER(20)
context-association-object-context-id	"The unique value, or set of characters, assigned to represent a specific CONTEXT and to distinguish it from all other CONTEXTs."	NUMBER(20)
context-association-status-index	"The unique value, or set of characters, assigned to represent a specific CONTEXT-ASSOCIATION-STATUS for a specific CONTEXT-ASSOCIATION and to distinguish it from all other CONTEXT-ASSOCIATION-STATUSs for that CONTEXT-ASSOCIATION."	NUMBER(20)
context-association-status-category-code	The specific value that indicates whether a specific CONTEXT-ASSOCIATION-STATUS refers to the beginning or termination of the association.	CHAR(6)
context-association-status-effective-datetime	The character string representing a point in time that designates the beginning of the period of effectiveness for a specific CONTEXT-ASSOCIATION-STATUS.	CHAR(18)
context-association-status-establishing-organisation-id	"The unique value, or set of characters, assigned to represent a specific CONTEXT and to distinguish it from all other CONTEXTs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ContextElement

A reference to a specific REPORTING-DATA that is a constituent part of a specific CONTEXT.

Wrapper Attribute	Description	JC3IEDM Physical Type
context-id	"The unique value, or set of characters, assigned to represent a specific CONTEXT and to distinguish it from all other CONTEXTs."	NUMBER(20)

context-element-index	"The unique value, or set of characters, assigned to represent a specific CONTEXT-ELEMENT for a specific CONTEXT and to distinguish it from all other CONTEXT-ELEMENTs for that CONTEXT."	NUMBER(20)
reporting-data-id	"The unique value, or set of characters, assigned to represent a specific CONTEXT and to distinguish it from all other CONTEXTs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ContextElementStatus

A record of the perceived state of a specific CONTEXT-ELEMENT as determined by the establishing organisation.

Wrapper Attribute	Description	JC3IEDM Physical Type
context-id	"The unique value, or set of characters, assigned to represent a specific CONTEXT and to distinguish it from all other CONTEXTs."	NUMBER(20)
context-element-index	"The unique value, or set of characters, assigned to represent a specific CONTEXT and to distinguish it from all other CONTEXTs."	NUMBER(20)
context-element-status-index	"The unique value, or set of characters, assigned to represent a specific CONTEXT-ELEMENT-STATUS for a specific CONTEXT-ELEMENT and to distinguish it from all other CONTEXT-ELEMENT-STATUSs for that CONTEXT-ELEMENT."	NUMBER(20)
context-element-status-category-code	The specific value that indicates whether a specific CONTEXT-ELEMENT-STATUS refers to the addition or removal of the CONTEXT-ELEMENT from the CONTEXT.	CHAR(6)
context-element-status-effective-datetime	The character string representing a point in time that designates the beginning of the period of effectiveness for a specific CONTEXT-ELEMENT-STATUS.	CHAR(18)
context-element-status-establishing-organisation-id	"The unique value, or set of characters, assigned to represent a specific CONTEXT and to distinguish it from all other CONTEXTs."	NUMBER(20)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ContextObjectItemAssociation

A relationship of a CONTEXT as a subject with an OBJECT-ITEM as an object.

Wrapper Attribute	Description	JC3IEDM Physical Type
context-id	"The unique value, or set of characters, assigned to represent a specific CONTEXT and to distinguish it from all other CONTEXTs."	NUMBER(20)
object-item-id	"The unique value, or set of characters, assigned to represent a specific CONTEXT and to distinguish it from all other CONTEXTs."	NUMBER(20)
context-object-item-association-category-code	The specific value that represents the type of relationship between a specific CONTEXT and a specific OBJECT-ITEM in a specific CONTEXT-OBJECT-ITEM-ASSOCIATION.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ContextObjectItemAssociationStatus

A record of the perceived state of a specific CONTEXT-OBJECT-ITEM-ASSOCIATION as determined by the establishing organisation.

Wrapper Attribute	Description	JC3IEDM Physical Type
context-id	"The unique value, or set of characters, assigned to represent a specific CONTEXT and to distinguish it from all other CONTEXTs."	NUMBER(20)
object-item-id	"The unique value, or set of characters, assigned to represent a specific CONTEXT and to distinguish it from all other CONTEXTs."	NUMBER(20)

context-object-item-association-status-index	"The unique value, or set of characters, assigned to represent a specific CONTEXT-OBJECT-ITEM-ASSOCIATION-STATUS for a specific CONTEXT-OBJECT-ITEM-ASSOCIATION and to distinguish it from all other CONTEXT-OBJECT-ITEM-ASSOCIATION-STATUSs for that CONTEXT-OBJECT-ITEM-ASSOCIATION."	NUMBER(20)
context-object-item-association-status-category-code	The specific value that indicates whether a specific CONTEXT-OBJECT-ITEM-ASSOCIATION-STATUS refers to the beginning or termination of the association.	CHAR(6)
context-object-item-association-status-effective-datetime	The character string representing a point in time that designates the beginning of the period of effectiveness for a specific CONTEXT-OBJECT-ITEM-ASSOCIATION-STATUS.	CHAR(18)
context-object-item-association-status-establishing-organisation-id	"The unique value, or set of characters, assigned to represent a specific CONTEXT and to distinguish it from all other CONTEXTs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ContextReportingDataAssociation

A relationship of a CONTEXT as a subject and a REPORTING-DATA as an object.

Wrapper Attribute	Description	JC3IEDM Physical Type
context-id	"The unique value, or set of characters, assigned to represent a specific CONTEXT and to distinguish it from all other CONTEXTs."	NUMBER(20)
reporting-data-id	"The unique value, or set of characters, assigned to represent a specific CONTEXT and to distinguish it from all other CONTEXTs."	NUMBER(20)
context-reporting-data-association-category-code	The specific value that represents the type of relation of a specific CONTEXT with a specific REPORTING-DATA.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ControlFeature

"A non-tangible FEATURE of military interest that is administratively specified, may be represented by a geometric figure, and is associated with the conduct of military operations."

Wrapper Attribute	Description	JC3IEDM Physical Type
control-feature-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
control-feature-category-code	The specific value that represents the class of CONTROL-FEATURE. It serves as a discriminator that partitions CONTROL-FEATURE into subtypes.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ControlFeatureStatus

An OBJECT-ITEM-STATUS that is a record of condition of a specific CONTROL-FEATURE.

Wrapper Attribute	Description	JC3IEDM Physical Type
control-feature-status-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-status-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
control-feature-status-investigation-status-code	The specific value that represents the investigation status of the site encompassed by a specific CONTROL-FEATURE.	CHAR(6)
control-feature-status-cbrn-threat-level-code	The specific value that represents the assessed CBRN threat level status of a specific CONTROL-FEATURE that defines a given operational area for friendly forces.	CHAR(6)
control-feature-status-security-status-code	The specific value that represents the protection status of the site encompassed by a specific CONTROL-FEATURE.	CHAR(6)

control-feature-status-usage-status-code	The specific value that represents the usage of a specific CONTROL-FEATURE.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ControlFeatureType

A non-tangible FEATURE-TYPE of military interest that may be represented as a geometric figure and is associated with the conduct of military operations.

Wrapper Attribute	Description	JC3IEDM Physical Type
control-feature-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPES."	NUMBER(20)
control-feature-type-category-code	The specific value that represents the class of CONTROL-FEATURE-TYPE. It serves as a discriminator that partitions CONTROL-FEATURE-TYPE into subtypes.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Convoy

An ORGANISATION that is a group of vehicles or vessels organised for the purpose of control and orderly movement with or without escort protection.

Wrapper Attribute	Description	JC3IEDM Physical Type
convoy-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)

convoy-day-speed-rate	The numeric value that denotes the maximum distance per unit time that a specific CONVOY is to maintain during daylight operations. The unit of measure is kilometres per hour. The specified value must be greater than or equal to 0 (zero).	NUMBER(8,4)
convoy-day-vehicle-gap-dimension	The one-dimensional linear distance representing the distance between vehicles in a particular CONVOY during daylight operations.	NUMBER(12,3)
convoy-halt-duration	The numeric value that represents a quantity of time in milliseconds representing the aggregated units of time that a specific CONVOY may remain stationary during operations.	CHAR(19)
convoy-night-speed-rate	The numeric value that denotes the maximum distance per unit time that a specific CONVOY is to maintain during operations in darkness. The unit of measure is kilometres per hour. The specified value must be greater than or equal to 0 (zero).	NUMBER(8,4)
convoy-night-vehicle-gap-dimension	The one-dimensional linear distance representing the distance between vehicles in a particular CONVOY during operations in darkness.	NUMBER(12,3)
convoy-packet-gap-dimension	The one-dimensional linear distance representing the distance between packets in a particular CONVOY.	NUMBER(12,3)
convoy-packet-size-count	The integer value that represents the number of vehicles per packet in a particular CONVOY.	NUMBER(9)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

CorridorArea

A SURFACE that is defined by its width and a sequence of points.

Wrapper Attribute	Description	JC3IEDM Physical Type
corridor-area-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
corridor-area-width-dimension	The one-dimensional linear distance representing the horizontal distance measured from side to side for a CORRIDOR-AREA and distributed equally with respect to its centreline.	NUMBER(12,3)

corridor-area-centre-line-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

DryDock

"A FACILITY that provides an enclosure for maintenance, building or repairing ships, from which water can be pumped out."

Wrapper Attribute	Description	JC3IEDM Physical Type
dry-dock-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMS."	NUMBER(20)
dry-dock-boat-lift-capacity-quantity	The numeric value that represents the maximum tonnage of a boat-lift that can be utilised to remove a vessel from a specific DRY-DOCK. The unit of measure is metric ton.	NUMBER(9)
dry-dock-depth-dimension	The one-dimensional linear distance representing the depth of water available at the DRY-DOCK when the dock is full of water.	NUMBER(12,3)
dry-dock-location-text	The character string assigned to represent a statement of the details that relate to the specific DRY-DOCK.	VARCHAR(255)
dry-dock-marine-railway-size-code	The specific value that represents the bearing capacity of the underwater railway in the DRY-DOCK.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ElectronicAddress

An ADDRESS that is reached by using the specified NETWORK-SERVICE.

Wrapper Attribute	Description	JC3IEDM Physical Type
address-id	"The unique value, or set of characters, assigned to represent a specific ADDRESS and to distinguish it from all other ADDRESs."	NUMBER(20)
electronic-address-name-text	The character string assigned to represent a specific ELECTRONIC-ADDRESS.	VARCHAR(50)
network-id	"The unique value, or set of characters, assigned to represent a specific ADDRESS and to distinguish it from all other ADDRESs."	NUMBER(20)
network-service-index	"The unique value, or set of characters, assigned to represent a specific ADDRESS and to distinguish it from all other ADDRESs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ElectronicEquipmentType

An EQUIPMENT-TYPE that is designed to use electronic processing to realise its primary function.

Wrapper Attribute	Description	JC3IEDM Physical Type
electronic-equipment-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPEs."	NUMBER(20)
electronic-equipment-type-category-code	The specific value that represents the class of ELECTRONIC-EQUIPMENT-TYPE.	CHAR(6)
electronic-equipment-type-subcategory-code	The specific value that represents the detailed class of ELECTRONIC-EQUIPMENT-TYPE.	CHAR(6)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Ellipse

A planar SURFACE in the form of an ellipse.

Wrapper Attribute	Description	JC3IEDM Physical Type
ellipse-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
ellipse-centre-point-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
ellipse-first-conjugate-diameter-point-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
ellipse-second-conjugate-diameter-point-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

EngineeringCapability

"A CAPABILITY, required for planning, of those ORGANISATIONs and PERSONs or ORGANISATION-TYPEs and PERSON-TYPEs that are deemed as having the ability to perform construction or destruction activities."

Wrapper Attribute	Description	JC3IEDM Physical Type
engineering-capability-id	"The unique value, or set of characters, assigned to represent a specific CAPABILITY and to distinguish it from all other CAPABILITYs."	NUMBER(20)

engineering-capability-category-code	The specific value that represents the class of ENGINEERING-CAPABILITY.	CHAR(6)
engineering-capability-descriptor-code	The specific value that represents a specific ENGINEERING-CAPABILITY in terms of a measurable quantity.	CHAR(6)
engineering-capability-facility-height-dimension	"The one-dimensional linear distance representing the vertical distance, measured from the lowest to the highest reference, of either the FACILITY-TYPE itself (in the case of construction) or the breach in the FACILITY-TYPE (in the case of destruction)."	NUMBER(12,3)
engineering-capability-facility-length-dimension	"The one-dimensional linear distance representing the horizontal distance, measured from end to end and parallel to the central axis, of either the FACILITY-TYPE itself (in the case of construction) or the breach in the FACILITY-TYPE (in the case of destruction)."	NUMBER(12,3)
engineering-capability-facility-width-dimension	"The one-dimensional linear distance representing the horizontal distance, measured from side to side and perpendicular to the central axis, of either the FACILITY-TYPE itself (in the case of construction) or the breach in the FACILITY-TYPE (in the case of destruction)."	NUMBER(12,3)
facility-type-id	"The unique value, or set of characters, assigned to represent a specific CAPABILITY and to distinguish it from all other CAPABILITIES."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

EngineeringEquipmentType

An EQUIPMENT-TYPE that is designed to accomplish engineering functions.

Wrapper Attribute	Description	JC3IEDM Physical Type
engineering-equipment-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPEs."	NUMBER(20)
engineering-equipment-type-category-code	The specific value that represents the class of ENGINEERING-EQUIPMENT-TYPE.	CHAR(6)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

EquipmentType

A MATERIEL-TYPE that is not intended for consumption.

Wrapper Attribute	Description	JC3IEDM Physical Type
equipment-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPES."	NUMBER(20)
equipment-type-category-code	The specific value that represents the class of EQUIPMENT-TYPE. It serves as a discriminator that partitions EQUIPMENT-TYPE into subtypes.	CHAR(6)
equipment-type-loaded-weight-quantity	"The numeric value that represents the weight of a specific EQUIPMENT-TYPE including the normal maximum payload, crew, and personal/organisation equipment as well as the basic issue items. The unit of measure is kilogram."	NUMBER(12,3)
equipment-type-unloaded-weight-quantity	The numeric value that represents the weight of a specific EQUIPMENT-TYPE including on-equipment materiel that is an integral part of the equipment when issued. The unit of measure is kilogram.	NUMBER(12,3)
equipment-type-maximum-height-dimension	The one-dimensional linear distance representing the maximum distance measured perpendicular to the base plane of the specific EQUIPMENT-TYPE.	NUMBER(12,3)
equipment-type-maximum-length-dimension	The one-dimensional linear distance representing the maximum distance measured from end to end and parallel to the central axis of a specific EQUIPMENT-TYPE.	NUMBER(12,3)
equipment-type-maximum-width-dimension	The one-dimensional linear distance representing the maximum distance measured from side to side and perpendicular to the central axis of a specific EQUIPMENT-TYPE.	NUMBER(12,3)
equipment-type-fuel-capacity-quantity	The numeric value that represents the usable fuel capacity of an EQUIPMENT-TYPE. The unit of measure is litre.	NUMBER(9)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ExecutiveMilitaryOrganisationType

A MILITARY-ORGANISATION-TYPE whose function is to manage and direct the military establishment.

Wrapper Attribute	Description	JC3IEDM Physical Type
executive-military-organisation-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPES."	NUMBER(20)
executive-military-organisation-type-category-code	The specific value that represents the class of EXECUTIVE-MILITARY-ORGANISATION-TYPE.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Facility

"An OBJECT-ITEM that is built, installed or established to serve some particular purpose and is identified by the service it provides rather than by its content."

Wrapper Attribute	Description	JC3IEDM Physical Type
facility-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
facility-category-code	The specific value that represents the class of FACILITY. It serves as a discriminator that partitions FACILITY into subtypes.	CHAR(6)
facility-primary-construction-material-code	The specific value that represents the major material used in building the specific FACILITY.	CHAR(6)

facility-base-identification-code-text	The character string assigned to represent a designation of the common additional reference given to a specific military base/facility.	VARCHAR(15)
facility-height-dimension	The one-dimensional linear distance representing the height of a specific FACILITY.	NUMBER(12,3)
facility-length-dimension	The one-dimensional linear distance representing the length of a specific FACILITY.	NUMBER(12,3)
facility-width-dimension	The one-dimensional linear distance representing the width of a specific FACILITY.	NUMBER(12,3)
facility-major-building-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

FacilityStatus

An OBJECT-ITEM-STATUS that is a record of condition of a specific FACILITY.

Wrapper Attribute	Description	JC3IEDM Physical Type
facility-status-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-status-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
facility-status-category-code	The specific value that represents the class of FACILITY-STATUS. It serves as a discriminator that partitions FACILITY-STATUS into subtypes.	CHAR(6)
facility-status-demolition-status-code	The specific value that represents the status of a specific FACILITY destined for demolition.	CHAR(6)

facility-status-enemy-activity-condition-code	The specific value that represents the status of enemy activity around or at the FACILITY.	CHAR(6)
facility-status-mine-presence-code	The specific value that indicates whether a specific FACILITY contains mines.	CHAR(6)
facility-status-occupation-program-indicator-code	The specific value that indicates whether an occupation programme is present at the facility.	CHAR(6)
facility-status-operational-status-code	The specific value that represents the operational status of a specific FACILITY.	CHAR(6)
facility-status-operational-status-qualifier-code	The specific value that represents the qualification of the operational status of a specific FACILITY.	CHAR(6)
facility-status-reserve-indicator-code	The specific value that represents whether a specific FACILITY has been placed in reserve.	CHAR(6)
facility-status-security-status-code	The specific value that represents the security status of a specific FACILITY.	CHAR(6)
facility-status-usage-status-code	The specific value that represents the usage of a specific FACILITY.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

FacilityType

"An OBJECT-TYPE that is intended to be built, installed or established to serve some particular purpose and is identified by the service it is intended to provide rather than by its content.

Wrapper Attribute	Description	JC3IEDM Physical Type
facility-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPES."	NUMBER(20)

facility-type-category-code	The specific value that represents the class of FACILITY-TYPE. It serves as a discriminator that partitions FACILITY-TYPE into subtypes.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

FanArea

"A SURFACE that is in the form of a truncated ring sector, lying between and being bounded by the rays emanating from the centre-point of the ring and having a specified central angle."

Wrapper Attribute	Description	JC3IEDM Physical Type
fan-area-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
fan-area-minimum-range-dimension	The one-dimensional linear distance representing the distance from the vertex to the inner ring of the ring sector used to specify the FAN-AREA.	NUMBER(12,3)
fan-area-maximum-range-dimension	The one-dimensional linear distance representing distance from the vertex to the outer ring of the ring sector used to specify the FAN-AREA.	NUMBER(12,3)
fan-area-orientation-angle	The rotational measurement clockwise between the line of true north and the left side of the sector for a specific FAN-AREA.	NUMBER(7,4)
fan-area-sector-size-angle	The rotational measurement clockwise between the left and right sides of the sector for a specific FAN-AREA.	NUMBER(7,4)
fan-area-vertex-point-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Feature

"An OBJECT-ITEM that encompasses meteorological, geographic, and control features of military significance."

Wrapper Attribute	Description	JC3IEDM Physical Type
feature-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
feature-category-code	The specific value that represents the class of FEATURE. It serves as a discriminator that partitions FEATURE into subtypes.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

FeatureType

"An OBJECT-TYPE that encompasses meteorological, geographic, and control features of military significance."

Wrapper Attribute	Description	JC3IEDM Physical Type
feature-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPEs."	NUMBER(20)
feature-type-category-code	The specific value that represents the class of FEATURE-TYPE. It serves as a discriminator that partitions FEATURE-TYPE into subtypes.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

FireCapability

"A CAPABILITY, required for planning, of those FACILITYs, MATERIELs, ORGANISATIONs and PERSONs, or FACILITY-TYPEs, EQUIPMENT-TYPEs, ORGANISATION-TYPEs and PERSON-TYPEs that are deemed as having the ability to discharge or launch a projectile or missile."

Wrapper Attribute	Description	JC3IEDM Physical Type
fire-capability-id	"The unique value, or set of characters, assigned to represent a specific CAPABILITY and to distinguish it from all other CAPABILITYs."	NUMBER(20)
fire-capability-category-code	The specific value that represents the class of FIRE-CAPABILITY.	CHAR(6)
fire-capability-descriptor-code	The specific value that represents the FIRE-CAPABILITY that is being quantified.	CHAR(6)
fire-capability-weapon-type-code	The specific value that represents the general type of weapon that an EQUIPMENT-TYPE is qualified to employ.	CHAR(6)
ammunition-type-id	"The unique value, or set of characters, assigned to represent a specific CAPABILITY and to distinguish it from all other CAPABILITYs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

GeographicFeature

A FEATURE describing terrain characteristics to which military significance is attached.

Wrapper Attribute	Description	JC3IEDM Physical Type
geographic-feature-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
geographic-feature-bottom-hardness-code	A specific value that represents the subjective indication obtained by a diver of the hardness of the liquid/solid surface interface and is the result of a single arm thrust.	CHAR(6)

geographic-feature-bottom-penetration-quantity	The numeric value that represents the depth to which a diver is able to thrust his fist or fingers into the surface of the solid/liquid interface. The unit of measure is metres.	NUMBER(3)
geographic-feature-solid-surface-composition-code	The specific value that represents the composition of the surface of the GEOGRAPHIC-FEATURE.	CHAR(6)
geographic-feature-surface-category-code	The specific value that represents the type of surface of the GEOGRAPHIC-FEATURE.	CHAR(6)
geographic-feature-terrain-code	The specific value that represents a tract of land.	CHAR(6)
geographic-feature-vegetation-category-code	The specific value that represents the general vegetation class on a specific GEOGRAPHIC-FEATURE.	CHAR(6)
geographic-feature-vegetation-subcategory-code	The specific value that represents the detailed vegetation class on a specific GEOGRAPHIC-FEATURE.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

GeographicFeatureStatus

An OBJECT-ITEM-STATUS that is a record of condition of a specific GEOGRAPHIC-FEATURE.

Wrapper Attribute	Description	JC3IEDM Physical Type
geographic-feature-status-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-status-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
geographic-feature-status-category-code	The specific value that represents the class of GEOGRAPHIC-FEATURE-STATUS. It serves as a discriminator that partitions GEOGRAPHIC-FEATURE-STATUS into subtypes.	CHAR(6)

geographic-feature-status-mine-presence-code	The specific value that indicates whether a specific GEOGRAPHIC-FEATURE contains mines.	CHAR(6)
geographic-feature-status-surface-recirculation-indicator-code	The specific value that indicates whether the surface will recirculate as a result of rotor downwash.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

GeographicFeatureType

A FEATURE-TYPE that describes terrain characteristics to which military significance is attached.

Wrapper Attribute	Description	JC3IEDM Physical Type
geographic-feature-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPES."	NUMBER(20)
geographic-feature-type-category-code	The specific value that represents the class of GEOGRAPHIC-FEATURE-TYPE.	CHAR(6)
geographic-feature-type-subcategory-code	The specific value that represents the detailed class of GEOGRAPHIC-FEATURE-TYPE.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

GeographicPoint

An ABSOLUTE-POINT that has its position specified with respect to the surface of the World Geodetic System 1984 (WGS 84) ellipsoid.

Wrapper Attribute	Description	JC3IEDM Physical Type
geographic-point-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
geographic-point-latitude-coordinate	The numeric value that represents the angle between the plane of the equator and a line perpendicular to the ellipsoid surface and passing through the GEOGRAPHIC-POINT.	NUMBER(9,6)
geographic-point-longitude-coordinate	The numeric value that represents the angle between the initial (zero or Greenwich) meridian and the meridian of the GEOGRAPHIC-POINT measured in the plane of the Equator.	NUMBER(10,6)
geographic-point-latitude-precision-code	The specific value that represents the resolution used for the expression of a value of a latitude coordinate.	CHAR(6)
geographic-point-longitude-precision-code	The specific value that represents the resolution used for the expression of a value of a longitude coordinate.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

GeometricVolume

A specific LOCATION that is a three-dimensional bounded space.

Wrapper Attribute	Description	JC3IEDM Physical Type
geometric-volume-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
geometric-volume-category-code	The specific value that represents the class of GEOMETRIC-VOLUME. It serves as a discriminator that partitions GEOMETRIC-VOLUME into subtypes.	CHAR(6)

geometric-volume-lower-vertical-distance-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
geometric-volume-upper-vertical-distance-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

GovernmentOrganisationType

An ORGANISATION-TYPE that controls and administers public policy either under a national or international mandate.

Wrapper Attribute	Description	JC3IEDM Physical Type
government-organisation-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPES."	NUMBER(20)
government-organisation-type-category-code	The specific value that represents the class of GOVERNMENT-ORGANISATION-TYPE. It serves as a discriminator that partitions GOVERNMENT-ORGANISATION-TYPE into subtypes.	CHAR(6)
government-organisation-type-main-activity-code	The specific value that represents the main activity of a GOVERNMENT-ORGANISATION-TYPE.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

GroupCharacteristic

A reference to a set of characteristics that may be used for identifying a distinct collection of objects.

Wrapper Attribute	Description	JC3IEDM Physical Type
group-characteristic-id	"The unique value, or set of characters, assigned to represent a specific GROUP-CHARACTERISTIC and to distinguish it from all other GROUP-CHARACTERISTICS."	NUMBER(20)
group-characteristic-age-group-code	The specific value that identifies the age group in a specific GROUP-CHARACTERISTIC.	CHAR(6)
group-characteristic-malady-code	"The specific value that identifies the type of ill health, ailment or disease in a specific GROUP-CHARACTERISTIC."	CHAR(6)
group-characteristic-malady-transmissibility-indicator-code	"The specific value that identifies whether the type of ill health, ailment or disease in a specific GROUP-CHARACTERISTIC is communicable."	CHAR(6)
group-characteristic-gender-code	The specific value that identifies the gender in a specific GROUP-CHARACTERISTIC.	CHAR(6)
group-characteristic-language-code	The specific value that identifies the language group in a specific GROUP-CHARACTERISTIC.	CHAR(6)
group-characteristic-triage-code	The specific value that identifies the triage classification in a specific GROUP-CHARACTERISTIC.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

GroupOrganisationType

An ORGANISATION-TYPE that is non-formal in nature and classes together its members due to mutual or common circumstances.

Wrapper Attribute	Description	JC3IEDM Physical Type
group-organisation-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPES."	NUMBER(20)
group-organisation-type-category-code	The specific value that represents the class of GROUP-ORGANISATION-TYPE.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

HandlingCapability

"A CAPABILITY, required for planning, of those FACILITYs and MATERIELs, or FACILITY-TYPES and EQUIPMENT-TYPES that are deemed as having the ability to move materiels (raw materials, scrap, semi-finished, and finished) to, through, and from productive processes; in warehouses and storage; and in receiving and shipping areas."

Wrapper Attribute	Description	JC3IEDM Physical Type
handling-capability-id	"The unique value, or set of characters, assigned to represent a specific CAPABILITY and to distinguish it from all other CAPABILITYs."	NUMBER(20)
handling-capability-cargo-category-code	The specific value that represents the class of cargo subject to the HANDLING-CAPABILITY.	CHAR(6)
handling-capability-descriptor-code	The specific value that represents the HANDLING-CAPABILITY that is being quantified.	CHAR(6)
handling-capability-action-code	The specific value that represents the type of a specific HANDLING-CAPABILITY.	CHAR(6)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Harbour

"A FACILITY that is a restricted body of water, an anchorage, or other limited coastal water area and its water approaches from which and in which shipping operations are projected or supported."

Wrapper Attribute	Description	JC3IEDM Physical Type
harbour-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
harbour-airport-near-indicator-code	The specific value that represents whether an airport is near the HARBOUR.	CHAR(6)
harbour-approach-channel-depth-dimension	The one-dimensional linear distance representing the depth maintained by dredging and guaranteed by the harbour authority of the specific HARBOUR.	NUMBER(12,3)
harbour-biologically-secure-availability-indicator-code	"The specific value that represents whether the HARBOUR is capable of supplying biologically secure facilities, to include quarantine facilities."	CHAR(6)
harbour-convoy-marshalling-indicator-code	The specific value that represents whether the HARBOUR is capable of supplying convoy-marshalling facilities.	CHAR(6)
harbour-day-limit-net-explosive-quantity	The numeric value that represents the maximum net explosive quantity that can be handled at the HARBOUR during the day. The unit of measure is kilogram.	NUMBER(6)
harbour-night-limit-net-explosive-quantity	The numeric value that represents the maximum net explosive quantity that can be handled at the HARBOUR during the night. The unit of measure is kilogram.	NUMBER(6)
harbour-degaussing-indicator-code	The specific value that represents whether degaussing facilities are available.	CHAR(6)
harbour-dirty-ballast-indicator-code	The specific value that represents whether the port has sufficient facilities for receiving oily or chemically contaminated dirty ballast.	CHAR(6)

harbour-entrance-restrictions-ice-indicator-code	The specific value that represents whether ice is a natural factor restricting the entrance of vessels into the port.	CHAR(6)
harbour-entrance-restrictions-swell-indicator-code	The specific value that represents whether heavy swell is a natural factor restricting the entrance of vessels into the port.	CHAR(6)
harbour-entrance-restrictions-text	"The character string assigned to represent the factors other than tide, heavy swell, and ice restricting entrance into the port."	VARCHAR(100)
harbour-estimated-time-of-arrival-indicator-code	The specific value that represents whether an estimated time of arrival message is required.	CHAR(6)
harbour-fire-fighting-capability-code	The specific value that represents the class of fire fighting capability available at a specific HARBOUR.	CHAR(6)
harbour-fire-fighting-indicator-code	The specific value that represents whether the HARBOUR is capable of supplying fire-fighting facilities.	CHAR(6)
harbour-first-port-of-entry-indicator-code	The specific value that represents whether the port may be used by a vessel that needs to clear foreign goods and personnel through Customs and Immigration.	CHAR(6)
harbour-fresh-water-availability-indicator-code	The specific value that represents whether the HARBOUR is capable of providing fresh water.	CHAR(6)
harbour-lash-indicator-code	The specific value that represents whether the HARBOUR can support the Lighter Aboard Ship (LASH) transportation system.	CHAR(6)
harbour-lighterage-availability-indicator-code	"The specific value that represents the possibility for transferring goods from a ship to a wharf or another ship using a boat, usu. flat-bottomed at a specific maritime port."	CHAR(6)
harbour-maximum-vessel-draught-dimension	The one-dimensional linear distance representing the maximum draught of vessel that the specific HARBOUR can accommodate.	NUMBER(12,3)
harbour-maximum-vessel-length-dimension	The one-dimensional linear distance representing the maximum length of vessel that the specific HARBOUR can accommodate.	NUMBER(12,3)
harbour-maximum-vessel-width-dimension	The one-dimensional linear distance representing the maximum width of vessel that the specific HARBOUR can accommodate.	NUMBER(12,3)
harbour-mean-tidal-current-rate	The numeric value that denotes the average velocity of the tidal flow at the specific HARBOUR. The unit of measure is kilometres per hour. The specified value must be greater than or equal to 0 (zero).	NUMBER(7,1)

harbour-passenger-handling-indicator-code	The specific value that represents whether the HARBOUR is capable of handling passengers.	CHAR(6)
harbour-persistence-code	The specific value that represents whether the HARBOUR is permanent or temporary.	CHAR(6)
harbour-overhead-limits-indicator-code	The specific value that represents whether bridge and/or overhead power cables exist.	CHAR(6)
harbour-pilotage-availability-indicator-code	The specific value that represents whether a pilot is available at the port.	CHAR(6)
harbour-pilotage-requirement-indicator-code	The specific value that represents whether the HARBOUR requires vessels to have a pilot.	CHAR(6)
harbour-prevailing-wind-direction-code	The specific value that represents the direction of the wind that most frequently occurs for the specific HARBOUR.	CHAR(6)
harbour-prevailing-wind-maximum-speed-code	The specific value that represents the maximum degree of discrimination or resolution for which the prevailing wind speed is stated.	CHAR(6)
harbour-prevailing-wind-maximum-speed-rate	The numeric value that denotes the maximum recorded strength of wind at the specific HARBOUR. The unit of measure is kilometres/hour. The specified value must be greater than or equal to 0 (zero).	NUMBER(4,1)
harbour-refuelling-availability-indicator-code	The specific value that represents whether the HARBOUR has refuelling facilities.	CHAR(6)
harbour-refuelling-location-text	The character string assigned to represent a statement of the specific refuelling details that relate to the specific HARBOUR.	VARCHAR(255)
harbour-refuelling-type-code	The specific value that represents the refuelling means available at the specific HARBOUR.	CHAR(6)
harbour-seasonal-detail-text	The character string assigned to represent a statement of the specific seasonal details that relate to the specific HARBOUR.	VARCHAR(255)
harbour-shelter-quality-code	"The protection provided from wind, sea, and swell in the area where normal port operations are conducted."	CHAR(6)
harbour-tanker-facilities-indicator-code	The specific value that represents the availability of facilities to process tankers at a specific HARBOUR.	CHAR(6)

harbour-tidal-mean-neap-range-dimension	The one-dimensional linear distance representing the average range just after the first and third quarters of the moon when there is the least difference between high and low water for a specific HARBOUR.	NUMBER(12,3)
harbour-tidal-mean-spring-range-dimension	The one-dimensional linear distance representing the average range just after the new and full moon when there is the greatest difference between high and low water for a specific HARBOUR.	NUMBER(12,3)
harbour-tidal-text	The character string assigned to represent a statement of the specific tidal details that relate to the specific HARBOUR.	VARCHAR(255)
harbour-transit-accommodation-indicator-code	The specific value that represents whether the HARBOUR is capable of supplying transit accommodation facilities.	CHAR(6)
harbour-tug-availability-indicator-code	The specific value that represents the availability of tugs at a specific HARBOUR.	CHAR(6)
harbour-turning-area-indicator-code	The specific value that represents whether there is a turning basin or other water area available in a specific HARBOUR.	CHAR(6)
harbour-vehicle-handling-type-code	The specific types of facilities available at a specified HARBOUR.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

HarbourType

"A FACILITY-TYPE that is a restricted body of water, an anchorage, or other limited coastal water area and its water approaches from which and in which shipping operations are projected or supported."

Wrapper Attribute	Description	JC3IEDM Physical Type
harbour-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPES."	NUMBER(20)
harbour-type-category-code	The specific value that represents the class of HARBOUR-TYPE.	CHAR(6)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Holding

"The quantity of each specific OBJECT-TYPE that is held by, installed in, or included with a specific OBJECT-ITEM."

Wrapper Attribute	Description	JC3IEDM Physical Type
object-item-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
holding-index	"The unique value, or set of characters, assigned to represent a specific HOLDING for a specific OBJECT-ITEM and a specific OBJECT-TYPE and to distinguish it from all other HOLDINGS for that OBJECT-ITEM and that OBJECT-TYPE."	NUMBER(20)
holding-operational-count	The integer value representing the number of specific OBJECT-TYPEs a specific OBJECT-ITEM has available for operations.	NUMBER(9)
holding-total-quantity	"The numeric value representing the total quantity, to include reserves, of specific OBJECT-TYPEs physically held by a specific OBJECT-ITEM. The unit of measure is derived from the OBJECT-TYPE specification."	NUMBER(9)
holding-on-hand-quantity	"The numeric value representing the quantity of specific OBJECT-TYPEs physically held on-hand, not including reserves, by a specific OBJECT-ITEM."	NUMBER(9)
holding-required-total-quantity	The numeric value representing the total quantity of specific OBJECT-TYPEs required to be held on-hand and in reserve by a specific OBJECT-ITEM to meet the NATO assigned task in accordance with Force Standards or established mission requirements.	NUMBER(9)
holding-required-on-hand-quantity	"The numeric value representing the quantity of specific OBJECT-TYPEs, not including reserves, required to be held on-hand by a specific OBJECT-ITEM in accordance with Force Standards or established mission requirements."	NUMBER(9)
holding-required-calculation-method-code	The specific value that represents the required stocks calculation method used for the count of OBJECT-TYPEs in a specific HOLDING.	CHAR(6)

reporting-data-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

HoldingTransfer

The specification of the OBJECT-TYPE quantity expected to be added to or subtracted from a specific HOLDING.

Wrapper Attribute	Description	JC3IEDM Physical Type
object-item-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
holding-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
holding-transfer-index	"The unique value, or set of characters, assigned to represent a specific HOLDING-TRANSFER for a specific HOLDING and to distinguish it from all other HOLDING-TRANSFERS for that HOLDING."	NUMBER(20)
holding-transfer-reason-code	The specific value that characterises the basis for a specific HOLDING-TRANSFER.	CHAR(6)
holding-transfer-quantity	The numeric value representing the quantity of specific OBJECT-TYPE involved in a specific HOLDING-TRANSFER. A negative quantity decreases the HOLDING and a positive quantity increases the HOLDING.	NUMBER(9)
holding-transfer-corresponding-object-item-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
reporting-data-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Icing

A METEOROLOGIC-FEATURE that specifies the accumulation of frozen water on stationary or moving surfaces.

Wrapper Attribute	Description	JC3IEDM Physical Type
icing-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
icing-category-code	The specific value that represents the class of a particular ICING.	CHAR(6)
icing-severity-qualifier-code	The specific value that represents the severity of a particular ICING.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

InstrumentLandingSystem

"A MATERIEL that provides aircraft with horizontal and vertical guidance just before landing and during landing, and at certain fixed points, indicates the distance to the reference point of landing."

Wrapper Attribute	Description	JC3IEDM Physical Type
instrument-landing-system-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
instrument-landing-system-beam-width-dimension	The one-dimensional linear distance representing the extreme horizontal distance measured from side to side and perpendicular to the central axis of the main beam coil of a specific localiser.	NUMBER(12,3)

instrument-landing-system-glide-path-angle	"The rotational measurement from the horizontal plane to the glide path, where the positive angle is vertically upward."	NUMBER(7,4)
instrument-landing-system-magnetic-variation-angle	The rotational measurement of the angular difference between true north and magnetic north.	NUMBER(7,4)
instrument-landing-system-slaved-variation-angle	"The rotational measurement of the fixed value of magnetic variation applied to true direction to obtain the magnetic values for radials, courses and headings."	NUMBER(7,4)
instrument-landing-system-bearing-angle	The rotational measurement clockwise from true North to the localiser used for final approach guidance.	NUMBER(7,4)
instrument-landing-system-threshold-crossing-height-dimension	The one-dimensional linear distance representing the height above the landing threshold on a normal glide path.	NUMBER(12,3)
instrument-landing-system-localiser-distance-dimension	The one-dimensional linear distance representing the extreme horizontal distance measured perpendicular from the end of the runway to the localiser antenna position.	NUMBER(12,3)
instrument-landing-system-distance-measuring-equipment-distance-dimension	The one-dimensional linear distance representing the distance between the distance measuring equipment and the associated landing threshold.	NUMBER(12,3)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Jetty

"A FACILITY that is a platform that may be fixed or floating extending from a shore, normally attached to a wharf or the shore, and which allows access to a vessel lying alongside, used to secure, protect and provide landing and docking for vessels."

Wrapper Attribute	Description	JC3IEDM Physical Type
jetty-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
jetty-day-limit-net-explosive-quantity	The numeric value that represents the maximum net explosive quantity that can be handled at the JETTY during the day. The unit of measure is kilogram.	NUMBER(6)

jetty-maximum-deadweight-tonnage-quantity	The numeric value that represents the maximum deadweight tonnage for a vessel at the specific JETTY. The unit of measure is metric ton.	NUMBER(9)
jetty-maximum-draught-dimension	The one-dimensional linear distance representing the maximum draught of vessel that the specific JETTY can accommodate.	NUMBER(12,3)
jetty-night-limit-net-explosive-quantity	The numeric value that represents the maximum net explosive quantity that can be handled at the JETTY during the night. The unit of measure is kilogram.	NUMBER(6)
jetty-rail-capacity-count	The integer value that represents the maximum number of goods/ freight cars that the JETTY can accommodate at the same time.	NUMBER(6)
jetty-rail-served-indicator-code	The specific value that represents whether the JETTY has railway facilities.	CHAR(6)
jetty-vessel-maximum-beam-dimension	The one-dimensional linear distance representing the maximum beam or width of vessel that the specific JETTY can accommodate.	NUMBER(12,3)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Light

A METEOROLOGIC-FEATURE that specifies the availability of natural illumination by type and time.

Wrapper Attribute	Description	JC3IEDM Physical Type
light-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
light-category-code	The specific value that represents the class of LIGHT.	CHAR(6)
light-up-datetime	The character string representing a point in time that designates the time of day that marks the beginning of the period of effectiveness of the specified type of LIGHT.	CHAR(18)

light-down-datetime	The character string representing a point in time that designates the time of day that marks the end of the period of effectiveness of the specified type of LIGHT.	CHAR(18)
light-moon-phase-code	The specific value that represents the phase of the moon for a specific LIGHT.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Line

A LOCATION that is defined by two or more POINTs connected by one-dimensional line segments in an ordered sequence.

Wrapper Attribute	Description	JC3IEDM Physical Type
line-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

LinePoint

A specification of one of an ordered sequence of POINTs used to define the specific LINE.

Wrapper Attribute	Description	JC3IEDM Physical Type
line-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
line-point-index	"The unique value, or set of characters, assigned to represent a specific LINE-POINT for a specific LINE and to distinguish it from all other LINE-POINTS for that LINE."	NUMBER(20)

line-point-sequence-ordinal	The integer value that indicates the relative order of a LINE-POINT among the set of LINE-POINTS associated with a specific LINE.	NUMBER(6)
line-point-point-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

LiquidBodyStatus

A GEOGRAPHIC-FEATURE-STATUS that is a record of condition of a specific liquid body.

Wrapper Attribute	Description	JC3IEDM Physical Type
liquid-body-status-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-status-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
liquid-body-status-bottom-current-rate	The numeric value that denotes the rate of the liquid movement at the bottom surface of the sea. The unit of measure is knots. The specified value must be greater than or equal to 0 (zero).	NUMBER(4,1)
liquid-body-status-thermal-layer-depth-quantity	The numeric value that represents the distance below the liquid surface where the distinct interface between surface waters and cooler waters; regions between warmer upper layer (epilimnion) and the lower cold layer (hypolimnion) of the liquid where temperature declines abruptly (1 degree C or more per meter) with increasing depth. The unit of measure is metres.	NUMBER(4)
liquid-body-status-tidal-stream-rate	The numeric value that represents the horizontal water movements due to tidal forcing. The unit of measure is knots. The specified value must be greater than or equal to 0 (zero).	NUMBER(4,1)
liquid-body-status-underwater-visibility-quantity	"The numeric value that represents the distance at which an object disappears given the ambient light, suspended organic and inorganic particulate measure, dissolved substances, plankton and the waters molecular structure. The unit of measure is metres."	NUMBER(4)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)

update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)
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LiquidSurfaceStatus

A GEOGRAPHIC-FEATURE-STATUS that is a record of condition of a specific liquid surface.

Wrapper Attribute	Description	JC3IEDM Physical Type
liquid-surface-status-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-status-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
liquid-surface-status-sea-state-code	The specific value that represents a range of wave heights on a specific liquid surface.	CHAR(6)
liquid-surface-status-surface-condition-code	The specific value that represents the physical status of a liquid surface area.	CHAR(6)
liquid-surface-status-wave-direction-code	The specific value that represents the direction of waves in a specific liquid surface.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Location

A specification of position and geometry with respect to a specified horizontal frame of reference and a vertical distance measured from a specified datum.

Wrapper Attribute	Description	JC3IEDM Physical Type
location-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)

location-category-code	The specific value that represents a class of LOCATION. It serves as a discriminator that partitions LOCATION into subtypes.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

MaintenanceCapability

"A CAPABILITY, required for planning, of those FACILITYs, MATERIELs, ORGANISATIONs and PERSONs or FACILITY-TYPEs, EQUIPMENT-TYPEs, ORGANISATION-TYPEs, and PERSON-TYPEs that are deemed as having the ability to provide a range of activities required to restore or maintain operational usage."

Wrapper Attribute	Description	JC3IEDM Physical Type
maintenance-capability-id	"The unique value, or set of characters, assigned to represent a specific CAPABILITY and to distinguish it from all other CAPABILITYs."	NUMBER(20)
maintenance-capability-category-code	The specific value that represents the class of MAINTENANCE-CAPABILITY.	CHAR(6)
maintenance-capability-station-count	"The integer value representing the number of operational maintenance stations, fully outfitted with the necessary equipment and maintenance personnel, available for the purpose of repairing and servicing materiel."	NUMBER(4)
maintenance-capability-level-code	The specific value that represents the extent of repairs or servicing that can be accomplished.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

MaritimeEquipmentType

An EQUIPMENT-TYPE that is designed to be used in a maritime environment.

Wrapper Attribute	Description	JC3IEDM Physical Type
maritime-equipment-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPES."	NUMBER(20)
maritime-equipment-type-category-code	The specific value that represents the class of MARITIME-EQUIPMENT-TYPE.	CHAR(6)
maritime-equipment-type-subcategory-code	The specific value that represents the detailed class of MARITIME-EQUIPMENT-TYPE.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Materiel

"An OBJECT-ITEM that is equipment, apparatus or supplies of military interest without distinction as to its application for administrative or combat purposes."

Wrapper Attribute	Description	JC3IEDM Physical Type
materiel-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
materiel-category-code	The specific value that represents the class of MATERIEL. It serves as a discriminator that partitions MATERIEL into subtypes.	CHAR(6)
materiel-serial-number-identification-text	The character string assigned to represent a specific MATERIEL.	VARCHAR(50)
materiel-lot-identification-text	The character string assigned to represent a specific production of a specific MATERIEL.	VARCHAR(100)

materiel-hull-number-text	"The character string assigned to represent the number assigned to a specific vessel, which when associated with a specific hull type or ship type, uniquely identifies that vessel."	VARCHAR(15)
materiel-mine-requisition-case-number-text	The character string assigned to represent the book/record keeping number to keep track of individual mines.	VARCHAR(15)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

MaterielStatus

An OBJECT-ITEM-STATUS that is a record of condition of a specific MATERIEL.

Wrapper Attribute	Description	JC3IEDM Physical Type
materiel-status-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-status-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
materiel-status-category-code	The specific value that represents the class of MATERIEL-STATUS. It serves as a discriminator that partitions MATERIEL-STATUS into subtypes.	CHAR(6)
materiel-status-body-colour-code	The specific value that represents the current colour scheme of a specific MATERIEL.	CHAR(6)
materiel-status-marking-code	The specific value that represents the type of marking of a specific MATERIEL.	CHAR(6)
materiel-status-marking-colour-code	The specific value that represents the colour of the markings of a specific MATERIEL.	CHAR(6)
materiel-status-demolition-status-code	The specific value that represents the status of a specific MATERIEL destined for demolition.	CHAR(6)

materiel-status-imo-compliant-indicator-code	The specific value that indicates whether a vessel complies with International Maritime Organisation standards.	CHAR(6)
materiel-status-operational-status-code	The specific value that represents the operational status of a specific MATERIEL.	CHAR(6)
materiel-status-operational-status-qualifier-code	The specific value that represents the qualification of the operational status of a specific MATERIEL.	CHAR(6)
materiel-status-operational-status-mode-code	The specific value that represents the firepower or mobility or communications degradation of a specific MATERIEL.	CHAR(6)
materiel-status-reserve-indicator-code	The specific value that represents whether a specific MATERIEL has been placed in reserve.	CHAR(6)
materiel-status-safety-status-code	The specific value that represents the arming state of a specific MATERIEL that is a weapon or ammunition.	CHAR(6)
materiel-status-usage-status-code	The specific value that represents the usage of a specific MATERIEL.	CHAR(6)
materiel-status-buoy-malfunction-code	The specific value that represents the type of malfunction of a buoy.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

MaterielType

"An OBJECT-TYPE that represents equipment, apparatus or supplies of military interest without distinction to its application for administrative or combat purposes."

Wrapper Attribute	Description	JC3IEDM Physical Type
materiel-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPEs."	NUMBER(20)

materiel-type-category-code	The specific value that represents the class of MATERIEL-TYPE. It serves as a discriminator that partitions MATERIEL-TYPE into subtypes.	CHAR(6)
materiel-type-reportable-item-text	"The character string assigned to represent a specific MATERIEL-TYPE, selected from the Reportable Item Code list issued by NATO."	VARCHAR(6)
materiel-type-stock-number-text	The character string assigned to represent a specific MATERIEL-TYPE.	VARCHAR(15)
materiel-type-supply-class-code	The specific value that represents the NATO supply class of MATERIEL-TYPE.	CHAR(6)
materiel-type-issuing-height-dimension	The one-dimensional linear distance representing the maximum distance measured perpendicular to the base plane of the specific MATERIEL-TYPE when it is prepared for shipment or storage.	NUMBER(12,3)
materiel-type-issuing-length-dimension	The one-dimensional linear distance representing the maximum distance measured from end to end and parallel to the central axis of specific MATERIEL-TYPE when it is prepared for shipment or storage.	NUMBER(12,3)
materiel-type-issuing-width-dimension	The one-dimensional linear distance representing the maximum distance measured from side to side and perpendicular to the central axis of a specific MATERIEL-TYPE when it is prepared for shipment or storage.	NUMBER(12,3)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

MedicalFacilityStatus

A FACILITY-STATUS that is a record of condition of a specific medical facility.

Wrapper Attribute	Description	JC3IEDM Physical Type
medical-facility-status-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-status-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)

medical-facility-status-surgery-backlog-duration	The numeric value that represents a quantity of time in milliseconds for the estimated period of effectiveness for performing pending surgeries for a specific MEDICAL-FACILITY-STATUS.	CHAR(19)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

MedicalFacilityStatusCasualtyBedOccupancy

The count of bed occupancy according to specified source grouping for a specific MEDICAL-FACILITY-STATUS.

Wrapper Attribute	Description	JC3IEDM Physical Type
medical-facility-status-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-status-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
medical-facility-status-casualty-bed-occupancy-index	"The unique value, or set of characters, assigned to represent a specific MEDICAL-FACILITY-STATUS-CASUALTY-BED-OCCUPANCY for a specific FACILITY and a specific OBJECT-ITEM-STATUS and to distinguish it from all other instances of MEDICAL-FACILITY-STATUS-CASUALTY-BED-OCCUPANCY for that FACILITY and that OBJECT-ITEM-STATUS."	NUMBER(20)
medical-facility-status-casualty-bed-occupancy-group-code	The specific value that represents the categorisation of casualties in a specific MEDICAL-FACILITY-STATUS-CASUALTY-BED-OCCUPANCY.	CHAR(6)
medical-facility-status-casualty-bed-occupancy-count	The integer value representing the aggregated number of beds that are occupied by the specified group in a specific MEDICAL-FACILITY-STATUS-CASUALTY-BED-OCCUPANCY.	NUMBER(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

MedicalFacilityStatusIntervalCasualtyGroup

A MEDICAL-FACILITY-STATUS that specifies the count of deaths and completed surgeries for each of specified groups during the period defined by the effective beginning and ending datetimes stipulated through REPORTING-DATA.

Wrapper Attribute	Description	JC3IEDM Physical Type
medical-facility-status-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-status-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
medical-facility-status-interval-casualty-group-index	"The unique value, or set of characters, assigned to represent a specific MEDICAL-FACILITY-STATUS-INTERVAL-CASUALTY-GROUP for a specific FACILITY and a specific OBJECT-ITEM-STATUS and to distinguish it from all other instances of MEDICAL-FACILITY-STATUS-INTERVAL-CASUALTY-GROUPs for that FACILITY and that OBJECT-ITEM-STATUS."	NUMBER(20)
medical-facility-status-interval-casualty-group-code	The specific value that represents the categorisation of casualties in a specific MEDICAL-FACILITY-STATUS-INTERVAL-CASUALTY-GROUP.	CHAR(6)
medical-facility-status-interval-casualty-group-completed-surgery-count	The integer value representing the number of completed surgeries for casualties in the specified group in a specific MEDICAL-FACILITY-STATUS-INTERVAL-CASUALTY-GROUP.	NUMBER(6)
medical-facility-status-interval-casualty-group-death-count	The integer value representing the number of deceased casualties in the specified group in a specific MEDICAL-FACILITY-STATUS-INTERVAL-CASUALTY-GROUP.	NUMBER(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

MedicalFacilityStatusIntervalCasualtyType

A MEDICAL-FACILITY-STATUS that specifies the count of casualty arrivals and admissions in each of specified groups according to specified medical classification during the period defined by the effective beginning and ending datetimes stipulated through REPORTING-DATA.

Wrapper Attribute	Description	JC3IEDM Physical Type
medical-facility-status-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-status-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
medical-facility-status-interval-casualty-type-index	"The unique value, or set of characters, assigned to represent a specific MEDICAL-FACILITY-STATUS-INTERVAL-CASUALTY-TYPE for a specific FACILITY and a specific OBJECT-ITEM-STATUS and to distinguish it from all other instances of MEDICAL-FACILITY-STATUS-INTERVAL-CASUALTY-TYPE for that FACILITY and that OBJECT-ITEM-STATUS."	NUMBER(20)
medical-facility-status-interval-casualty-type-code	The specific value that represents the categorisation of casualties according to the type of illness or injury in a specific MEDICAL-FACILITY-STATUS-INTERVAL-CASUALTY-TYPE.	CHAR(6)
medical-facility-status-interval-casualty-type-arrival-count	The integer value representing the number of new casualties of the specified type in a specific MEDICAL-FACILITY-STATUS-INTERVAL-CASUALTY-TYPE.	NUMBER(6)
medical-facility-status-interval-casualty-type-admitted-count	The integer value representing the number of admitted casualties of the specified type in a specific MEDICAL-FACILITY-STATUS-INTERVAL-CASUALTY-TYPE.	NUMBER(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

MedicalFacilityStatusIntervalEvacuation

A MEDICAL-FACILITY-STATUS that specifies the count of casualties evacuated in each of specified groups according to the intended destination during the period defined by the effective beginning and ending datetimes stipulated through REPORTING-DATA.

Wrapper Attribute	Description	JC3IEDM Physical Type
medical-facility-status-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)

object-item-status-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
medical-facility-status-interval-evacuation-index	"The unique value, or set of characters, assigned to represent a specific MEDICAL-FACILITY-STATUS-INTERVAL-EVACUATION for a specific FACILITY and a specific OBJECT-ITEM-STATUS and to distinguish it from all other instances of MEDICAL-FACILITY-STATUS-INTERVAL-EVACUATION for that FACILITY and that OBJECT-ITEM-STATUS."	NUMBER(20)
medical-facility-status-interval-evacuation-destination-code	The specific value that represents the disposition of casualties according to the evacuation destination in a specific MEDICAL-FACILITY-STATUS-INTERVAL-EVACUATION.	CHAR(6)
medical-facility-status-interval-evacuation-count	The integer value representing the number of casualties that have been evacuated to the specified destination in a specific MEDICAL-FACILITY-STATUS-INTERVAL-EVACUATION.	NUMBER(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

MedicalFacilityStatusPendingCasualtyEvacuation

The count of pending evacuees in each group according to the intended destination for a specific MEDICAL-FACILITY-STATUS.

Wrapper Attribute	Description	JC3IEDM Physical Type
medical-facility-status-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-status-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
medical-facility-status-pending-casualty-evacuation-index	"The unique value, or set of characters, assigned to represent a specific MEDICAL-FACILITY-STATUS-PENDING-CASUALTY-EVACUATION for a specific FACILITY and a specific OBJECT-ITEM-STATUS and to distinguish it from all other instances of MEDICAL-FACILITY-STATUS-PENDING-CASUALTY-EVACUATION for that FACILITY and that OBJECT-ITEM-STATUS."	NUMBER(20)
medical-facility-status-pending-casualty-evacuation-destination-code	The specific value that represents the destination of casualties awaiting evacuation in a specific MEDICAL-FACILITY-STATUS-PENDING-CASUALTY-EVACUATION.	CHAR(6)

medical-facility-status-pending-casualty-evacuation-sitting-count	The integer value representing the aggregated number of casualties to be evacuated that are capable of sitting in a specific MEDICAL-FACILITY-STATUS-PENDING-CASUALTY-EVACUATION.	NUMBER(6)
medical-facility-status-pending-casualty-evacuation-stretcher-count	The integer value representing the aggregated number of casualties that must be evacuated using stretchers in a specific MEDICAL-FACILITY-STATUS-PENDING-CASUALTY-EVACUATION.	NUMBER(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

MedicalFacilityStatusPendingSurgery

The count of pending surgeries according to specified triage grouping for a specific MEDICAL-FACILITY-STATUS.

Wrapper Attribute	Description	JC3IEDM Physical Type
medical-facility-status-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-status-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
medical-facility-status-pending-surgery-index	"The unique value, or set of characters, assigned to represent a specific MEDICAL-FACILITY-STATUS-PENDING-SURGERY for a specific FACILITY and a specific OBJECT-ITEM-STATUS and to distinguish it from all other instances of MEDICAL-FACILITY-STATUS-PENDING-SURGERY for that FACILITY and that OBJECT-ITEM-STATUS."	NUMBER(20)
medical-facility-status-pending-surgery-triage-code	The specific value that represents the categorisation of surgery cases according to multilevel triage classification scheme in a specific MEDICAL-FACILITY-STATUS-PENDING-SURGERY.	CHAR(6)
medical-facility-status-pending-surgery-count	The integer value representing the number of pending surgeries for the specified triage category in a specific MEDICAL-FACILITY-STATUS-PENDING-SURGERY.	NUMBER(6)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

MeteorologicFeature

A FEATURE that describes reported or forecast weather and light conditions.

Wrapper Attribute	Description	JC3IEDM Physical Type
meteorologic-feature-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
meteorologic-feature-category-code	The specific value that represents the class of METEOROLOGIC-FEATURE. It serves as a discriminator that partitions METEOROLOGIC-FEATURE into subtypes.	CHAR(6)
meteorologic-feature-interpretation-code	The specific value that denotes the statistical meaning of a specified METEOROLOGIC-FEATURE.	CHAR(6)
meteorologic-feature-probability-ratio	The numeric quotient value that represents the likelihood that a specific condition will occur for a specific METEOROLOGIC-FEATURE. The value must be in the range from 0 to 1.	NUMBER(6,5)
meteorologic-feature-source-code	The specific value that denotes the basis for the estimate of a condition for a specific METEOROLOGIC-FEATURE.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

MilitaryObstacle

"A FACILITY designed to stop, impede, or divert movement of amphibious or ground forces."

Wrapper Attribute	Description	JC3IEDM Physical Type
military-obstacle-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
military-obstacle-category-code	The specific value that represents the class of MILITARY-OBSTACLE. It serves as a discriminator that partitions MILITARY-OBSTACLE into subtypes.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

MilitaryObstacleType

"A FACILITY-TYPE that is a class of man-made devices or passive defence works that are designed to stop, impede, or divert movement of amphibious or ground forces."

Wrapper Attribute	Description	JC3IEDM Physical Type
military-obstacle-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPEs."	NUMBER(20)
military-obstacle-type-category-code	The specific value that represents the class of MILITARY-OBSTACLE-TYPE.	CHAR(6)
military-obstacle-type-subcategory-code	The specific value that represents the detailed class of MILITARY-OBSTACLE-TYPE.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

MilitaryOrganisationType

A GOVERNMENT-ORGANISATION-TYPE that is officially sanctioned and is trained and equipped to exert force.

Wrapper Attribute	Description	JC3IEDM Physical Type
military-organisation-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPES."	NUMBER(20)
military-organisation-type-category-code	The specific value that represents the class of MILITARY-ORGANISATION-TYPE. It serves as a discriminator that partitions MILITARY-ORGANISATION-TYPE into subtypes.	CHAR(6)
military-organisation-type-service-code	"The specific value that represents a military, paramilitary, irregular force, force or group, capable of functioning as an offensive or defensive combat or support organisation."	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

MilitaryPostType

A MILITARY-ORGANISATION-TYPE with a set of duties that can be fulfilled by one person.

Wrapper Attribute	Description	JC3IEDM Physical Type
military-post-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPES."	NUMBER(20)
military-post-type-category-code	The specific value that represents the type classification of a MILITARY-POST-TYPE.	CHAR(6)
military-post-type-rank-code	The specific value that represents a designation for a military or naval grade that establishes the relative position or status of a specific MILITARY-POST-TYPE.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

MineStatus

A MATERIEL-STATUS that is a record of condition of a specific mine.

Wrapper Attribute	Description	JC3IEDM Physical Type
mine-status-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-status-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
mine-status-mine-buried-ratio	The numeric quotient value that represents the percentage of the maritime mine that is buried. The value must be in the range from 0 to 1.	NUMBER(6,5)
mine-status-code	The specific value that represents the status of a maritime mine.	CHAR(6)
mine-status-air-drop-effect-code	The specific value that represent the behaviour of air-delivered mine after weapon release.	CHAR(6)
mine-status-maritime-mine-qualifier-code	The specific value that represents the qualification status of a specific maritime mine.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Minefield

A MILITARY-OBSTACLE that is an area or volume containing mines.

Wrapper Attribute	Description	JC3IEDM Physical Type
minefield-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
minefield-category-code	The specific value that represents the class of MINEFIELD. It serves as a discriminator that partitions MINEFIELD into subtypes.	CHAR(6)

minefield-identification-text	The character string assigned to represent the designation of a minefield.	VARCHAR(15)
minefield-mine-spacing-dimension	The one-dimensional linear distance representing the distance between the mines emplaced in a specific MINEFIELD.	NUMBER(12,3)
minefield-destruction-datetime	The character string representing a point in time that designates the destruction of a specific MINEFIELD.	CHAR(18)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

MinefieldLand

A MINEFIELD that is an area of land containing mines.

Wrapper Attribute	Description	JC3IEDM Physical Type
minefield-land-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
minefield-land-depth-placement-code	The specific value that indicates the placement of mines with respect to the surface.	CHAR(6)
minefield-land-function-code	The specific value that represents the intended function of the specific MINEFIELD-LAND.	CHAR(6)
minefield-land-pattern-code	The specific value that represents the pattern of a specific MINEFIELD-LAND.	CHAR(6)
minefield-land-persistence-code	The specific value that represents the option for terminating the effectiveness of a specific MINEFIELD-LAND.	CHAR(6)
minefield-land-stopping-power-code	The specific value that represents the stopping power of a particular MINEFIELD-LAND.	CHAR(6)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

MinefieldMaritime

A MINEFIELD that is an area or volume of water containing mines.

Wrapper Attribute	Description	JC3IEDM Physical Type
minefield-maritime-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
minefield-maritime-depth-placement-code	The specific value that indicates the intended depth placement of maritime mines.	CHAR(6)
minefield-maritime-expected-vessel-transit-count	The integer value representing the expected number of transiting vessels.	NUMBER(6)
minefield-maritime-function-code	The specific value that represents the intended function of a specific MINEFIELD-MARITIME.	CHAR(6)
minefield-maritime-mmoe-initial-threat-probability-ratio	The numeric quotient value that represents the planned or estimated likelihood that the first target ship to enter the minefield will be a casualty. MMOE stands for Minefield Measurement Of Effectiveness. The value must be in the range from 0 to 1.	NUMBER(6,5)
minefield-maritime-detection-probability-ratio	The numeric quotient value that represents the probability that a mine will be located during MCM operations. The value must be in the range from 0 to 1.	NUMBER(6,5)
minefield-maritime-life-duration	The numeric value that represents a quantity of time in milliseconds for the estimated life of the MINEFIELD-MARITIME.	CHAR(19)
minefield-maritime-mine-detailed-text	The character string assigned to represent a description of a specific mine.	VARCHAR(50)
minefield-maritime-mines-laid-count	The integer value representing the number of maritime mines laid in a specific MINEFIELD-MARITIME.	NUMBER(6)

minefield-maritime-bottom-natural-camouflage-code	"The specific value that represents the description of the ground of a lake, river, or ocean, or other body of water with respect to the ability to hide mines on the bottom at a specific MINEFIELD-MARITIME."	CHAR(6)
minefield-maritime-subfunction-code	The specific value that represents the intended purpose of the MINEFIELD-MARITIME.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

MinefieldMaritimeCasualtyEstimate

An estimate of the average number of casualties for a given number of vessel transits through a specific MINEFIELD-MARITIME.

Wrapper Attribute	Description	JC3IEDM Physical Type
minefield-maritime-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
minefield-maritime-casualty-estimate-index	"The unique value, or set of characters, assigned to represent a specific MINEFIELD-MARITIME-CASUALTY-ESTIMATE for a specific MINEFIELD-MARITIME and to distinguish it from all other MINEFIELD-MARITIME-CASUALTY-ESTIMATEs for that MINEFIELD-MARITIME."	NUMBER(20)
minefield-maritime-casualty-estimate-average-count	The integer value representing the planned or estimated number of casualties for a specific MINEFIELD-MARITIME-CASUALTY-ESTIMATE that would occur as an average in a large number of transit attempts.	NUMBER(6)
minefield-maritime-casualty-estimate-given-transit-count	The integer value representing the given number of transits for a specific MINEFIELD-MARITIME-CASUALTY-ESTIMATE.	NUMBER(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

MinefieldMaritimeStatus

A FACILITY-STATUS that is a record of condition of a specific MINEFIELD-MARITIME.

Wrapper Attribute	Description	JC3IEDM Physical Type
minefield-maritime-status-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-status-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
minefield-maritime-status-code	The specific value that represents the known status of a MINEFIELD-MARITIME.	CHAR(6)
minefield-maritime-status-colour-code	The specific value that represents the known status of mined channels of a MINEFIELD-MARITIME.	CHAR(6)
minefield-maritime-status-expected-level-mcm-code	The specific values of expected mine countermeasures (MCM) to be employed against a MINEFIELD-MARITIME.	CHAR(6)
minefield-maritime-status-mines-detected-quantity	The numeric value representing the number of mines detected in a specific MINEFIELD-MARITIME.	NUMBER(6)
minefield-maritime-status-mines-detected-count	The integer value representing the number of mines detected in a specific MINEFIELD-MARITIME at the time of the report.	NUMBER(6)
minefield-maritime-status-mine-zone-risk-code	The specific value that represents the known threat (risk) of a MINEFIELD-MARITIME.	CHAR(6)
minefield-maritime-status-seeding-code	The specific value that indicates the seeding details for a MINEFIELD-MARITIME.	CHAR(6)
minefield-maritime-status-swept-depth-quantity	The numeric value representing the depth below the surface to which minesweeping has taken place. The unit of measure is metres.	NUMBER(12,3)
minefield-maritime-status-threat-ratio	The numeric quotient value that represents the current percentage threat to the enemy of a specific MINEFIELD-MARITIME. The value must be in the range from 0 to 1.	NUMBER(6,5)
minefield-maritime-status-mine-detection-code	The specific value that represents the status of the means of detection of a mine in a MINEFIELD-MARITIME.	CHAR(6)

minefield-maritime-status-mines-count	The integer value representing the number of mines within a specific maritime minefield at the time of the report.	NUMBER(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

MinefieldMaritimeSustainedThreatMeasureOfEffectiveness

A measure of effectiveness for a specific MINEFIELD-MARITIME in terms of probability of mine function against a transit vessel over a given period of time.

Wrapper Attribute	Description	JC3IEDM Physical Type
minefield-maritime-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
minefield-maritime-sustained-threat-measure-of-effectiveness-index	The unique value assigned to represent a specific MINEFIELD-MARITIME-SUSTAINED-THREAT-MEASURE-OF-EFFECTIVENESS for a specific MINEFIELD-MARITIME and to distinguish it from all other MINEFIELD-MARITIME-SUSTAINED-THREAT-MEASURE-OF-EFFECTIVENESSs for that MINEFIELD-MARITIME.	NUMBER(20)
minefield-maritime-sustained-threat-measure-of-effectiveness-planned-duration	The numeric value that represents a quantity of time in milliseconds for the planned or estimated duration for a specific MINEFIELD-MARITIME-SUSTAINED-THREAT-MEASURE-OF-EFFECTIVENESS.	CHAR(19)
minefield-maritime-sustained-threat-measure-of-effectiveness-probability-ratio	The numeric quotient value that represents the planned or estimated likelihood of threat over an extended period for a specific MINEFIELD-MARITIME-SUSTAINED-THREAT-MEASURE-OF-EFFECTIVENESS. The value must be in the range from 0 to 1.	NUMBER(6,5)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

MiscellaneousEquipmentType

An EQUIPMENT-TYPE whose designed function does not fit in any other defined category.

Wrapper Attribute	Description	JC3IEDM Physical Type
miscellaneous-equipment-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPEs."	NUMBER(20)
miscellaneous-equipment-type-category-code	The specific value that represents the class of MISCELLANEOUS-EQUIPMENT-TYPE.	CHAR(6)
miscellaneous-equipment-type-subcategory-code	The specific value that represents the detailed class of MISCELLANEOUS-EQUIPMENT-TYPE.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

MobilityCapability

"A CAPABILITY, required for planning, of those FACILITYs, MATERIELs, ORGANISATIONs and PERSONs or FACILITY-TYPEs, EQUIPMENT-TYPEs, ORGANISATION-TYPEs, and PERSON-TYPEs that are deemed as having the nominal ability to move in space, air, on water, under water, or over a specific type of terrain."

Wrapper Attribute	Description	JC3IEDM Physical Type
mobility-capability-id	"The unique value, or set of characters, assigned to represent a specific CAPABILITY and to distinguish it from all other CAPABILITYs."	NUMBER(20)
mobility-capability-category-code	The specific value that represents the class of MOBILITY-CAPABILITY.	CHAR(6)
mobility-capability-descriptor-code	The specific value that represents the MOBILITY-CAPABILITY that is being quantified.	CHAR(6)
mobility-capability-terrain-type-code	The specific value that represents the class of terrain to which a particular MOBILITY-CAPABILITY pertains.	CHAR(6)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Network

A FACILITY that provides bearer services for communication and information services and is composed of one or more links and nodes.

Wrapper Attribute	Description	JC3IEDM Physical Type
network-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
network-category-code	The specific value that represents the class of NETWORK.	CHAR(6)
network-subcategory-code	The specific value that represents the specific class of NETWORK.	CHAR(6)
network-architecture-code	The specific value that represents the architecture of a specific NETWORK.	CHAR(6)
network-channel-count	The integer value representing the number of channels that a specific NETWORK can provide.	NUMBER(6)
network-maximum-capacity-rate	The numeric value that represents the maximum data rate that a specific NETWORK can process. The unit of measure is kilobits per second (KBS). The specified value must be greater than or equal to 0 (zero).	NUMBER(8,4)
network-minimum-capacity-rate	The numeric value that represents the minimum data rate that a specific NETWORK is required to process. The unit of measure is kilobits per second (KBS). The specified value must be greater than or equal to 0 (zero).	NUMBER(8,4)
network-means-code	The specific value that represents the physical linkage between the nodes of a specific NETWORK.	CHAR(6)
network-set-number-count	The integer value representing the frequency hopping set number parameter for this specific NETWORK.	NUMBER(6)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

NetworkCapacity

An identification of the specific capacities of a NETWORK.

Wrapper Attribute	Description	JC3IEDM Physical Type
network-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
network-capacity-index	"The unique value, or set of characters, assigned to represent a specific NETWORK-CAPACITY for a specific NETWORK and to distinguish it from all other NETWORK-CAPACITYs for that NETWORK."	NUMBER(20)
network-capacity-bandwidth-code	The specific value that represents a bandwidth capacity that is supported by a NETWORK.	CHAR(6)
network-capacity-protocol-code	The specific value that represents an application-level (OSI model level 3 to 7) protocol governing the information transfer in a NETWORK.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

NetworkFrequency

The specification of a discrete frequency that is used on a specific NETWORK.

Wrapper Attribute	Description	JC3IEDM Physical Type
network-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)

network-frequency-index	"The unique value, or set of characters, assigned to represent a specific NETWORK-FREQUENCY for a specific NETWORK and to distinguish it from all other NETWORK-FREQUENCIES for that NETWORK."	NUMBER(20)
network-frequency-band-code	The specific value that represents the frequency band of a specific NETWORK.	CHAR(6)
network-frequency-channel-number-text	The character string assigned to represent the channel number associated with a specific NETWORK-FREQUENCY.	VARCHAR(6)
network-frequency-discrete-frequency-quantity	The numeric value that represents the radio frequency that a specific NETWORK may use. The unit of measure is kilohertz.	NUMBER(9)
network-frequency-band-lower-frequency-quantity	The numeric value that represents the lowest radio frequency of a specific contiguous band that a NETWORK may use. The unit of measure is kilohertz.	NUMBER(9)
network-frequency-band-upper-frequency-quantity	The numeric value that represents the highest radio frequency of a specific contiguous band that a NETWORK may use. The unit of measure is kilohertz.	NUMBER(9)
network-frequency-effective-start-datetime	The character string representing a point in time that designates the effective assignment of a specific OBJECT-TYPE-ESTABLISHMENT to a specific OBJECT-ITEM.	CHAR(18)
network-frequency-effective-end-datetime	The character string representing a point in time that designates the end of the authorised period of effectiveness for a specific NETWORK-FREQUENCY.	CHAR(18)
network-frequency-modulation-code	The specific value that represents the modulation of a specific NETWORK.	CHAR(6)
network-frequency-purpose-text	The character string assigned to represent the specific purpose of a NETWORK-FREQUENCY.	VARCHAR(255)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

NetworkService

An identification of the specific type of communications service provided by a specific NETWORK.

Wrapper Attribute	Description	JC3IEDM Physical Type
network-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
network-service-index	"The unique value, or set of characters, assigned to represent a specific NETWORK-SERVICE for a specific NETWORK and to distinguish it from all other NETWORK-SERVICES for that NETWORK."	NUMBER(20)
network-service-category-code	The specific value that represents a general type of service that a specific NETWORK is intended to provide.	CHAR(6)
network-service-subcategory-code	The specific value that represents a detailed type of service that a specific NETWORK is intended to provide.	CHAR(6)
network-service-cryptographic-indicator-code	The specific value that represents whether a specific NETWORK-SERVICE is encrypted.	CHAR(6)
network-service-cryptographic-plan-short-title-text	The character string assigned to represent a specific cryptographic plan.	VARCHAR(50)
network-service-cryptographic-code-short-title-text	The character string assigned to represent a specific cryptographic code.	VARCHAR(50)
network-service-iff-mode-code-text	The character string assigned to represent a specific IFF mode code combination.	VARCHAR(50)
security-classification-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

NetworkServiceStatus

A record of the perceived condition of a specific NETWORK-SERVICE as determined by the reporting organisation.

Wrapper Attribute	Description	JC3IEDM Physical Type
network-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
network-service-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
network-service-status-index	"The unique value, or set of characters, assigned to represent a specific NETWORK-SERVICE-STATUS for a specific NETWORK-SERVICE and to distinguish it from all other NETWORK-SERVICE-STATUSs for that NETWORK-SERVICE."	NUMBER(20)
network-service-status-indicator-code	The specific value that denotes whether the specific NETWORK-SERVICE is active.	CHAR(6)
reporting-data-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

NuclearEvent

A RADIOACTIVE-EVENT involving nuclear materiel and/or nuclear detonation.

Wrapper Attribute	Description	JC3IEDM Physical Type
nuclear-event-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
nuclear-event-category-code	The specific value that represents the class of NUCLEAR-EVENT. It serves as a discriminator that partitions NUCLEAR-EVENT into subtypes.	CHAR(6)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

NuclearWeaponEvent

A NUCLEAR-EVENT that involves the detonation of a nuclear device.

Wrapper Attribute	Description	JC3IEDM Physical Type
nuclear-weapon-event-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
nuclear-weapon-event-flash-to-bang-duration	The numeric value that represents a quantity of time in milliseconds from light being first observed until the sound of the nuclear detonation is heard in a specific NUCLEAR-WEAPON-EVENT.	CHAR(19)
nuclear-weapon-event-crater-presence-code	The specific value that represents the presence of a crater.	CHAR(6)
nuclear-weapon-event-crater-width-dimension	The one-dimensional linear distance representing the width of a crater caused by the detonation of a nuclear device.	NUMBER(12,3)
nuclear-weapon-event-yield-group-code	"The specific value that represents the energy released in the detonation of a nuclear weapon, measured in terms of the kilotons or megatons of trinitrotoluene required to produce the same energy release."	CHAR(6)
nuclear-weapon-event-yield-quantity	The numeric value that represents the energy release or predicted to be released by the detonation of a nuclear weapon. The unit of measure is kiloton.	NUMBER(4)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ObjectItem

An individually identified object that has military or civilian significance.

Wrapper Attribute	Description	JC3IEDM Physical Type
object-item-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-category-code	The specific value that represents the class of OBJECT-ITEM. It serves as a discriminator that partitions OBJECT-ITEM into subtypes.	CHAR(6)
object-item-name-text	The character string assigned to represent a specific OBJECT-ITEM.	VARCHAR(100)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ObjectItemAddress

"An association between an OBJECT-ITEM and an ADDRESS to specify the means by which a FACILITY, ORGANISATION or PERSON can be accessed."

Wrapper Attribute	Description	JC3IEDM Physical Type
object-item-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
address-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-address-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM-ADDRESS for a specific OBJECT-ITEM and a specific ADDRESS and to distinguish it from all other OBJECT-ITEM-ADDRESSES for that OBJECT-ITEM and that ADDRESS."	NUMBER(20)
object-item-address-call-sign-text	The character string assigned to represent a specific OBJECT-ITEM that uses a specific ADDRESS.	VARCHAR(50)

object-item-address-primacy-code	The specific value that represents the priority that a specific ADDRESS has with respect to a specific OBJECT-ITEM.	CHAR(6)
object-item-address-authorisation-indicator-code	The specific value that denotes whether the OBJECT-ITEM is permitted by command authority to use a specific ELECTRONIC-ADDRESS.	CHAR(6)
object-item-address-transmit-receive-code	The specific value that denotes the OBJECT-ITEM usage of an ELECTRONIC-ADDRESS in terms of transmission and reception.	CHAR(6)
network-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
network-frequency-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
reporting-data-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ObjectItemAffiliation

"A relationship between a specific OBJECT-ITEM and a specific AFFILIATION. Note: This entity is intended to record exceptions to affiliations identified in OBJECT-TYPE. Consequently, the native, normal or expected affiliation is identified by associating the item with an appropriate type."

Wrapper Attribute	Description	JC3IEDM Physical Type
object-item-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
affiliation-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-affiliation-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM-AFFILIATION for a specific OBJECT-ITEM and a specific AFFILIATION and to distinguish it from all other OBJECT-ITEM-AFFILIATIONS for that OBJECT-ITEM and that AFFILIATION."	NUMBER(20)

reporting-data-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ObjectItemAlias

An additional name for an OBJECT-ITEM.

Wrapper Attribute	Description	JC3IEDM Physical Type
object-item-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-alias-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM-ALIAS for a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEM-ALIASES for that OBJECT-ITEM."	NUMBER(20)
object-item-alias-category-code	The specific value that represents the class of OBJECT-ITEM-ALIAS.	CHAR(6)
object-item-alias-name-text	The character string assigned to represent a specific OBJECT-ITEM.	VARCHAR(50)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ObjectItemAssociation

A relationship of an OBJECT-ITEM as a subject with another OBJECT-ITEM as an object.

Wrapper Attribute	Description	JC3IEDM Physical Type
object-item-association-subject-object-item-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-association-object-object-item-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-association-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM-ASSOCIATION for a subject OBJECT-ITEM and an object OBJECT-ITEM and to distinguish it from all other OBJECT-ITEM-ASSOCIATIONS for those OBJECT-ITEMs."	NUMBER(20)
object-item-association-category-code	The specific value that represents the type of relationship between the subject OBJECT-ITEM and the object OBJECT-ITEM in a specific OBJECT-ITEM-ASSOCIATION.	CHAR(6)
object-item-association-subcategory-code	The specific value that represents the detailed type of relationship between the subject OBJECT-ITEM that is an ORGANISATION and the object OBJECT-ITEM that is an ORGANISATION in a specific OBJECT-ITEM-ASSOCIATION.	CHAR(6)
action-task-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ObjectItemAssociationStatus

A record of the perceived condition of a specific OBJECT-ITEM-ASSOCIATION as determined by the reporting organisation.

Wrapper Attribute	Description	JC3IEDM Physical Type
object-item-association-subject-object-item-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)

object-item-association-object-object-item-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-association-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-association-status-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM-ASSOCIATION-STATUS for a specific OBJECT-ITEM-ASSOCIATION and to distinguish it from all other OBJECT-ITEM-ASSOCIATION-STATUSs for that OBJECT-ITEM-ASSOCIATION."	NUMBER(20)
object-item-association-status-category-code	The specific value that indicates if the status of a specific OBJECT-ITEM-ASSOCIATION-STATUS refers to the beginning or termination of the association.	CHAR(6)
reporting-data-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ObjectItemCapability

A perceived value of a specific CAPABILITY of an OBJECT-ITEM.

Wrapper Attribute	Description	JC3IEDM Physical Type
object-item-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
capability-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-capability-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM-CAPABILITY for a specific OBJECT-ITEM and a specific CAPABILITY and to distinguish it from all other OBJECT-ITEM-CAPABILITYs for that OBJECT-ITEM and that CAPABILITY."	NUMBER(20)
object-item-capability-mission-primacy-code	"The specific value that represents the priority of the role that a specific capability, restricted to be an OPERATIONAL-CAPABILITY, has for the specific OBJECT-ITEM."	CHAR(6)

object-item-capability-quantity	The numeric value that represents the aggregated units of a specific CAPABILITY that is estimated to be attainable for a specific OBJECT-ITEM. The unit of measure is defined in the CAPABILITY specification.	NUMBER(12,3)
reporting-data-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ObjectItemGroupAccount

A reference to accounting for a set of groups that are associated with the specific OBJECT-ITEM at the time specified by REPORTING-DATA. The accounting may result from or be affected by a specific ACTION.

Wrapper Attribute	Description	JC3IEDM Physical Type
object-item-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-group-account-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM-GROUP-ACCOUNT for a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEM-GROUP-ACCOUNTs for that OBJECT-ITEM."	NUMBER(20)
object-item-group-account-name-text	The character string assigned to represent a specific OBJECT-ITEM-GROUP-ACCOUNT.	VARCHAR(50)
action-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
reporting-data-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ObjectItemGroupAccountDetail

The total count and condition of a specific group included in a specific OBJECT-ITEM-GROUP-ACCOUNT. The group is defined as a specific PERSON-TYPE that may also be categorised by a specific GROUP-CHARACTERISTIC.

Wrapper Attribute	Description	JC3IEDM Physical Type
object-item-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-group-account-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-group-account-detail-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM-GROUP-ACCOUNT-DETAIL for a specific OBJECT-ITEM-GROUP-ACCOUNT and to distinguish it from all other OBJECT-ITEM-GROUP-ACCOUNT-DETAILs for that OBJECT-ITEM-GROUP-ACCOUNT."	NUMBER(20)
object-item-group-account-detail-count	The integer value representing the aggregated units in a specific OBJECT-ITEM-GROUP-ACCOUNT-DETAIL.	NUMBER(9)
object-item-group-account-detail-qualifier-code	The specific value that describes the condition of the group counted in a specific OBJECT-ITEM-GROUP-ACCOUNT-DETAIL.	CHAR(6)
group-characteristic-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
person-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ObjectItemHostilityStatus

A record of the perceived hostility classification of a specific OBJECT-ITEM.

Wrapper Attribute	Description	JC3IEDM Physical Type
object-item-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-hostility-status-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM-HOSTILITY-STATUS for a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEM-HOSTILITY-STATUSs for that OBJECT-ITEM."	NUMBER(20)
object-item-hostility-status-code	The specific value that represents the perceived hostility status of a specific OBJECT-ITEM.	CHAR(6)
reporting-data-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ObjectItemLocation

An association of an OBJECT-ITEM with a LOCATION that enables the geographic position of the OBJECT-ITEM to be specified. The operational meaning of geometry may also be specified.

Wrapper Attribute	Description	JC3IEDM Physical Type
object-item-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
location-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-location-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM-LOCATION for a specific OBJECT-ITEM and a specific LOCATION and to distinguish it from all other OBJECT-ITEM-LOCATIONS for that OBJECT-ITEM and that LOCATION."	NUMBER(20)

object-item-location-vertical-accuracy-dimension	The one-dimensional linear distance representing the uncertainty in terms of probable error range for the vertical axis of a specific OBJECT-ITEM-LOCATION.	NUMBER(12,3)
object-item-location-horizontal-accuracy-dimension	The one-dimensional linear distance representing the uncertainty in the horizontal plane in terms of probable circular error for a specific OBJECT-ITEM-LOCATION.	NUMBER(12,3)
object-item-location-bearing-angle	The rotational measurement clockwise from the line of true North to the direction of motion in the horizontal plane of a specific OBJECT-ITEM at a specific LOCATION.	NUMBER(7,4)
object-item-location-bearing-accuracy-angle	The rotational measurement of a sector that represents the uncertainty range in the estimate of the bearing at a specific OBJECT-ITEM-LOCATION. The sector is bisected by the bearing.	NUMBER(7,4)
object-item-location-bearing-precision-code	The specific value that represents the maximum resolution used for the expression of a bearing angle.	CHAR(6)
object-item-location-inclination-angle	"The rotational measurement from the horizontal plane to the direction of motion of a specific OBJECT-ITEM at a specific LOCATION (point or shape), where the positive angle is vertically upward."	NUMBER(7,4)
object-item-location-inclination-accuracy-angle	The rotational measurement of a vertical sector that represents the uncertainty range in the estimate of the inclination at a specific OBJECT-ITEM-LOCATION. The sector is bisected by the inclination.	NUMBER(7,4)
object-item-location-inclination-precision-code	The specific value that represents the maximum resolution used for the expression of an inclination angle.	CHAR(6)
object-item-location-speed-rate	The numeric value that denotes the motion of a specific OBJECT-ITEM at a specific LOCATION in terms of distance per unit time. The unit of measure is kilometres per hour. The specified value must be greater than or equal to 0 (zero).	NUMBER(8,4)
object-item-location-speed-accuracy-rate	The numeric value that denotes the uncertainty range in the estimate for the speed at a specific OBJECT-ITEM-LOCATION where the speed estimate falls at the centre of the accuracy range. The unit of measure is kilometres per hour. The specified value must be greater than or equal to 0 (zero).	NUMBER(8,4)
object-item-location-speed-precision-code	The specific value that represents the maximum resolution used for the expression of speed.	CHAR(6)
object-item-location-meaning-code	The specific value that represents the meaning of the LOCATION geometry as it pertains to the OBJECT-ITEM.	CHAR(6)
object-item-location-relative-speed-code	The specific value that represents the speed of the object relative to its normal speed.	CHAR(6)

reporting-data-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ObjectItemObjectTypeEstablishment

A specification of an OBJECT-TYPE-ESTABLISHMENT that is authorised for a specific OBJECT-ITEM.

Wrapper Attribute	Description	JC3IEDM Physical Type
object-item-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
established-object-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-type-establishment-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-object-type-establishment-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM-OBJECT-TYPE-ESTABLISHMENT for a specific OBJECT-ITEM and a specific OBJECT-TYPE-ESTABLISHMENT and to distinguish it from all other OBJECT-ITEM-OBJECT-TYPE-ESTABLISHMENTS for that OBJECT-ITEM and that OBJECT-TYPE."	NUMBER(20)
object-item-object-type-establishment-effective-datetime	The character string representing a point in time that designates the effective assignment date of a specific OBJECT-TYPE-ESTABLISHMENT to a specific OBJECT-ITEM.	CHAR(18)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ObjectItemReferenceAssociation

A relationship between a specific OBJECT-ITEM and a specific REFERENCE.

Wrapper Attribute	Description	JC3IEDM Physical Type
object-item-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
reference-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-reference-association-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM-REFERENCE-ASSOCIATION for a specific OBJECT-ITEM and a specific REFERENCE and to distinguish it from all other OBJECT-ITEM-REFERENCE-ASSOCIATIONS for that OBJECT-ITEM and that REFERENCE."	NUMBER(20)
object-item-reference-association-category-code	The specific value that represents the class of a specific OBJECT-ITEM-REFERENCE-ASSOCIATION.	CHAR(6)
object-item-reference-association-specific-part-text	The character string assigned to represent a specific part of the artefact that applies in a specific OBJECT-ITEM-REFERENCE-ASSOCIATION.	VARCHAR(50)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ObjectItemStatus

A record of the perceived condition of a specific OBJECT-ITEM as determined by the reporting organisation.

Wrapper Attribute	Description	JC3IEDM Physical Type
object-item-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-status-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM-STATUS for a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEM-STATUSs for that OBJECT-ITEM."	NUMBER(20)

object-item-status-category-code	The specific value that represents the class of OBJECT-ITEM-STATUS. It serves as a discriminator that partitions OBJECT-ITEM-STATUS into subtypes.	CHAR(6)
object-item-status-booby-trap-presence-code	The specific value that indicates whether a specific OBJECT-ITEM has been booby-trapped.	CHAR(6)
object-item-status-emission-control-code	The specific value that represents the emission control status of a specific OBJECT-ITEM.	CHAR(6)
reporting-data-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ObjectItemType

A record of the perceived classification of a specific OBJECT-ITEM as a specific OBJECT-TYPE.

Wrapper Attribute	Description	JC3IEDM Physical Type
object-item-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-type-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM-TYPE for a specific OBJECT-ITEM and a specific OBJECT-TYPE and to distinguish it from all other OBJECT-ITEM-TYPEs for that OBJECT-ITEM and that OBJECT-TYPE."	NUMBER(20)
reporting-data-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ObjectReference

A RELATIVE-COORDINATE-SYSTEM that has its frame of reference defined by using the position and orientation of a specific OBJECT-ITEM at a given point in time.

Wrapper Attribute	Description	JC3IEDM Physical Type
relative-coordinate-system-id	"The unique value, or set of characters, assigned to represent a specific RELATIVE-COORDINATE-SYSTEM and to distinguish it from all other RELATIVE-COORDINATE-SYSTEMs."	NUMBER(20)
object-reference-object-item-id	"The unique value, or set of characters, assigned to represent a specific RELATIVE-COORDINATE-SYSTEM and to distinguish it from all other RELATIVE-COORDINATE-SYSTEMs."	NUMBER(20)
object-reference-location-id	"The unique value, or set of characters, assigned to represent a specific RELATIVE-COORDINATE-SYSTEM and to distinguish it from all other RELATIVE-COORDINATE-SYSTEMs."	NUMBER(20)
object-reference-object-item-location-index	"The unique value, or set of characters, assigned to represent a specific RELATIVE-COORDINATE-SYSTEM and to distinguish it from all other RELATIVE-COORDINATE-SYSTEMs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ObjectType

An individually identified class of objects that has military or civilian significance.

Wrapper Attribute	Description	JC3IEDM Physical Type
object-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPEs."	NUMBER(20)

object-type-category-code	The specific value that represents the class of OBJECT-TYPE. It serves as a discriminator that partitions OBJECT-TYPE into subtypes.	CHAR(6)
object-type-decoy-indicator-code	The specific value that denotes whether a specific OBJECT-TYPE represents an object class acting as a decoy.	CHAR(6)
object-type-name-text	The character string assigned to represent a specific OBJECT-TYPE.	VARCHAR(100)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ObjectTypeAffiliation

A relationship between a specific OBJECT-TYPE and a specific AFFILIATION that identifies an inherent allegiance.

Wrapper Attribute	Description	JC3IEDM Physical Type
object-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPEs."	NUMBER(20)
affiliation-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPEs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ObjectTypeCapabilityNorm

The standard value of a specific CAPABILITY of an OBJECT-TYPE.

Wrapper Attribute	Description	JC3IEDM Physical Type
object-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPES."	NUMBER(20)
capability-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPES."	NUMBER(20)
object-type-capability-norm-mission-primacy-code	"The specific value that represents the priority of the role that a specific capability, restricted to be an OPERATIONAL-CAPABILITY, has for the specific OBJECT-TYPE."	CHAR(6)
object-type-capability-norm-quantity	The numeric value that represents the aggregated units of a specific CAPABILITY that is specified in a particular OBJECT-TYPE-CAPABILITY-NORM to be attainable for a specific OBJECT-TYPE. The unit of measure is defined in the CAPABILITY specification.	NUMBER(12,3)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ObjectTypeEstablishment

The authorisation or other form of specification that associates with the established OBJECT-TYPE numbers of specific OBJECT-TYPES under specified conditions.

Wrapper Attribute	Description	JC3IEDM Physical Type
established-object-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPES."	NUMBER(20)
object-type-establishment-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE-ESTABLISHMENT for a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPE-ESTABLISHMENTS for that OBJECT-TYPE."	NUMBER(20)
object-type-establishment-effective-datetime	The character string representing a point in time that designates the beginning date of the period of effectiveness of a specific OBJECT-TYPE-ESTABLISHMENT.	CHAR(18)

object-type-establishment-category-code	The specific value that represents the class of OBJECT-TYPE-ESTABLISHMENT when the established and detail OBJECT-TYPEs are instances of MATERIEL-TYPE.	CHAR(6)
object-type-establishment-environment-condition-code	The specific value that represents the environmental conditions for which a specific OBJECT-TYPE-ESTABLISHMENT is authorised.	CHAR(6)
object-type-establishment-name-text	The character string assigned to represent a specific OBJECT-TYPE-ESTABLISHMENT.	VARCHAR(80)
object-type-establishment-operational-mode-code	The specific value that represents the operational mode for which a specific OBJECT-TYPE-ESTABLISHMENT is authorised.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ObjectTypeEstablishmentObjectTypeDetail

The number of a specific OBJECT-TYPE that is authorised by a specific OBJECT-TYPE-ESTABLISHMENT.

Wrapper Attribute	Description	JC3IEDM Physical Type
established-object-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPEs."	NUMBER(20)
object-type-establishment-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPEs."	NUMBER(20)
object-type-establishment-object-type-detail-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE-ESTABLISHMENT-OBJECT-TYPE-DETAIL for a specific ""established"" OBJECT-TYPE and to distinguish it from all other OBJECT-TYPE-ESTABLISHMENT-OBJECT-TYPE-DETAILs for that OBJECT-TYPE."	NUMBER(20)
object-type-establishment-object-type-detail-major-part-indicator-code	The specific value that denotes whether a detail is a 'major part' when the established and detail OBJECT-TYPEs are instances of MATERIEL-TYPE.	CHAR(6)
object-type-establishment-object-type-detail-count	The integer value representing the count of the numbers of a specific OBJECT-TYPE authorised to be part of a specific OBJECT-TYPE-ESTABLISHMENT-OBJECT-TYPE-DETAIL.	NUMBER(9)

object-type-establishment-detail-object-type-establishment-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPES."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)
object-type-establishment-object-type-detail-object-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPES."	NUMBER(20)

ObjectTypeReferenceAssociation

A relationship between a specific OBJECT-TYPE and a specific REFERENCE.

Wrapper Attribute	Description	JC3IEDM Physical Type
object-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPES."	NUMBER(20)
reference-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPES."	NUMBER(20)
object-type-reference-association-category-code	The specific value that represents the class of a specific OBJECT-TYPE-REFERENCE-ASSOCIATION.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

OperationalCapability

"A CAPABILITY, required for planning, of those objects and types of objects that are deemed as having the ability, the training and the equipment to perform an operation."

Wrapper Attribute	Description	JC3IEDM Physical Type
operational-capability-id	"The unique value, or set of characters, assigned to represent a specific CAPABILITY and to distinguish it from all other CAPABILITYs."	NUMBER(20)
operational-capability-category-code	The specific value that identifies a particular OPERATIONAL-CAPABILITY.	CHAR(6)
operational-capability-level-code	The specific value that represents the force level at which the specific OPERATIONAL-CAPABILITY is intended to be performed.	CHAR(6)
operational-capability-qualifier-code	The specific value that represents the degree to which the specific OPERATIONAL-CAPABILITY can be fulfilled.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

OperationalInformationGroup

A CONTEXT that encompasses a set of pre-defined operational information.

Wrapper Attribute	Description	JC3IEDM Physical Type
operational-information-group-id	"The unique value, or set of characters, assigned to represent a specific CONTEXT and to distinguish it from all other CONTEXTs."	NUMBER(20)
operational-information-group-category-code	The specific value that represents the class of OPERATIONAL-INFORMATION-GROUP.	CHAR(6)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

OperationalInformationGroupOrganisationAssociation

A relationship of a specific OPERATIONAL-INFORMATION-GROUP with a specific ORGANISATION for specifying the role of the ORGANISATION with respect to the OPERATIONAL-INFORMATION-GROUP.

Wrapper Attribute	Description	JC3IEDM Physical Type
operational-information-group-id	"The unique value, or set of characters, assigned to represent a specific CONTEXT and to distinguish it from all other CONTEXTs."	NUMBER(20)
organisation-id	"The unique value, or set of characters, assigned to represent a specific CONTEXT and to distinguish it from all other CONTEXTs."	NUMBER(20)
operational-information-group-organisation-association-index	"The unique value, or set of characters, assigned to represent a specific OPERATIONAL-INFORMATION-GROUP-ORGANISATION-ASSOCIATION for a specific OPERATIONAL-INFORMATION-GROUP and a specific ORGANISATION and to distinguish it from all other OPERATIONAL-INFORMATION-GROUP-ORGANISATION-ASSOCIATIONs for that OPERATIONAL-INFORMATION-GROUP and that ORGANISATION."	NUMBER(20)
operational-information-group-organisation-association-category-code	The specific value that represents the type of relationship between a specific OPERATIONAL-INFORMATION-GROUP and a specific ORGANISATION in a specific OPERATIONAL-INFORMATION-GROUP-ORGANISATION-ASSOCIATION.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

OperationalInformationGroupOrganisationAssociationStatus

A record of the perceived state of a specific OPERATIONAL-INFORMATION-GROUP-ORGANISATION-ASSOCIATION-STATUS as determined by the establishing organisation.

Wrapper Attribute	Description	JC3IEDM Physical Type
operational-information-group-id	"The unique value, or set of characters, assigned to represent a specific CONTEXT and to distinguish it from all other CONTEXTs."	NUMBER(20)
organisation-id	"The unique value, or set of characters, assigned to represent a specific CONTEXT and to distinguish it from all other CONTEXTs."	NUMBER(20)
operational-information-group-organisation-association-index	"The unique value, or set of characters, assigned to represent a specific CONTEXT and to distinguish it from all other CONTEXTs."	NUMBER(20)
operational-information-group-organisation-association-status-index	"The unique value, or set of characters, assigned to represent a specific OPERATIONAL-INFORMATION-GROUP-ORGANISATION-ASSOCIATION-STATUS for a specific OPERATIONAL-INFORMATION-GROUP-ORGANISATION-ASSOCIATION and to distinguish it from all other OPERATIONAL-INFORMATION-GROUP-ORGANISATION-ASSOCIATION-STATUSs for that OPERATIONAL-INFORMATION-GROUP-ORGANISATION-ASSOCIATION."	NUMBER(20)
operational-information-group-organisation-association-status-category-code	The specific value that indicates whether a specific OPERATIONAL-INFORMATION-GROUP-ORGANISATION-ASSOCIATION-STATUS refers to the beginning or termination of the association.	CHAR(6)
operational-information-group-organisation-association-status-effective-datetime	The character string representing a point in time that designates the beginning of the period of effectiveness for a specific OPERATIONAL-INFORMATION-GROUP-ORGANISATION-ASSOCIATION-STATUS.	CHAR(18)
operational-information-group-organisation-association-status-establishing-organisation-id	"The unique value, or set of characters, assigned to represent a specific CONTEXT and to distinguish it from all other CONTEXTs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

OperationalInformationGroupPlanOrderContent

The identification of a specific PLAN-ORDER that is included as content in a specific OPERATIONAL-INFORMATION-GROUP.

Wrapper Attribute	Description	JC3IEDM Physical Type
operational-information-group-id	"The unique value, or set of characters, assigned to represent a specific CONTEXT and to distinguish it from all other CONTEXTs."	NUMBER(20)
operational-information-group-plan-order-content-index	"The unique value, or set of characters, assigned to represent a specific OPERATIONAL-INFORMATION-GROUP-PLAN-ORDER-CONTENT for a specific OPERATIONAL-INFORMATION-GROUP and to distinguish it from all other OPERATIONAL-INFORMATION-GROUP-PLAN-ORDER-CONTENTs for that OPERATIONAL-INFORMATION-GROUP."	NUMBER(20)
operational-information-group-plan-order-content-category-code	The specific value that indicates the beginning or end of the association between a specific OPERATIONAL-INFORMATION-GROUP and a specific PLAN-ORDER.	CHAR(6)
operational-information-group-plan-order-content-datetime	The character string representing a point in time for a specific OPERATIONAL-INFORMATION-GROUP-PLAN-ORDER-CONTENT.	CHAR(18)
plan-order-id	"The unique value, or set of characters, assigned to represent a specific CONTEXT and to distinguish it from all other CONTEXTs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

OrbitArea

"A SURFACE that is (a) an open rectangular section defined by its width and the distance between the two specific POINTS, (b) is closed by two half-circles with radii equal to half the width, and is positioned left, centred, or right with respect to the line formed by the defining points."

Wrapper Attribute	Description	JC3IEDM Physical Type
orbit-area-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)

orbit-area-alignment-code	The specific value that represents the placement of a specific ORBIT-AREA with respect to its defining reference axis.	CHAR(6)
orbit-area-width-dimension	The one-dimensional linear distance representing the horizontal distance measured from side to side for a specific ORBIT-AREA.	NUMBER(12,3)
orbit-area-first-point-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
orbit-area-second-point-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Order

A communication that conveys instructions from a superior to a subordinate.

Wrapper Attribute	Description	JC3IEDM Physical Type
order-id	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDERS."	NUMBER(20)
order-category-code	The specific value that represents the type of ORDER.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

OrderStatus

A record of the condition of a specific ORDER.

Wrapper Attribute	Description	JC3IEDM Physical Type
order-id	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDERS."	NUMBER(20)
order-status-index	"The unique value, or set of characters, assigned to represent a specific ORDER-STATUS for a specific ORDER and to distinguish it from all other ORDER-STATUSs for that ORDER."	NUMBER(20)
order-status-execution-state-code	The specific value assigned to represent the state of execution for a specific ORDER.	CHAR(6)
order-status-datetime	The character string representing the point in time for a specific ORDER-STATUS.	CHAR(18)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Organisation

An OBJECT-ITEM that is an administrative or functional structure.

Wrapper Attribute	Description	JC3IEDM Physical Type
organisation-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
organisation-category-code	The specific value that represents the class of ORGANISATION. It serves as a discriminator that partitions ORGANISATION into subtypes.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

OrganisationActionAssociation

A relationship indicating the role of a specific ORGANISATION with respect to a specific ACTION.

Wrapper Attribute	Description	JC3IEDM Physical Type
organisation-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
action-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
organisation-action-association-index	"The unique value, or set of characters, assigned to represent a specific ORGANISATION-ACTION-ASSOCIATION for a specific ORGANISATION and a specific ACTION and to distinguish it from all other ORGANISATION-ACTION-ASSOCIATIONS for that ORGANISATION and that ACTION."	NUMBER(20)
organisation-action-association-category-code	The specific value that represents the type of relationship between a specific ORGANISATION and a specific ACTION for a specific ORGANISATION-ACTION-ASSOCIATION.	CHAR(6)
organisation-action-association-effective-datetime	The character string representing a point in time that designates the beginning of the period of effectiveness for a specific ORGANISATION-ACTION-ASSOCIATION.	CHAR(18)
organisation-action-association-intent-text	The character string assigned to represent a statement by a specific ORGANISATION outlining the commander's intent or the concept of operations with regard to a specific ACTION.	VARCHAR(2000)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

OrganisationActionTaskRuleOfEngagementStatus

"The status of the relationship between a specific ORGANISATION and a specific ACTION-TASK-RULE-OF-ENGAGEMENT with respect to a request for application, a request for cancellation, or an authorisation."

Wrapper Attribute	Description	JC3IEDM Physical Type
action-task-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)

rule-of-engagement-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
organisation-action-task-rule-of-engagement-status-organisation-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
organisation-action-task-rule-of-engagement-status-index	"The unique value, or set of characters, assigned to represent a specific ORGANISATION-ACTION-TASK-RULE-OF-ENGAGEMENT-STATUS for a specific ACTION-TASK-RULE-OF-ENGAGEMENT and to distinguish it from all other ORGANISATION-ACTION-TASK-RULE-OF-ENGAGEMENT-STATUSs for that ACTION-TASK-RULE-OF-ENGAGEMENT."	NUMBER(20)
organisation-action-task-rule-of-engagement-status-category-code	The specific value that represents the role a responsible ORGANISATION has with respect to the imposition or removal of a specific ACTION-TASK-RULE-OF-ENGAGEMENT.	CHAR(6)
organisation-action-task-rule-of-engagement-status-effective-start-datetime	The character string representing a point in time that designates the beginning of the requested or authorised period of effectiveness for a specific ACTION-TASK-RULE-OF-ENGAGEMENT.	CHAR(18)
organisation-action-task-rule-of-engagement-status-effective-end-datetime	The character string representing a point in time that designates the ending of the requested or authorised period of effectiveness for a specific ACTION-TASK-RULE-OF-ENGAGEMENT.	CHAR(18)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

OrganisationMaterielTypeAssociation

A relationship of an ORGANISATION as a subject with a MATERIEL-TYPE as an object.

Wrapper Attribute	Description	JC3IEDM Physical Type
organisation-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
materiel-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
organisation-materiel-type-association-reportable-type-code	The specific value that represents the class of ORGANISATION-MATERIEL-TYPE-ASSOCIATION.	CHAR(6)

organisation-materiel-type-association-reportable-type-text	"The character string assigned to represent the Reportable type code for a specific MATERIEL-TYPE, as assigned by a specific ORGANISATION."	VARCHAR(6)
organisation-materiel-type-association-reportable-type-datetime	The character string representing a point in time that designates when the Reportable type code referenced by the ORGANISATION-MATERIEL-TYPE-ASSOCIATION is assigned.	CHAR(18)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

OrganisationPlanOrderAssociation

A relationship of an ORGANISATION to a PLAN-ORDER specifying the role of the ORGANISATION with respect to the PLAN-ORDER.

Wrapper Attribute	Description	JC3IEDM Physical Type
organisation-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
plan-order-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
organisation-plan-order-association-index	"The unique value, or set of characters, assigned to represent a specific ORGANISATION-PLAN-ORDER-ASSOCIATION for a specific ORGANISATION and a specific PLAN-ORDER and to distinguish it from all other ORGANISATION-PLAN-ORDER-ASSOCIATIONS for that ORGANISATION and that PLAN-ORDER."	NUMBER(20)
organisation-plan-order-association-category-code	The specific value that represents the responsibility of the specific ORGANISATION with respect to the specific PLAN-ORDER.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

OrganisationPlanOrderAssociationStatus

A record of the perceived state of a specific ORGANISATION-PLAN-ORDER-ASSOCIATION as determined by the establishing organisation.

Wrapper Attribute	Description	JC3IEDM Physical Type
organisation-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
plan-order-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
organisation-plan-order-association-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
organisation-plan-order-association-status-index	"The unique value, or set of characters, assigned to represent a specific ORGANISATION-PLAN-ORDER-ASSOCIATION-STATUS for a specific ORGANISATION-PLAN-ORDER-ASSOCIATION and to distinguish it from all other ORGANISATION-PLAN-ORDER-ASSOCIATION-STATUSs for that ORGANISATION-PLAN-ORDER-ASSOCIATION."	NUMBER(20)
organisation-plan-order-association-status-category-code	The specific value that indicates whether a specific ORGANISATION-PLAN-ORDER-ASSOCIATION-STATUS refers to the beginning or termination of the association.	CHAR(6)
organisation-plan-order-association-status-datetime	The character string representing a point in time when a specific ORGANISATION-PLAN-ORDER-ASSOCIATION-STATUS has been established.	CHAR(18)
establishing-organisation-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

OrganisationReferenceAssociation

A relationship between a specific ORGANISATION and a specific REFERENCE.

Wrapper Attribute	Description	JC3IEDM Physical Type
organisation-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
reference-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
organisation-reference-association-index	"The unique value, or set of characters, assigned to represent a specific ORGANISATION-REFERENCE-ASSOCIATION for a specific ORGANISATION and a specific REFERENCE and to distinguish it from all other ORGANISATION-REFERENCE-ASSOCIATIONS for that ORGANISATION and that REFERENCE."	NUMBER(20)
organisation-reference-association-category-code	The specific value that represents the class of a specific ORGANISATION-REFERENCE-ASSOCIATION.	CHAR(6)
organisation-reference-association-start-datetime	The character string representing a point in time that designates the start of a specific ORGANISATION-REFERENCE-ASSOCIATION.	CHAR(18)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

OrganisationStatus

An OBJECT-ITEM-STATUS that is a record of condition of a specific ORGANISATION.

Wrapper Attribute	Description	JC3IEDM Physical Type
organisation-status-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-status-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)

organisation-status-operational-status-code	The specific value that represents the operational status of a specific ORGANISATION.	CHAR(6)
organisation-status-operational-status-qualifier-code	The specific value that represents the qualification of the operational status of a specific ORGANISATION.	CHAR(6)
organisation-status-availability-code	The specific value that gives the availability status of an ORGANISATION without regard to readiness.	CHAR(6)
organisation-status-command-and-control-role-code	The specific value that represents the role played by a command and control ORGANISATION.	CHAR(6)
organisation-status-commitment-status-code	The specific value that gives the commitment status of an ORGANISATION.	CHAR(6)
organisation-status-fire-mode-code	The specific value that represents the status of weapons employment constraint for a specific ORGANISATION.	CHAR(6)
organisation-status-cbrn-dress-state-code	The specific value that represents the Mission Oriented Protective Posture (MOPP) status defining the NBC (CBRN) dress code of a specific ORGANISATION.	CHAR(6)
organisation-status-radiation-dose-quantity	The numeric value that represents the average radiation dose to which the members of an organisation have been exposed. The unit of measure is centiGray (cGy).	NUMBER(6)
organisation-status-readiness-code	The specific value that gives the readiness level of an ORGANISATION.	CHAR(6)
organisation-status-readiness-duration	The numeric value that represents a quantity of time in milliseconds reflecting the maximum interval in which an ORGANISATION is to respond to an immediate order.	CHAR(19)
organisation-status-reinforcement-code	The specific value that represents whether a specific ORGANISATION has additional or detached strength.	CHAR(6)
organisation-status-reserve-indicator-code	The specific value that represents whether a specific ORGANISATION has been placed in reserve.	CHAR(6)
organisation-status-training-code	The specific value that represents the assessed training status of a specific ORGANISATION.	CHAR(6)
organisation-status-usage-status-code	The specific value that represents the usage of a specific ORGANISATION.	CHAR(6)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

OrganisationStructure

The hierarchical configuration of a specific root ORGANISATION where the configuration is specified by reference to a set of associations between instances of OBJECT-ITEM.

Wrapper Attribute	Description	JC3IEDM Physical Type
organisation-structure-root-organisation-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
organisation-structure-index	"The unique value, or set of characters, assigned to represent a specific ORGANISATION-STRUCTURE for a specific ORGANISATION and to distinguish it from all other ORGANISATION-STRUCTUREs for that ORGANISATION."	NUMBER(20)
organisation-structure-name-text	The character string assigned to represent a specific ORGANISATION-STRUCTURE.	VARCHAR(100)
reporting-data-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

OrganisationStructureDetail

The identification of a specific OBJECT-ITEM-ASSOCIATION as an element in a specific ORGANISATION-STRUCTURE.

Wrapper Attribute	Description	JC3IEDM Physical Type
organisation-structure-root-organisation-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
organisation-structure-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
organisation-structure-detail-index	"The unique value, or set of characters, assigned to represent a specific ORGANISATION-STRUCTURE-DETAIL for a specific ORGANISATION-STRUCTURE and to distinguish it from all other ORGANISATION-STRUCTURE-DETAILs for that ORGANISATION-STRUCTURE."	NUMBER(20)
object-item-association-subject-object-item-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-association-object-object-item-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-association-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

OrganisationType

An OBJECT-TYPE that represents administrative or functional structures.

Wrapper Attribute	Description	JC3IEDM Physical Type
organisation-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPEs."	NUMBER(20)
organisation-type-category-code	The specific value that represents the class of ORGANISATION-TYPE. It serves as a discriminator that partitions ORGANISATION-TYPE into subtypes.	CHAR(6)

organisation-type-command-function-indicator-code	The specific value that denotes whether an ORGANISATION-TYPE has a command function.	CHAR(6)
organisation-type-command-and-control-category-code	The specific value that denotes the command and control classification of an ORGANISATION-TYPE.	CHAR(6)
organisation-type-description-text	The character string assigned to represent the specific ORGANISATION-TYPE.	VARCHAR(50)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Person

An OBJECT-ITEM that is a human being to whom military or civilian significance is attached.

Wrapper Attribute	Description	JC3IEDM Physical Type
person-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
person-birth-datetime	The character string representing a point in time that designates the date when a specific PERSON was born.	CHAR(18)
person-blood-type-code	A code which represents the specific blood type of a PERSON.	CHAR(6)
person-gender-code	A code that represents the classification of a PERSON based on reproductive physiological traits.	CHAR(6)
person-professing-indicator-code	The specific value that represents whether a specific PERSON professes a religious preference.	CHAR(6)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

PersonIdentificationDocument

A document used to identify a specific PERSON.

Wrapper Attribute	Description	JC3IEDM Physical Type
person-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
person-identification-document-index	"The unique value, or set of characters, assigned to represent a specific PERSON-IDENTIFICATION-DOCUMENT for a specific PERSON and to distinguish it from all other PERSON-IDENTIFICATION-DOCUMENTs for that PERSON."	NUMBER(20)
person-identification-document-code	The specific value that represents the type of document used to identify a specific PERSON.	CHAR(6)
person-identification-document-number-text	The character string assigned to represent the identifying number of the specific document used to identify a PERSON.	VARCHAR(50)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

PersonLanguageSkill

A proficiency or ability of a specific PERSON with regard to a specific language.

Wrapper Attribute	Description	JC3IEDM Physical Type
person-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)

person-language-skill-index	"The unique value, or set of characters, assigned to represent a specific PERSON-LANGUAGE-SKILL for a specific PERSON and to distinguish it from all other PERSON-LANGUAGE-SKILLS for that PERSON."	NUMBER(20)
person-language-skill-category-code	The specific value that represents the particular language of PERSON-LANGUAGE-SKILL.	CHAR(6)
person-language-skill-general-proficiency-code	The specific value that represents the general level of proficiency of a specific PERSON in a specific language skill.	CHAR(6)
person-language-skill-listening-proficiency-level-code	The specific value that represents the level of listening comprehension of a specific PERSON in a specific language skill.	CHAR(6)
person-language-skill-reading-proficiency-level-code	The specific value that represents the level of reading comprehension of a specific PERSON in a specific language skill.	CHAR(6)
person-language-skill-speaking-proficiency-level-code	The specific value that represents the level of speaking proficiency of a specific PERSON in a specific language skill.	CHAR(6)
person-language-skill-writing-proficiency-level-code	The specific value that represents the level of writing proficiency of a specific PERSON in a specific language skill.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

PersonStatus

An OBJECT-ITEM-STATUS that is a record of condition of a specific PERSON.

Wrapper Attribute	Description	JC3IEDM Physical Type
person-status-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-status-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)

person-status-duty-status-code	The specific value that represents the availability of a specific PERSON for duty at a military or civilian post of employment.	CHAR(6)
person-status-physical-status-code	The specific value that represents the general physical status of a specific PERSON.	CHAR(6)
person-status-physical-status-qualifier-code	The specific value that qualifies the health conditions of a specific PERSON at a specific point in time.	CHAR(6)
person-status-radiation-dose-quantity	The numeric value that represents the total radiation dose to which a person has been exposed. The unit of measure is centiGray (cGy).	NUMBER(6)
person-status-reserve-indicator-code	The specific value that represents whether a specific PERSON has been placed in reserve.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

PersonType

An OBJECT-TYPE that represents human beings about whom information is to be held.

Wrapper Attribute	Description	JC3IEDM Physical Type
person-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPES."	NUMBER(20)
person-type-category-code	The specific value that represents the class of PERSON-TYPE.	CHAR(6)
person-type-subcategory-code	The specific value that represents the detailed class of PERSON-TYPE.	CHAR(6)
person-type-rank-code	"The specific value that represents a designation for a military, naval, or civil grade that establishes the relative position or status of a specific PERSON-TYPE in an organisation."	CHAR(6)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

PhysicalAddress

"An ADDRESS that represents a physical location that is reachable by use of transportation, to include the use of postal services."

Wrapper Attribute	Description	JC3IEDM Physical Type
address-id	"The unique value, or set of characters, assigned to represent a specific ADDRESS and to distinguish it from all other ADDRESSs."	NUMBER(20)
physical-address-category-code	The specific value that represents the class of the PHYSICAL-ADDRESS.	CHAR(6)
physical-address-residence-text	The character string assigned to represent the residence name of the PHYSICAL-ADDRESS.	VARCHAR(50)
physical-address-street-text	The character string assigned to represent the street name for a specific PHYSICAL-ADDRESS.	VARCHAR(50)
physical-address-street-additional-text	"The character string assigned to represent specific additional information such as the house number, the apartment number, rural route number, building number, room number, office or equivalent number to complete the physical address for a specific PHYSICAL-ADDRESS."	VARCHAR(50)
physical-address-postal-box-text	The character string assigned to represent a specific post office box of the PHYSICAL-ADDRESS.	VARCHAR(15)
physical-address-postbox-identifier-text	The character string assigned to represent a specific letter box number of the PHYSICAL-ADDRESS.	VARCHAR(15)
physical-address-city-text	The character string assigned to represent the city name of the PHYSICAL-ADDRESS.	VARCHAR(50)

physical-address-geographic-text	The character string assigned to represent the geographic region of the PHYSICAL-ADDRESS.	VARCHAR(50)
physical-address-postal-code-text	The character string assigned to represent the postal code of the PHYSICAL-ADDRESS.	VARCHAR(15)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Plan

A proposal for putting into effect a command decision or project; it represents the preparation for future or anticipated operations.

Wrapper Attribute	Description	JC3IEDM Physical Type
plan-id	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDERS."	NUMBER(20)
plan-category-code	The specific value that represents the type of PLAN.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

PlanOrder

A planned or ordered scheme worked out beforehand for the accomplishment of an operational objective.

Wrapper Attribute	Description	JC3IEDM Physical Type
plan-order-id	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDERS."	NUMBER(20)

plan-order-category-code	The specific value that represents the type of PLAN-ORDER. It serves as a discriminator that partitions PLAN-ORDER into subtypes.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

PlanOrderAssociation

A relationship of a PLAN-ORDER as a subject with another PLAN-ORDER as an object.

Wrapper Attribute	Description	JC3IEDM Physical Type
plan-order-association-subject-plan-order-id	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDERS."	NUMBER(20)
plan-order-association-object-plan-order-id	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDERS."	NUMBER(20)
plan-order-association-index	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER-ASSOCIATION for a subject PLAN-ORDER and an object PLAN-ORDER and to distinguish it from all other PLAN-ORDER-ASSOCIATIONS for those PLAN-ORDERS."	NUMBER(20)
plan-order-association-category-code	The specific value that represents the type of relationship between a subject PLAN-ORDER and an object PLAN-ORDER in a specific PLAN-ORDER-ASSOCIATION.	CHAR(6)
plan-order-association-datetime	The character string representing the point in time when a specific PLAN-ORDER-ASSOCIATION is established.	CHAR(18)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

PlanOrderComponent

A structural element of a specific PLAN-ORDER.

Wrapper Attribute	Description	JC3IEDM Physical Type
plan-order-id	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDERS."	NUMBER(20)
plan-order-component-index	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER-COMPONENT for a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDER-COMPONENTs for that PLAN-ORDER."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

PlanOrderComponentContent

The aggregation of substantive subject matter for a specific PLAN-ORDER-COMPONENT.

Wrapper Attribute	Description	JC3IEDM Physical Type
plan-order-id	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDERS."	NUMBER(20)
plan-order-component-index	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDERS."	NUMBER(20)
plan-order-component-content-index	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER-COMPONENT-CONTENT for a specific PLAN-ORDER-COMPONENT and to distinguish it from all other PLAN-ORDER-COMPONENT-CONTENTs for that PLAN-ORDER-COMPONENT."	NUMBER(20)
plan-order-component-content-datetime	The character string representing the point in time when PLAN-ORDER-COMPONENT-CONTENT is defined.	CHAR(18)
plan-order-component-content-sequence-ordinal	The sequence number in a specific PLAN-ORDER-COMPONENT-CONTENT that permits the proper ordering of the components of a PLAN-ORDER.	NUMBER(6)

component-header-content-id	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDERS."	NUMBER(20)
component-text-content-id	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDERS."	NUMBER(20)
plan-order-component-content-data-context-id	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDERS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

PlanOrderComponentContentReference

The identification of a specific REFERENCE that applies to the given PLAN-ORDER-COMPONENT-CONTENT.

Wrapper Attribute	Description	JC3IEDM Physical Type
plan-order-id	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDERS."	NUMBER(20)
plan-order-component-index	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDERS."	NUMBER(20)
plan-order-component-content-index	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDERS."	NUMBER(20)
plan-order-component-content-reference-index	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER-COMPONENT-CONTENT-REFERENCE for a specific PLAN-ORDER-COMPONENT-CONTENT and to distinguish it from all other PLAN-ORDER-COMPONENT-CONTENT-REFERENCES for that PLAN-ORDER-COMPONENT-CONTENT."	NUMBER(20)
plan-order-component-content-reference-category-code	The specific value that represents the reason a specific REFERENCE is associated to a specific PLAN-ORDER-COMPONENT-CONTENT.	CHAR(6)
plan-order-component-content-reference-datetime	The character string representing the point in time when a specific REFERENCE is associated with a specific PLAN-ORDER-COMPONENT-CONTENT.	CHAR(18)

reference-id	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDERS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

PlanOrderComponentStructure

A relationship of a PLAN-ORDER-COMPONENT as a subject and a PLAN-ORDER-COMPONENT as an object to allow multilayer relationships among elements of the same or different instances of a PLAN-ORDER.

Wrapper Attribute	Description	JC3IEDM Physical Type
plan-order-component-structure-subject-plan-order-id	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDERS."	NUMBER(20)
plan-order-component-structure-subject-plan-order-component-index	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDERS."	NUMBER(20)
plan-order-component-structure-object-plan-order-id	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDERS."	NUMBER(20)
plan-order-component-structure-object-plan-order-component-index	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDERS."	NUMBER(20)
plan-order-component-structure-index	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER-COMPONENT-STRUCTURE for a specific PLAN-ORDER-COMPONENT and to distinguish it from all other PLAN-ORDER-COMPONENT-STRUCTUREs for that PLAN-ORDER-COMPONENT."	NUMBER(20)
plan-order-component-structure-category-code	The specific value that represents the type of relationship between a subject PLAN-ORDER-COMPONENT and an object PLAN-ORDER-COMPONENT in a specific PLAN-ORDER-COMPONENT-STRUCTURE.	CHAR(6)
plan-order-component-structure-datetime	The character string representing the point in time when a PLAN-ORDER-COMPONENT-STRUCTURE is defined.	CHAR(18)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

PlanOrderDistribution

A record that an ORGANISATION is the intended recipient of a specific PLAN-ORDER.

Wrapper Attribute	Description	JC3IEDM Physical Type
plan-order-id	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDERS."	NUMBER(20)
plan-order-distribution-index	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER-DISTRIBUTION for a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDER-DISTRIBUTIONS for that PLAN-ORDER."	NUMBER(20)
plan-order-distribution-category-code	The specific value assigned to represent the type of PLAN-ORDER-DISTRIBUTION with respect to the reason for its dissemination.	CHAR(6)
plan-order-distribution-release-datetime	The character string representing the point in time for the intended release of a specific PLAN-ORDER to a specific ORGANISATION.	CHAR(18)
recipient-organisation-id	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDERS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

PlanOrderDistributionAcknowledgement

A record that the organisation identified in a specific PLAN-ORDER-DISTRIBUTION has acknowledged the receipt of a specific PLAN-ORDER.

Wrapper Attribute	Description	JC3IEDM Physical Type
plan-order-id	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDERS."	NUMBER(20)
plan-order-distribution-index	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDERS."	NUMBER(20)
plan-order-distribution-acknowledgement-index	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER-DISTRIBUTION-ACKNOWLEDGEMENT for a specific PLAN-ORDER-DISTRIBUTION and to distinguish it from all other PLAN-ORDER-DISTRIBUTION-ACKNOWLEDGEMENTs for that PLAN-ORDER-DISTRIBUTION."	NUMBER(20)
plan-order-distribution-acknowledgement-code	The specific value that represents the type of acknowledgement of the distribution for a specific PLAN-ORDER and a specific recipient.	CHAR(6)
plan-order-distribution-acknowledgement-datetime	The character string representing the point in time when acknowledgement of a distributed PLAN-ORDER by a recipient occurred.	CHAR(18)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

PlanOrderHeaderContent

Introductory subject matter that applies to the entirety of a specific PLAN-ORDER.

Wrapper Attribute	Description	JC3IEDM Physical Type
plan-order-id	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDERS."	NUMBER(20)
plan-order-header-content-index	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER-HEADER-CONTENT for a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDER-HEADER-CONTENTs for that PLAN-ORDER."	NUMBER(20)

plan-order-header-content-name-text	The character string assigned to represent a specific PLAN-ORDER.	VARCHAR(50)
plan-order-header-content-nickname-text	The character string assigned to represent an alternative name for a specific PLAN-ORDER.	VARCHAR(50)
plan-order-header-content-serial-number-text	The character string assigned to represent a sequential numerical identification of a specific PLAN-ORDER.	VARCHAR(15)
plan-order-header-content-sponsor-type-text	"The character string assigned to represent the type of force, such as combined, joint, army, navy, marine, air force, or other functional command, to which a specific PLAN-ORDER applies."	VARCHAR(60)
plan-order-header-content-time-zone-code	The specific value assigned to represent one of the 24 longitudinal divisions of the Earth's surface in which standard time is kept as it applies to the specific PLAN-ORDER.	CHAR(6)
plan-order-header-content-datetime	The character string representing the point in time when the PLAN-ORDER-HEADER-CONTENT is defined.	CHAR(18)
plan-order-header-content-message-reference-number-text	The character string assigned for use in acknowledging a specific PLAN-ORDER in the clear.	VARCHAR(15)
security-classification-id	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDERS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

PlanStatus

A record of the condition of a specific PLAN.

Wrapper Attribute	Description	JC3IEDM Physical Type
plan-id	"The unique value, or set of characters, assigned to represent a specific PLAN-ORDER and to distinguish it from all other PLAN-ORDERS."	NUMBER(20)

plan-status-index	"The unique value, or set of characters, assigned to represent a specific PLAN-STATUS for a specific PLAN and to distinguish it from all other PLAN-STATUSs for that PLAN."	NUMBER(20)
plan-status-development-status-code	The specific value assigned to represent the state of preparation for a specific PLAN.	CHAR(6)
plan-status-state-code	The specific value assigned to represent the condition for a specific PLAN.	CHAR(6)
plan-status-datetime	The character string representing the point in time for a specific PLAN-STATUS.	CHAR(18)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Point

A zero dimensional LOCATION.

Wrapper Attribute	Description	JC3IEDM Physical Type
point-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
point-category-code	The specific value that represents the class of POINT. It serves as a discriminator that partitions POINT into subtypes.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

PointReference

A RELATIVE-COORDINATE-SYSTEM that uses three specific POINTs to establish its frame of reference.

Wrapper Attribute	Description	JC3IEDM Physical Type
relative-coordinate-system-id	"The unique value, or set of characters, assigned to represent a specific RELATIVE-COORDINATE-SYSTEM and to distinguish it from all other RELATIVE-COORDINATE-SYSTEMs."	NUMBER(20)
point-reference-origin-point-id	"The unique value, or set of characters, assigned to represent a specific RELATIVE-COORDINATE-SYSTEM and to distinguish it from all other RELATIVE-COORDINATE-SYSTEMs."	NUMBER(20)
point-reference-x-vector-point-id	"The unique value, or set of characters, assigned to represent a specific RELATIVE-COORDINATE-SYSTEM and to distinguish it from all other RELATIVE-COORDINATE-SYSTEMs."	NUMBER(20)
point-reference-y-vector-point-id	"The unique value, or set of characters, assigned to represent a specific RELATIVE-COORDINATE-SYSTEM and to distinguish it from all other RELATIVE-COORDINATE-SYSTEMs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

PolyarcArea

A SURFACE that consists of a circular arc and a polygonal segment defined by a specific LINE whose beginning coincides with the initial point of the arc and whose end coincides with the last point of the arc.

Wrapper Attribute	Description	JC3IEDM Physical Type
polyarc-area-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
polyarc-area-begin-bearing-angle	The rotational measurement clockwise from true North to the left side of a horizontal conical section used in defining a specific POLYARC-AREA.	NUMBER(7,4)
polyarc-area-end-bearing-angle	The rotational measurement clockwise from true North to the right side of a horizontal conical section used in defining a specific POLYARC-AREA.	NUMBER(7,4)

polyarc-area-arc-radius-dimension	The one-dimensional linear distance representing the distance from the vertex to the ring sector used to define part of a specific POLYARC-AREA.	NUMBER(12,3)
polyarc-area-defining-line-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
polyarc-area-bearing-origin-point-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

PolygonArea

A SURFACE that has its boundaries defined by a specific LINE.

Wrapper Attribute	Description	JC3IEDM Physical Type
polygon-area-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
polygon-area-bounding-line-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Precipitation

A METEOROLOGIC-FEATURE that specifies the type of particulate matter in the Earth's atmosphere and the rate of its descent onto the Earth's surface.

Wrapper Attribute	Description	JC3IEDM Physical Type
precipitation-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
precipitation-category-code	The specific value that represents the prevailing class of a specific PRECIPITATION.	CHAR(6)
precipitation-rate	The numeric value that denotes the amount of PRECIPITATION deposited per unit time. The unit of measure is millimetres per hour. The specified value must be greater than or equal to 0 (zero).	NUMBER(4,1)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

PrivateSectorOrganisationType

"An ORGANISATION-TYPE that is a non-government organisation and is constituted for business, commerce, manufacturing, trade, relief or philanthropy."

Wrapper Attribute	Description	JC3IEDM Physical Type
private-sector-organisation-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPES."	NUMBER(20)
private-sector-organisation-type-category-code	The specific value that represents the class of PRIVATE-SECTOR-ORGANISATION-TYPE.	CHAR(6)
private-sector-organisation-type-main-activity-code	The specific value that represents the main activity of a PRIVATE-SECTOR-ORGANISATION-TYPE.	CHAR(6)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Quay

"A FACILITY that is a solidly constructed platform, usually parallel to the shoreline of navigable water, alongside which a vessel can be docked or berthed and, on which, the vessel can be accessed and cargo can be loaded or unloaded on one side of the vessel only."

Wrapper Attribute	Description	JC3IEDM Physical Type
quay-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
quay-container-handling-type-code	The specific value that represents the class of container handling equipment available at a specific QUAY.	CHAR(6)
quay-container-maximum-handling-length-dimension	The one-dimensional linear distance representing the maximum length of a container that can be handled at the QUAY.	NUMBER(12,3)
quay-container-maximum-handling-weight-quantity	The numeric value that represents the maximum container weight that can be handled at the QUAY. The unit of measure is kilogram.	NUMBER(9)
quay-crane-offloading-lift-quantity	The numeric value that represents the maximum weight that can be handled by a crane at the QUAY. The unit of measure is kilogram.	NUMBER(9)
quay-crane-offloading-type-code	The specific value that represents the class of crane offloading equipment available at a specific QUAY.	CHAR(6)
quay-day-limit-net-explosive-quantity	The numeric value that represents the maximum net explosive quantity that can be handled at the QUAY during the day. The unit of measure is kilogram.	NUMBER(6)
quay-draught-dimension	The one-dimensional linear distance representing the maximum draught of vessel that the specific QUAY can accommodate.	NUMBER(12,3)
quay-maximum-deadweight-tonnage-quantity	The numeric value that represents the maximum deadweight tonnage that can be accommodated for a vessel at the specific QUAY. The unit of measure is metric ton.	NUMBER(9)

quay-night-limit-net-explosive-quantity	The numeric value that represents the maximum net explosive quantity that can be handled at the QUAY during the night. The unit of measure is kilogram.	NUMBER(6)
quay-rail-capacity-count	The integer value representing the maximum number of goods/ freight cars that the QUAY can accommodate at the same time.	NUMBER(9)
quay-rail-served-indicator-code	The specific value that represents whether the QUAY has railway facilities.	CHAR(6)
quay-storage-code	The specific value that represents the class of storage facilities available at a specific QUAY.	CHAR(6)
quay-vessel-maximum-beam-dimension	The one-dimensional linear distance representing the maximum beam or width of vessel that the specific QUAY can accommodate.	NUMBER(12,3)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

RadioactiveEvent

A CBRN-EVENT involving radioactive materiel(s).

Wrapper Attribute	Description	JC3IEDM Physical Type
radioactive-event-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
radioactive-event-category-code	The specific value that represents the class of RADIOACTIVE-EVENT. It serves as a discriminator that partitions RADIOACTIVE-EVENT into subtypes.	CHAR(6)
radioactive-event-dose-quantity	The numeric value that represents the total radiation dose accumulated over the duration of the RADIOACTIVE-EVENT. The unit of measure is centiGray (cGy).	NUMBER(14,6)
radioactive-event-dose-rate	The numeric value that denotes the radiation dose rate. The unit of measure is centiGray per Hour (cGy/h). The specified value must be greater than or equal to 0 (zero).	NUMBER(16,7)

radioactive-event-dose-rate-trend-code	The specific value that represents the rate of change of the ionising radiation emitted by a radioactive materiel.	CHAR(6)
radioactive-event-volume-concentration-quantity	The numeric value that represents the level of radioactive contamination per unit volume in air or water. The unit of measure is Becquerels per cubic metre (BQM3).	NUMBER(14,6)
radioactive-event-surface-deposition-quantity	The numeric value that represents the level of radioactive contamination per unit area on a surface. The unit of measure is Becquerels per square metre (BQM2).	NUMBER(14,6)
radioactive-event-relative-decay-rate-code	The specific value that represents the rate of decay of fallout relative to the assumed normal value of 1.2 in the Kaufmann equation.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

RadioactiveMaterielType

"A CONSUMABLE-MATERIEL-TYPE that is a substance which spontaneously emits radiation, and which may kill, seriously injure, or incapacitate personnel through its physiological effects or causes the deterioration of materiel."

Wrapper Attribute	Description	JC3IEDM Physical Type
radioactive-materiel-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPES."	NUMBER(20)
radioactive-materiel-type-category-code	The specific value that represents the class of RADIOACTIVE-MATERIEL-TYPE.	CHAR(6)
radioactive-materiel-type-primary-radiation-code	The specific value that represents the most intense radiation emitted by a RADIOACTIVE-MATERIEL-TYPE.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

RadiologicalEvent

A RADIOACTIVE-EVENT involving radioactive materiel(s) but not involving nuclear materiel(s) and/or nuclear detonation.

Wrapper Attribute	Description	JC3IEDM Physical Type
radiological-event-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
radiological-event-release-category-code	The specific value that represents the type of discharge for a contaminant release in a radioactive release other than attack (ROTA) event.	CHAR(6)
radiological-event-isotope-concentration-ratio	The numeric quotient value that represents the proportion by weight of an isotope in a release. The value must be in the range from 0 to 1.	NUMBER(6,5)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

RailcarType

An EQUIPMENT-TYPE that is designed to operate on rail tracks.

Wrapper Attribute	Description	JC3IEDM Physical Type
railcar-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPEs."	NUMBER(20)
railcar-type-category-code	The specific value that represents the class of RAILCAR-TYPE.	CHAR(6)
railcar-type-subcategory-code	The specific value that represents the detailed class of RAILCAR-TYPE.	CHAR(6)
railcar-type-gauge-dimension	The one-dimensional linear distance representing the horizontal distance measured from side to side and perpendicular to the central axis of a specific railcar track.	NUMBER(12,3)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Railway

A FACILITY that is a track or set of tracks made of steel rails along which trains run.

Wrapper Attribute	Description	JC3IEDM Physical Type
railway-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
railway-track-gauge-code	The specific value that represents the distance between the internal sides of rails on a RAILWAY line.	CHAR(6)
railway-track-count	The integer value representing the number of tracks on a RAILWAY line.	NUMBER(4)
railway-train-density-count	"The integer value representing the maximum number of trains, which can be moved in each direction over a specified section of track in a 24 hour period."	NUMBER(4)
railway-block-distance-dimension	The one-dimensional linear distance representing the minimum length of the passing track intervals for single track lines or the safety margin related to the signalling system on double or multiple track lines.	NUMBER(12,3)
railway-sleeper-density-dimension	The one-dimensional linear distance representing the average horizontal distance measured from side to side and perpendicular to the central axis of the gap between two RAILWAY sleepers (ties).	NUMBER(12,3)
railway-gross-trailing-load-quantity	The numeric value that represents the maximum tonnage that can be moved under optimum conditions. The unit of measure is metric ton.	NUMBER(9)
railway-maximum-speed-rate	The numeric value that denotes the maximum speed that it is possible to move on a specific RAILWAY. The unit of measure is kilometres per hour. The specified value must be greater than or equal to 0 (zero).	NUMBER(4,1)
railway-traction-system-code	The specific value that represents the motive power (engine type) that is supported along a specific RAILWAY.	CHAR(6)

railway-signal-system-code	The specific value that represents the type of signal system used for the RAILWAY.	CHAR(6)
railway-signal-system-efficiency-code	The specific value that represents the percentage value used to compute the inevitable delays caused by the type of signalling in use on the RAILWAY line.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Reference

Identification of a record of information.

Wrapper Attribute	Description	JC3IEDM Physical Type
reference-id	The unique value assigned to represent a specific REFERENCE and to distinguish it from all other REFERENCES.	NUMBER(20)
reference-approval-datetime	The character string representing a point in time that designates the date when the artefact that is cited in a specific REFERENCE was approved.	CHAR(18)
reference-content-category-code	The specific value that represents the classification of the general content of the artefact cited in a specific REFERENCE.	CHAR(6)
reference-creation-datetime	The character string representing a point in time that designates the creation date for the artefact cited in a specific REFERENCE.	CHAR(18)
reference-description-text	The character string assigned to represent a description of the artefact cited in a specific REFERENCE.	VARCHAR(255)
reference-electronic-source-text	The character string assigned to represent the electronic source of the artefact cited in a specific REFERENCE.	VARCHAR(50)
reference-file-size-quantity	The numeric value that represents the size of an electronic version of the artefact cited in a specific REFERENCE. The unit of measure is kilobyte.	NUMBER(9)

reference-format-text	The character string assigned to represent the data format of the artefact cited in a specific REFERENCE.	VARCHAR(50)
reference-language-code	The specific value that identifies the language used in the artefact cited in a specific REFERENCE.	CHAR(6)
reference-lifecycle-code	The specific value that represents the lifecycle of the artefact cited in a specific REFERENCE.	CHAR(6)
reference-medium-type-code	The specific value that represents the type of medium of the artefact cited in a specific REFERENCE.	CHAR(6)
reference-originator-text	The character string assigned to represent the identity of the originator of the artefact cited in a specific REFERENCE.	VARCHAR(50)
reference-physical-size-text	The character string assigned to represent the size of a physical version of the artefact cited in a specific REFERENCE.	VARCHAR(50)
reference-primary-location-text	The character string assigned to represent the identity of the primary physical or electronic location of the artefact cited in a specific REFERENCE.	VARCHAR(50)
reference-publication-datetime	The character string representing a point in time that designates the date of publication for the artefact cited in a specific REFERENCE.	CHAR(18)
reference-releasability-text	The character string assigned to represent the releasability restrictions for the artefact cited in a specific REFERENCE.	VARCHAR(50)
reference-short-title-text	The character string assigned to represent an abbreviated title or name of the artefact cited in a specific REFERENCE.	VARCHAR(50)
reference-title-text	The character string assigned to represent the name of the artefact cited in a specific REFERENCE.	VARCHAR(50)
reference-transmittal-type-code	The specific value that represents the means by which the artefact cited in a specific REFERENCE is transmitted to the recipient.	CHAR(6)
reference-validity-period-begin-datetime	The character string representing a point in time that designates the beginning of the period of validity for the content in the artefact cited in a specific REFERENCE.	CHAR(18)
reference-validity-period-end-datetime	The character string representing a point in time that designates the end of the period of validity for the content in the artefact cited in a specific REFERENCE.	CHAR(18)

reference-verification-code	The specific value that represents the verification of the artefact cited in a specific REFERENCE.	CHAR(6)
reference-version-text	The character string assigned to represent the identification of the version of the artefact cited in a specific REFERENCE.	VARCHAR(50)
security-classification-id	"The unique value, or set of characters, assigned to represent a specific SECURITY-CLASSIFICATION and to distinguish it from all other SECURITY-CLASSIFICATIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ReferenceAssociation

A relationship of a REFERENCE as a subject with another REFERENCE as an object.

Wrapper Attribute	Description	JC3IEDM Physical Type
reference-association-subject-reference-id	The unique value assigned to represent a specific REFERENCE and to distinguish it from all other REFERENCES.	NUMBER(20)
reference-association-object-reference-id	The unique value assigned to represent a specific REFERENCE and to distinguish it from all other REFERENCES.	NUMBER(20)
reference-association-index	"The unique value, or set of characters, assigned to represent a specific REFERENCE-ASSOCIATION for a subject REFERENCE and an object REFERENCE and to distinguish it from all other REFERENCE-ASSOCIATIONS for those REFERENCES."	NUMBER(20)
reference-association-category-code	The specific value that represents the class of relationship between a subject REFERENCE and an object REFERENCE for a specific REFERENCE-ASSOCIATION.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

RelativeCoordinateSystem

"A rectangular frame of reference defined by an origin, x and y axes in the horizontal plane, and a z-axis. The vertical z-axis is normal to the xy-plane with positive direction determined from the right-hand rule when the x-axis is rotated toward the y-axis."

Wrapper Attribute	Description	JC3IEDM Physical Type
relative-coordinate-system-id	"The unique value, or set of characters, assigned to represent a specific RELATIVE-COORDINATE-SYSTEM and to distinguish it from all other RELATIVE-COORDINATE-SYSTEMs."	NUMBER(20)
relative-coordinate-system-reference-category-code	The specific value that represents the source of the reference for defining the origin and axial directions for a specific RELATIVE-COORDINATE-SYSTEM. It serves as a discriminator that partitions RELATIVE-COORDINATE-SYSTEM into subtypes.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

RelativePoint

A POINT whose position is specified with respect to a specific RELATIVE-COORDINATE-SYSTEM.

Wrapper Attribute	Description	JC3IEDM Physical Type
relative-point-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
relative-point-x-coordinate-dimension	The one-dimensional linear distance representing the displacement of the specific RELATIVE-POINT along the x-axis with respect to a specific RELATIVE-COORDINATE-SYSTEM.	NUMBER(12,3)
relative-point-y-coordinate-dimension	The one-dimensional linear distance representing the displacement of the specific RELATIVE-POINT along the y-axis with respect to a specific RELATIVE-COORDINATE-SYSTEM.	NUMBER(12,3)
relative-point-z-coordinate-dimension	The one-dimensional linear distance representing the displacement of the specific RELATIVE-POINT along the z-axis with respect to a specific RELATIVE-COORDINATE-SYSTEM.	NUMBER(12,3)
relative-point-x-precision-code	The specific value that represents the maximum resolution used for the expression of a value of an x-coordinate.	CHAR(6)

relative-point-y-precision-code	The specific value that represents the maximum resolution used for the expression of a value of a y-coordinate.	CHAR(6)
relative-point-z-precision-code	The specific value that represents the maximum resolution used for the expression of a value of a z-coordinate.	CHAR(6)
relative-coordinate-system-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ReportingData

"The specification of source, quality and timing that applies to reported data."

Wrapper Attribute	Description	JC3IEDM Physical Type
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
ent-cat-code	The specific value that represents the physical name of the referenced table.	CHAR(6)
reference-id	The unique value assigned to represent a specific REFERENCE and to distinguish it from all other REFERENCES.	NUMBER(20)
reporting-data-accuracy-code	"The specific value that represents, for intelligence purpose, the general appraisal of the subject matter in graded terms to indicate the extent or degree to which it has been judged to be free from mistake or error or to conform to truth or some recognised standard value."	CHAR(6)
reporting-data-category-code	"The specific value that represents, for usual operational purposes, the nature of a specific REPORTING-DATA."	CHAR(6)
reporting-data-counting-indicator-code	The specific value that denotes whether the data referred to by a specific REPORTING-DATA is based on a count of objects.	CHAR(6)

reporting-data-credibility-code	"The specific value that represents, for normal operational use, the degree of trustworthiness of the data referenced by a specific REPORTING-DATA."	CHAR(6)
reporting-data-id	"The unique value, or set of characters, assigned to represent a specific REPORTING-DATA and to distinguish it from all other REPORTING-DATAs."	NUMBER(20)
reporting-data-real-data-exercise-use-only-code	The specific value that determines whether a specific REPORTING-DATA refers to real data in an exercise scenario.	CHAR(6)
reporting-data-reliability-code	"The specific value that represents, for intelligence purpose, the general appraisal of the source in graded terms to indicate the extent to which it has been proven it can be counted on or trusted in to do as expected."	CHAR(6)
reporting-data-reporting-datetime	The character string representing a point in time that designates when the data referenced by the REPORTING-DATA is provided.	CHAR(18)
reporting-data-reporting-organisation-id	The unique value assigned to represent a specific REFERENCE and to distinguish it from all other REFERENCES.	NUMBER(20)
reporting-data-source-type-code	The specific value that identifies the source type from which intelligence information is obtained and which is referred to by a specific REPORTING-DATA.	CHAR(6)
reporting-data-timing-category-code	"The specific value that represents the absolute, uncertain or relative timing for a specific REPORTING-DATA. It serves as a discriminator that partitions REPORTING-DATA into subtypes."	CHAR(6)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ReportingDataAbsoluteTiming

A REPORTING-DATA that specifies effective datetime that is referenced to Universal Time.

Wrapper Attribute	Description	JC3IEDM Physical Type
reporting-data-absolute-timing-reporting-data-id	"The unique value, or set of characters, assigned to represent a specific REPORTING-DATA and to distinguish it from all other REPORTING-DATAs."	NUMBER(20)
reporting-data-absolute-timing-effective-start-datetime	The character string representing a point in time that designates the beginning of the period of effectiveness for the data referenced by a specific REPORTING-DATA-ABSOLUTE-TIMING.	CHAR(18)

reporting-data-absolute-timing-effective-end-datetime	The character string representing a point in time that designates the ending of the period of effectiveness for the data referenced by a specific REPORTING-DATA-ABSOLUTE-TIMING.	CHAR(18)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

ReportingDataRelativeTiming

A REPORTING-DATA that specifies effective timing that is referenced to a specific ACTION-TASK.

Wrapper Attribute	Description	JC3IEDM Physical Type
reporting-data-relative-timing-reporting-data-id	"The unique value, or set of characters, assigned to represent a specific REPORTING-DATA and to distinguish it from all other REPORTING-DATAs."	NUMBER(20)
reporting-data-relative-timing-offset-duration	The numeric value that represents a quantity of time in milliseconds from a given reference for a specific REPORTING-DATA-RELATIVE-TIMING.	CHAR(19)
reporting-data-relative-timing-reference-action-task-id	"The unique value, or set of characters, assigned to represent a specific REPORTING-DATA and to distinguish it from all other REPORTING-DATAs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Request

An ACTION-TASK that states a requirement.

Wrapper Attribute	Description	JC3IEDM Physical Type
request-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)

request-category-code	The specific value that represents the type classification of a specific REQUEST.	CHAR(6)
request-immediate-interest-indicator-code	The specific value that indicates whether the information sought in a request is of immediate interest.	CHAR(6)
request-latest-answer-datetime	The character string representing a point in time that designates the end of the period of usefulness of the information sought in a specific REQUEST.	CHAR(18)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

RequestAnswer

An indication of the nature of a response to a specific REQUEST for information.

Wrapper Attribute	Description	JC3IEDM Physical Type
request-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
request-answer-index	"The unique value, or set of characters, assigned to represent a specific REQUEST-ANSWER for a specific REQUEST and to distinguish it from all other REQUEST-ANSWERS for that REQUEST."	NUMBER(20)
request-answer-category-code	The specific value that represents the class of REQUEST-ANSWER.	CHAR(6)
reporting-data-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

RequestAnswerElement

A relationship between a specific REQUEST-ANSWER and a specific REPORTING-DATA that provides linkage to amplifying information for a REQUEST-ANSWER.

Wrapper Attribute	Description	JC3IEDM Physical Type
request-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
request-answer-index	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
comprising-reporting-data-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Road

A FACILITY that is a path or way with a specially prepared surface.

Wrapper Attribute	Description	JC3IEDM Physical Type
road-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
road-category-code	The specific value that represents the type of ROAD.	CHAR(6)
road-shoulder-width-code	The specific value that represents the average horizontal distance measured from side to side and perpendicular to the central axis of a specific hard shoulder (lane/area beside a highway for broken-down or not running vehicles).	CHAR(6)
road-traffic-density-count	"The integer value representing the average number of vehicles that occupy one kilometre of road space, expressed in vehicles per kilometre."	NUMBER(4)

road-weather-condition-category-code	The specific value that describes the passability of a ROAD considering the impact of weather on that ROAD.	CHAR(6)
road-quality-code	The specific value that represents a subjective rating of the quality of the ROAD.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Route

A CONTROL-FEATURE that is the prescribed course to be travelled from a specific point of origin to a specific destination.

Wrapper Attribute	Description	JC3IEDM Physical Type
route-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
route-direction-usage-code	The specific value that represents the assigned direction for the traffic on the route.	CHAR(6)
route-mobility-code	The specific value that indicates the suitability of a specific ROUTE for movement.	CHAR(6)
route-mode-of-transportation-code	The specific value that indicates the mode of transportation of a specific ROUTE.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

RouteSegment

"A portion of a route usually without an intermediate stop, as defined by two consecutive significant points."

Wrapper Attribute	Description	JC3IEDM Physical Type
route-segment-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
route-segment-category-code	The specific value that represents the class of ROUTE-SEGMENT. It serves as a discriminator that partitions ROUTE-SEGMENT into subtypes.	CHAR(6)
route-segment-mobility-code	The specific value that indicates the suitability of a specific ROUTE-SEGMENT for movement.	CHAR(6)
route-segment-mode-of-transportation-code	The specific value that indicates the mode of transportation of a specific ROUTE-SEGMENT.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

RouteType

A CONTROL-FEATURE-TYPE that is the prescribed course to be travelled from a point of origin to a destination.

Wrapper Attribute	Description	JC3IEDM Physical Type
route-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPEs."	NUMBER(20)
route-type-category-code	The specific value that represents the class of ROUTE-TYPE.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

RuleOfEngagement

A specification of mandatory guidance for the way a given activity is to be executed.

Wrapper Attribute	Description	JC3IEDM Physical Type
rule-of-engagement-id	"The unique value, or set of characters, assigned to represent a specific RULE-OF-ENGAGEMENT and to distinguish it from all other RULE-OF-ENGAGEMENTs."	NUMBER(20)
rule-of-engagement-name-text	The character string assigned to represent the name of a specific RULE-OF-ENGAGEMENT.	VARCHAR(50)
rule-of-engagement-description-text	The character string assigned to describe a specific RULE-OF-ENGAGEMENT.	VARCHAR(255)
owning-organisation-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Runway

A FACILITY that is a specifically prepared surface along which aircraft take off and land.

Wrapper Attribute	Description	JC3IEDM Physical Type
runway-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
runway-lighting-presence-indicator-code	The specific value that indicates whether a specific RUNWAY has runway lighting.	CHAR(6)
runway-weight-bearing-capacity-quantity	The numeric value that denotes the maximum pressure that a specific RUNWAY is capable of carrying. The unit of measure is kilograms per square centimetre.	NUMBER(8,4)

runway-pavement-classification-number-count	"The integer value representing the pavement Classification Number (PCN), which is part of the standard ICAO (International Civil Aviation Organization) method of reporting pavement strength for pavements with bearing strength greater than 5,700 kilograms (12,500 pounds)."	NUMBER(9)
runway-pavement-type-code	"The specific value that represents the type of pavement classification, which is part of the standard ICAO (International Civil Aviation Organization) method of reporting pavement strength for pavements with bearing strength greater than 5,700 kilograms (12,500 pounds)."	CHAR(6)
runway-pavement-subgrade-category-code	"The specific value that represents the pavement subgrade classification, which is part of the standard ICAO (International Civil Aviation Organization) method of reporting pavement strength for pavements with bearing strength greater than 5,700 kilograms (12,500 pounds)."	CHAR(6)
runway-pavement-maximum-tyre-pressure-code	"The specific value that represents the pavement maximum tyre pressure classification, which is part of the standard ICAO (International Civil Aviation Organization) method of reporting pavement strength for pavements with bearing strength greater than 5,700 kilograms (12,500 pounds)."	CHAR(6)
runway-pavement-evaluation-method-code	"The specific value that represents the pavement evaluation method classification, which is part of the standard ICAO (International Civil Aviation Organization) method of reporting pavement strength for pavements with bearing strength greater than 5,700 kilograms (12,500 pounds)."	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

RunwayApproachDirectionAssociation

A relationship of a subject RUNWAY with an object APPROACH-DIRECTION.

Wrapper Attribute	Description	JC3IEDM Physical Type
runway-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
approach-direction-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)

runway-approach-direction-association-slope-ratio	The numeric quotient value that represents the incline of the runway seen from the direction of the APPROACH-DIRECTION as proportion of vertical change with respect to the length of the runway. The value must be in the range from -.09 to +.09. Note: A negative value indicates a downward slope.	NUMBER(6,5)
runway-approach-direction-association-landing-distance-dimension	The one-dimensional linear distance representing the length of the runway that is declared available and suitable for the ground run of an aircraft landing. The unit of measurement is feet.	NUMBER(12,3)
runway-approach-direction-association-takeoff-distance-dimension	"The one-dimensional linear distance representing the length of the available takeoff run plus the length of the overrun, if available, for an aircraft to takeoff. The unit of measurement is feet."	NUMBER(12,3)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

SecurityClassification

The security classification applicable to an information resource within the domain of classified security information.

Wrapper Attribute	Description	JC3IEDM Physical Type
security-classification-id	"The unique value, or set of characters, assigned to represent a specific SECURITY-CLASSIFICATION and to distinguish it from all other SECURITY-CLASSIFICATIONS."	NUMBER(20)
security-classification-level-code	The specific value that represents the security classification level for the information resource.	CHAR(6)
security-classification-policy-text	The character string assigned to represent the organisation that defines the rules relating to the security handling for the information resource.	VARCHAR(100)
security-classification-caveat-text	"The character string assigned to represent, for the information resource, an indication of an additional specific sensitivity, a dissemination control, or an informal marking."	VARCHAR(100)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Slipway

A FACILITY that provides a sloping surface or inclined structure leading down to the water.

Wrapper Attribute	Description	JC3IEDM Physical Type
slipway-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
slipway-gradient-angle	"The rotational measurement of a gradient, measured between the top of the slipway to the surface of the water, for a specific SLIPWAY."	NUMBER(7,4)
slipway-location-text	The character string assigned to represent a statement of the details that relate to the specific SLIPWAY.	VARCHAR(255)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

SolidSurfaceStatus

A GEOGRAPHIC-FEATURE-STATUS that is a record of condition of a specific solid surface.

Wrapper Attribute	Description	JC3IEDM Physical Type
solid-surface-status-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-status-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
solid-surface-status-code	The specific value that represents the status of a specific solid surface.	CHAR(6)
solid-surface-status-demolition-status-code	The specific value that represents the status of an object destined for demolition.	CHAR(6)
solid-surface-status-surface-condition-code	The specific value that represents the physical status of a solid surface area.	CHAR(6)

solid-surface-status-surface-firmness-code	"The specific value that represents the firmness of a surface area, in terms of its ability to support land vehicles or helicopters."	CHAR(6)
solid-surface-status-vegetation-category-code	The specific value that represents the general vegetation class of a specific SOLID-SURFACE-STATUS.	CHAR(6)
solid-surface-status-vegetation-subcategory-code	The specific value that represents the detailed vegetation class of a specific SOLID-SURFACE-STATUS.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

SphereVolume

A GEOMETRIC-VOLUME that has its horizontal boundaries defined by the spherical surface determined by the radius and the specified POINT.

Wrapper Attribute	Description	JC3IEDM Physical Type
sphere-volume-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
sphere-volume-radius-dimension	The one-dimensional linear distance representing the radius from the centre that defines the surface for a specific SPHERE-VOLUME.	NUMBER(12,3)
sphere-volume-centre-point-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

StorageCapability

"A CAPABILITY, required for planning, of those FACILITYs and MATERIELs or EQUIPMENT-TYPEs and FACILITY-TYPEs that are deemed as having the ability to hold a specific OBJECT-TYPE."

Wrapper Attribute	Description	JC3IEDM Physical Type
storage-capability-id	"The unique value, or set of characters, assigned to represent a specific CAPABILITY and to distinguish it from all other CAPABILITYs."	NUMBER(20)
storage-capability-cargo-category-code	The specific value that represents the class of cargo subject to the STORAGE-CAPABILITY.	CHAR(6)
storage-capability-descriptor-code	The specific value that represents the STORAGE-CAPABILITY that is being quantified.	CHAR(6)
storage-capability-condition-code	The specific value that represents the type of storage condition.	CHAR(6)
object-type-id	"The unique value, or set of characters, assigned to represent a specific CAPABILITY and to distinguish it from all other CAPABILITYs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

SubsurfaceVesselType

A vessel principally designed to operate under the water surface.

Wrapper Attribute	Description	JC3IEDM Physical Type
subsurface-vessel-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPEs."	NUMBER(20)
subsurface-vessel-type-category-code	The specific value that represents the class of subsurface vessel.	CHAR(6)

subsurface-vessel-type-dived-displacement-quantity	The numeric value that represents the volume of water that is moved by the subsurface vessel when it is entirely below the surface. The unit of measure is ton.	NUMBER(9)
subsurface-vessel-type-speed-cavitation-quantity	The numeric value that represents the speed at which the subsurface vessel will form bubbles or a vacuum in the water. The unit of measure is knots.	NUMBER(3)
subsurface-vessel-type-torpedo-loading-gear-indicator-code	The specific value that indicates whether a subsurface vessel has torpedo loading rails and lifting bands.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

SupportCapability

"A CAPABILITY, required for planning, of those FACILITYs, MATERIELs and ORGANISATIONs or FACILITY-TYPEs, EQUIPMENT-TYPEs and ORGANISATION-TYPEs that are deemed as having the ability to provide supplies or services."

Wrapper Attribute	Description	JC3IEDM Physical Type
support-capability-id	"The unique value, or set of characters, assigned to represent a specific CAPABILITY and to distinguish it from all other CAPABILITYs."	NUMBER(20)
support-capability-category-code	The specific value that represents the class of SUPPORT-CAPABILITY.	CHAR(6)
support-capability-descriptor-code	The specific value that represents the SUPPORT-CAPABILITY that is being quantified.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Surface

A two-dimensional LOCATION.

Wrapper Attribute	Description	JC3IEDM Physical Type
surface-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
surface-category-code	The specific value that represents the class of SURFACE. It serves as a discriminator that partitions SURFACE into subtypes.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

SurfaceVesselType

A vessel principally designed to operate on the water surface.

Wrapper Attribute	Description	JC3IEDM Physical Type
surface-vessel-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPEs."	NUMBER(20)
surface-vessel-type-category-code	The specific value that represents the class of surface vessel.	CHAR(6)
surface-vessel-type-displacement-quantity	The numeric value that represents the maximum volume of water moved by the vessel when it is fully loaded. The unit of measure is cubic metre.	NUMBER(9)
surface-vessel-type-maximum-deck-load-quantity	The numeric value that represents the Ship's maximum allowable deck load. The unit of measure is kilogram.	NUMBER(9)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

SurfaceVolume

A GEOMETRIC-VOLUME that has its horizontal boundaries defined by a specific SURFACE.

Wrapper Attribute	Description	JC3IEDM Physical Type
surface-volume-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
surface-volume-defining-surface-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

SurveillanceCapability

"A CAPABILITY, required for planning, of those FACILITYs, MATERIELs, ORGANISATIONs and PERSONs or FACILITY-TYPEs, EQUIPMENT-TYPEs, ORGANISATION-TYPEs and PERSON-TYPEs that are deemed as having the nominal ability to observe aerospace, surface or subsurface areas, places, persons, or things, by visual, aural, electronic, photographic or other means."

Wrapper Attribute	Description	JC3IEDM Physical Type
surveillance-capability-id	"The unique value, or set of characters, assigned to represent a specific CAPABILITY and to distinguish it from all other CAPABILITYs."	NUMBER(20)
surveillance-capability-category-code	The specific value that represents the class of SURVEILLANCE-CAPABILITY.	CHAR(6)
surveillance-capability-descriptor-code	The specific value that represents the SURVEILLANCE-CAPABILITY that is being quantified.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Target

"An ACTION-OBJECTIVE-ITEM that is subject to capture, destruction or intelligence operations."

Wrapper Attribute	Description	JC3IEDM Physical Type
action-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
action-objective-index	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
target-engagement-authority-code	The specific value that represents the type of employment authorised for a specific TARGET.	CHAR(6)
target-identifier-text	The character string assigned to represent the common additional reference assigned to the target by an organisation.	VARCHAR(15)
target-persistence-duration	The numeric value that represents a quantity of time in milliseconds that a specific TARGET is expected to remain available as a target.	CHAR(19)
target-description-text	The character string assigned to represent the common additional reference assigned to the TARGET.	VARCHAR(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

TargetPersonnelProtection

An assessment of the general protective posture of personnel with respect to first and second volleys for the specific TARGET.

Wrapper Attribute	Description	JC3IEDM Physical Type
action-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)

action-objective-index	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
target-personnel-protection-category-code	The specific value that denotes the protective posture of personnel for the specific TARGET.	CHAR(6)
reporting-data-id	"The unique value, or set of characters, assigned to represent a specific ACTION and to distinguish it from all other ACTIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

TaskFormationType

"A MILITARY-ORGANISATION-TYPE that is constituted on a temporary or semi-permanent basis for the purpose of carrying out a specific operation, mission or task."

Wrapper Attribute	Description	JC3IEDM Physical Type
task-formation-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPES."	NUMBER(20)
task-formation-type-category-code	The specific value that represents the class of TASK-FORMATION-TYPE.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

TrackArea

A SURFACE that is a rectangular section with its length defined by the two specific POINTs and its width by the sum of the widths to the left and right of the connecting line between the two points.

Wrapper Attribute	Description	JC3IEDM Physical Type
track-area-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
track-area-left-width-dimension	The one-dimensional linear distance representing the horizontal distance to the left measured orthogonally to the reference axis for a specific TRACK-AREA.	NUMBER(12,3)
track-area-right-width-dimension	The one-dimensional linear distance representing the horizontal distance to the right measured orthogonally to the reference axis for a specific TRACK-AREA.	NUMBER(12,3)
track-area-begin-point-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
track-area-end-point-id	"The unique value, or set of characters, assigned to represent a specific LOCATION and to distinguish it from all other LOCATIONS."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

TransmissionCapability

"A CAPABILITY, required for planning, of those MATERIELs or MATERIEL-TYPEs that are deemed as having the ability to generate, receive or affect signals in the electromagnetic spectrum."

Wrapper Attribute	Description	JC3IEDM Physical Type
transmission-capability-id	"The unique value, or set of characters, assigned to represent a specific CAPABILITY and to distinguish it from all other CAPABILITYs."	NUMBER(20)
transmission-capability-category-code	The specific value that represents the class of TRANSMISSION-CAPABILITY.	CHAR(6)

transmission-capability-descriptor-code	The specific value that represents the TRANSMISSION-CAPABILITY that is being quantified.	CHAR(6)
electronic-equipment-type-id	"The unique value, or set of characters, assigned to represent a specific CAPABILITY and to distinguish it from all other CAPABILITYs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Unit

A military ORGANISATION whose structure is prescribed by competent authority.

Wrapper Attribute	Description	JC3IEDM Physical Type
unit-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
unit-formal-abbreviated-name-text	The character string specifying the common formal abbreviation used to designate a specific UNIT.	VARCHAR(100)
unit-identification-text	The character string assigned to represent a unit's identification.	VARCHAR(15)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

UnitType

A MILITARY-ORGANISATION-TYPE whose structure is prescribed by competent authority.

Wrapper Attribute	Description	JC3IEDM Physical Type
unit-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPEs."	NUMBER(20)
unit-type-category-code	The specific value that represents the class of UNIT-TYPE.	CHAR(6)
unit-type-arm-category-code	The specific value that represents the designation of a military branch for a particular UNIT-TYPE.	CHAR(6)
unit-type-arm-specialisation-code	The specific value that qualifies the functional specialisation of a particular UNIT-TYPE.	CHAR(6)
unit-type-supplementary-specialisation-code	The specific value that supplements the designation of a particular UNIT-TYPE.	CHAR(6)
unit-type-general-mobility-code	"The specific value that represents the general mobility of a unit, seen as a whole."	CHAR(6)
unit-type-qualifier-code	The specific value that conveys additional information on the specified UNIT-TYPE.	CHAR(6)
unit-type-size-code	The specific value that represents the relative size of the commonly accepted configuration of military formations.	CHAR(6)
unit-type-principal-equipment-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPEs."	NUMBER(20)
unit-type-supported-military-organisation-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPEs."	NUMBER(20)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

UxoStatus

"A MATERIEL-STATUS that is a record of the condition of an explosive ordnance that has been primed, fused, armed, or otherwise prepared for action, and which has been fired, dropped, launched, placed in such a manner, as to constitute a hazard to operation, and remains unexploded either by malfunction or for any other cause."

Wrapper Attribute	Description	JC3IEDM Physical Type
uxo-status-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
object-item-status-index	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
uxo-status-exposure-code	The specific value that represents the visual status of a specific Unexploded Explosive Ordnance.	CHAR(6)
uxo-status-qualifier-code	The specific value that represents the qualification status of a specific Unexploded Explosive Ordnance.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

VehicleType

"An EQUIPMENT-TYPE that is designed to operate on land routes (other than rail) with a primary role of transporting personnel, equipment or supplies."

Wrapper Attribute	Description	JC3IEDM Physical Type
vehicle-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPEs."	NUMBER(20)
vehicle-type-category-code	The specific value that represents the class of VEHICLE-TYPE.	CHAR(6)

creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

VerticalDistance

A specification of the altitude or height of a point or a level as measured with respect to a specified reference datum in the direction normal to the plane that is tangent to the WGS84 ellipsoid of revolution.

Wrapper Attribute	Description	JC3IEDM Physical Type
vertical-distance-id	"The unique value, or set of characters, assigned to represent a specific VERTICAL-DISTANCE and to distinguish it from all other VERTICAL-DISTANCES."	NUMBER(20)
vertical-distance-reference-code	The specific value that represents the reference system for a specific VERTICAL-DISTANCE.	CHAR(6)
vertical-distance-dimension	The one-dimensional linear distance representing the distance with respect to the specified vertical datum.	NUMBER(12,3)
vertical-distance-precision-code	The specific value that denotes the precision of specifying a VERTICAL-DISTANCE.	CHAR(6)
vertical-distance-datum-text	The character string assigned to represent a specific vertical reference datum.	VARCHAR(50)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

VesselType

An EQUIPMENT-TYPE that is designed to operate on or under the water surface.

Wrapper Attribute	Description	JC3IEDM Physical Type
vessel-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPES."	NUMBER(20)
vessel-type-category-code	The specific value that represents the class of VESSEL-TYPE. It serves as a discriminator that partitions VESSEL-TYPE into subtypes.	CHAR(6)
vessel-type-magnetic-degaussing-code-number-quantity	The numeric value that represents the peak vertical component of the magnetic field under a ship on the worst heading and at certain depth. The unit of measure is microtesla.	NUMBER(12)
vessel-type-prismatic-coefficient-ratio	The numeric quotient value that represents a ratio of the volume displaced by the hull in relation to the volume of a prism or cylinder of cross section equal to the greatest cross-section of the submerged part of the hull and of length equal to the ships length between perpendiculars. The value must be in the range from 0 to 1.	NUMBER(6,5)
vessel-type-dead-weight-quantity	The numeric value that represents the carrying capacity of a ship. Dead weight is the difference between the Full displacement (Gross weight) and the Light displacement (Net weight). The unit of measure is metric ton.	NUMBER(6)
vessel-type-draught-dimension	"The numeric value of the distance from the Deep Water Line (DWL) to the lowest permanent projection on the hull of a vessel type including sonar domes, propellers, rudders, or other projections."	NUMBER(12,3)
vessel-type-gross-registered-tonnage-quantity	The numeric value that represents a ship's internal cubic capacity or freight-carrying capacity. The unit of measure is Gross Registered Tonnage (GRT). A unit of Gross Registered Tonnage is equal to 2.83 cubic metres.	NUMBER(9)
vessel-type-height-above-the-waterline-dimension	The one-dimensional linear distance representing the distance from the waterline to the topmost point of an unloaded vessel.	NUMBER(12,3)
vessel-type-propeller-count	The integer value representing the number of propellers on the ship.	NUMBER(2)
vessel-type-propulsion-type-code	The specific value that represents the type of power used to move the vessel.	CHAR(6)
vessel-type-operational-displacement-quantity	The numeric value that represents the weight or volume of water moved by the vessel on the surface of the water. The unit of measure is metric ton.	NUMBER(9)

vessel-type-maximum-speed-rate	The numeric value of the maximum speed that a vessel type can maintain for one hour or less with a clean hull immediately out of dry docking or refit. The speed is measured in knots. The specified value must be greater than or equal to 0 (zero).	NUMBER(8,4)
vessel-type-acoustic-merit-index-quantity	The numeric value that indicates the total acoustic level.	NUMBER(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Visibility

A METEOROLOGIC-FEATURE that specifies the distance at which an object illuminated by light in the visual spectrum can be detected.

Wrapper Attribute	Description	JC3IEDM Physical Type
visibility-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMs."	NUMBER(20)
visibility-category-code	The specific value that represents the class of obscurant that governs a particular VISIBILITY.	CHAR(6)
visibility-direction-code	The specific value that represents the direction for which a specific VISIBILITY is valid.	CHAR(6)
visibility-range-dimension	The one-dimensional linear distance representing the distance which can be surveyed using visual observation for a specific VISIBILITY.	NUMBER(12,3)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

WeaponType

An EQUIPMENT-TYPE of any kind used in warfare or combat to attack and overcome an enemy.

Wrapper Attribute	Description	JC3IEDM Physical Type
weapon-type-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-TYPE and to distinguish it from all other OBJECT-TYPES."	NUMBER(20)
weapon-type-category-code	The specific value that represents the class of WEAPON-TYPE.	CHAR(6)
weapon-type-subcategory-code	The specific value that represents the detailed class of WEAPON-TYPE.	CHAR(6)
weapon-type-calibre-text	The character string assigned to represent a specific calibre of a WEAPON-TYPE.	VARCHAR(15)
weapon-type-fire-guidance-indicator-code	The specific value that indicates whether a specific WEAPON-TYPE provides fire guidance.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Wind

A METEOROLOGIC-FEATURE that specifies the velocity and directional characteristics of atmospheric movement.

Wrapper Attribute	Description	JC3IEDM Physical Type
wind-id	"The unique value, or set of characters, assigned to represent a specific OBJECT-ITEM and to distinguish it from all other OBJECT-ITEMS."	NUMBER(20)
wind-category-code	The specific value that represents the class of WIND.	CHAR(6)
wind-air-stability-category-code	The specific value used to indicate the class of air stability.	CHAR(6)

wind-altitude-layer-code	The specific value used to indicate the class of the altitude for a specific set of reported wind data.	CHAR(6)
wind-direction-angle	The rotational measurement clockwise between the line of true North and the direction from which a specific WIND originates.	NUMBER(7,4)
wind-effective-downwind-direction-angle	The rotational measurement of the mean downwind direction at ground level in the hazard area towards which the cloud travels.	NUMBER(7,4)
wind-speed-rate	The numeric value that denotes the distance per unit time of a specific WIND. The unit of measure is kilometres per hour. The specified value must be greater than or equal to 0 (zero).	NUMBER(8,4)
wind-nuclear-yield-qualifier-code	The specific value used to identify predicted wind values associated with nuclear fallout prediction for a specific Nuclear yield group.	CHAR(6)
creator-id	A value assigned to the row to identify the organisation which created that row. This is referenced by an application level business rule to an OBJ_ITEM entry with a cat_code = OR and to a corresponding ORG subtype entry.	NUMBER(20)
update-seqnr	"An absolute sequence number, assigned to represent the validity (in terms of seniority) of a certain data item."	NUMBER(15)

Annex C

Transactionals and OCL

(normative)

C.1 Action

C.1.1 Action_Context

The Action_Context Transactional Artifact captures information that associates an individual action with a defined context. Frequently the context will specify the conditions that must precede the action or those that should follow as a result of it.

oclConstructionSequence

Context Action_Context

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ActionContext.act_id, targetAttr = self.Action.act_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ActionContext, target = self.Action, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ActionContext.context_id, targetAttr = self.Context_Specification.context_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ActionContext, target = self.Context_Specification, multiplicity = 1, rdSeq = step2ReadSeq}

let constructionSequence = Sequence{self.ActionContext, step1, step2}
```

self.action-id = self.Action.action-id

Context ActionContext, inv ActionContext_Action:

self.context-id = self.Context_Specification.Context.context-id

Context ActionContext, inv ActionContext_Context_Specification:

Enclosing Transactional: Action_Context

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Action («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Context_Specification («Transactional»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ActionContext («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True

C.1.2 Action_Context_Status

The Action_Context_Status Transactional Artifact captures information regarding the status of the association between an individual action and a defined context as perceived by the establishing organization. The status is used to indicate the beginning and termination times of the association.

self.action-id = self.Action_Context.ActionContext.action-id and self.context-id = self.Action_Context.ActionContext.context-id and self.action-context-index = self.Action_Context.ActionContext.action-context-index

Context ActionContextStatus, inv ActionContextStatus_Action_Context:

self.action-context-status-establishing-organisation-id = self.Organisation.organisation-id

Context ActionContextStatus, inv ActionContextStatus_Organisation:

oclConstructionSequence

Context Action_Context_Status

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ActionContextStatus.estblng_org_id, targetAttr = self.Organisation.org_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ActionContextStatus, target = self.Organisation, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ActionContextStatus.act_id, targetAttr = self.Action_Context.act_id}
let step2ReadPlan2 = Tuple{sourceAttr = self.ActionContextStatus.contxt_id, targetAttr = self.Action_Context.contxt_id}
let step2ReadPlan3 = Tuple{sourceAttr = self.ActionContextStatus.act_contxt_ix, targetAttr = self.Action_Context.act_contxt_ix}
let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2, step2ReadPlan3}
let step2 = Tuple{source = self.ActionContextStatus, target = self.Action_Context, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let constructionSequence = Sequence{self.ActionContextStatus, step1, step2}
```


Enclosing Transactional: Action_Context_Status

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Action_Context («Transactional»)	Navigation Constraints: Tagged Values:
Name: WatchPoint Identifier Type: Aggregation	ActionContextStatus («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True isWatchPoint = True
Name: Type: Aggregation	Organisation («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Organisation_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.1.3 Action_Effect

The Action_Effect Transactional Artifact captures information that specifies the perceived effects of an individual action (planned or realized) against a specified battle-space object or its class (i.e., Object_Items and Object_Types). The domain values include terms such as: captured, destroyed, neutralized, etc. The transactional encloses the Action_Effect_Item and Action_Effect_Type Transactional Artifacts that further refine the effects of the action in terms of objects and types against which the action had an effect (not necessarily the objectives of the action).

```
self.action-id = self.Action_Effect_Type.ActionEffectType.action-id and self.action-effect-index = self.Action_Effect_Type.ActionEffectType.action-effect-index  
Context ActionEffect, inv ActionEffect_Action_Effect_Type:
```

oclConstructionSequence

Context Action_Effect

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ActionEffect.act_id, targetAttr = self.Action_Effect_Item.act_id}  
let step1ReadPlan2 = Tuple{sourceAttr = self.ActionEffect.act_effect_ix, targetAttr = self.Action_Effect_Item.act_effect_ix}  
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2}  
let step1 = Tuple{source = self.ActionEffect, target = self.Action_Effect_Item, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ActionEffect.act_id, targetAttr = self.Action_Effect_Type.act_id}  
let step2ReadPlan2 = Tuple{sourceAttr = self.ActionEffect.act_effect_ix, targetAttr = self.Action_Effect_Type.act_effect_ix}
```

```

let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2}
let step2 = Tuple{source = self.ActionEffect, target = self.Action_Effect_Type, multiplicity = 1, rdSeq = step2ReadSeq}

let constructionSequence = Sequence{self.ActionEffect, step1, step2}

```

self.action-id = self.Action_Effect_Item.ActionEffectItem.action-id and self.action-effect-index = self.Action_Effect_Item.ActionEffectItem.action-effect-index
Context ActionEffect, inv ActionEffect_Action_Effect_Item:

Enclosing Transactional: Action_Effect

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Action_Effect_Type («Transactional»)	Navigation Constraints: ActionEffect_Discriminator_Action_Effect_Type}; inv: self.ActionEffect.action-effect-category-code='AETYPE' Tagged Values:
Name: Type: Aggregation	Action_Effect_Item («Transactional»)	Navigation Constraints: ActionEffect_Discriminator_Action_Effect_Item}; inv: self.ActionEffect.action-effect-category-code='AEITEM' Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ActionEffect («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True

C.1.4 Action_Effect_Item

The Action_Effect Transactional Artifact captures information that specifies the perceived effects of an individual action (planned or realized) against a specified battle-space object or its class (i.e., Object_Items and Object_Types). The domain values include terms such as: captured, destroyed, neutralized, etc. The effects of the action may relate to objects that were not necessarily the objectives of the action.

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id
Context ActionEffect, inv ActionEffect_Absolute_Reporting_Data:

self.object-item-id = self.ObjectItem.object-item-id
 Context ActionEffectItem, inv ActionEffectItem_ObjectItem:

self.action-id = self.ActionEffect.action-id and self.action-effect-index = self.ActionEffect.action-effect-index
 Context ActionEffectItem, inv ActionEffectItem_ActionEffect:

self.action-id = self.Action.action-id
 Context ActionEffect, inv ActionEffect_Action:

oclConstructionSequence
 Context Action_Effect_Item

```

let step1ReadPlan1 = Tuple{sourceAttr = self.ActionEffectItem.obj_item_id, targetAttr = self.ObjectItem.obj_item_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ActionEffectItem, target = self.ObjectItem, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ActionEffectItem.act_id, targetAttr = self.ActionEffect.act_id}
let step2ReadPlan2 = Tuple{sourceAttr = self.ActionEffectItem.act_effect_ix, targetAttr = self.ActionEffect.act_effect_ix}
let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2}
let step2 = Tuple{source = self.ActionEffectItem, target = self.ActionEffect, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ActionEffect.rptd_id, targetAttr = self.Absolute_Reporting_Data.rptd_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ActionEffect, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.ActionEffect.act_id, targetAttr = self.Action.act_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.ActionEffect, target = self.Action, multiplicity = 1, rdSeq = step4ReadSeq}

let constructionSequence = Sequence{self.ActionEffectItem, step1, step2, step3, step4}
  
```

Enclosing Transactional: Action_Effect_Item

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	ActionEffect («Wrapper»)	Navigation Constraints: ActionEffectItem_Enforced_ActionEffect: inv: self.ActionEffect.action-effect-category-code='AEITEM' Tagged Values:

Name: Type: Aggregation	Action («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ActionEffectType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	ActionEffectItem («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:

C.1.5 Action_Effect_Type

The Action_Effect_Type Transactional Artifact captures information regarding the action effects of a specific action in accomplishing its aims in terms of a specific type of battle-space object.

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id
Context ActionEffect, inv ActionEffect_Absolute_Reporting_Data:

self.object-type-id = self.ObjectType.object-type-id
Context ActionEffectType, inv ActionEffectType_ObjectType:

self.action-id = self.ActionEffect.action-id and self.action-effect-index = self.ActionEffect.action-effect-index
Context ActionEffectType, inv ActionEffectType_ActionEffect:

self.action-id = self.Action.action-id
Context ActionEffect, inv ActionEffect_Action:

oclConstructionSequence
Context Action_Effect_Type

let step1ReadPlan1 = Tuple{sourceAttr = self.ActionEffectType.obj_type_id, targetAttr = self.ObjectType.obj_type_id}

```

let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ActionEffectType, target = self.ObjectType, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ActionEffectType.act_id, targetAttr = self.ActionEffect.act_id}
let step2ReadPlan2 = Tuple{sourceAttr = self.ActionEffectType.act_effect_ix, targetAttr = self.ActionEffect.act_effect_ix}
let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2}
let step2 = Tuple{source = self.ActionEffectType, target = self.ActionEffect, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ActionEffect.rptd_id, targetAttr = self.Absolute_Reporting_Data.rptd_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ActionEffect, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.ActionEffect.act_id, targetAttr = self.Action.act_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.ActionEffect, target = self.Action, multiplicity = 1, rdSeq = step4ReadSeq}

let constructionSequence = Sequence{self.ActionEffectType, step1, step2, step3, step4}

```

Enclosing Transactional: Action_Effect_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier Type: Aggregation	ActionEffectType («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ActionEffect («Wrapper»)	Navigation Constraints: ActionEffectType_Enforced_ActionEffect: inv: self.ActionEffect.action-effect-category-code='AETYPE' Tagged Values:
Name: Type: Aggregation	Action («Wrapper»)	Navigation Constraints: Tagged Values:

C.1.6 ActionEvent_CBRN

The ActionEvent_CBRN Transactional Artifact captures information regarding action events that involve chemical, biological, radiological, or nuclear materiel individually or in combination.

oclConstructionSequence

Context ActionEvent_CBRN

```
let step1ReadPlan1 = Tuple{sourceAttr = self.CbrnEvent.cbrn_event_id, targetAttr = self.ActionEvent.act_event_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.CbrnEvent, target = self.ActionEvent, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ActionEvent.act_event_id, targetAttr = self.Action.act_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ActionEvent, target = self.Action, multiplicity = 1, rdSeq = step2ReadSeq}

let constructionSequence = Sequence{self.CbrnEvent, step1, step2}
```

self.action-event-id = self.Action.action-id

Context ActionEvent, inv ActionEvent_Action:

self.cbrn-event-id = self.ActionEvent.action-event-id

Context CbrnEvent, inv CbrnEvent_ActionEvent:

Enclosing Transactional: ActionEvent_CBRN

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Action («Wrapper»)	Navigation Constraints: ActionEvent_Enforced_Action: inv: self.Action.action-category-code='ACTEV' Tagged Values:
Name: Identifier Type: Aggregation	CbrnEvent («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	ActionEvent («Wrapper»)	Navigation Constraints: CbrnEvent_Enforced_ActionEvent: inv:self.ActionEvent.action-event-category-code='CBRN' Tagged Values:

Name: Type: Aggregation	ActionEvent_ChemicalBiological («Transactional»)	Navigation Constraints: CbrnEvent_Discriminator_ActionEvent_ChemicalBiological}: inv:self.CbrnEvent.cbrn-event-category-code='CHMBIO' Tagged Values:
Name: Type: Aggregation	ActionEvent_Radioactive («Transactional»)	Navigation Constraints: CbrnEvent_Discriminator_ActionEvent_Radioactive}: inv: self.CbrnEvent.cbrn-event-category-code='RADCTV' Tagged Values:

C.1.7 ActionEvent_ChemicalBiological

The ActionEvent_ChemicalBiological Transactional Artifact captures information regarding CBRN action events that involve chemical or biological materiel.

self.chemical-biological-event-id = self.CbrnEvent.cbrn-event-id

Context ChemicalBiologicalEvent, inv ChemicalBiologicalEvent_CbrnEvent:

self.cbrn-event-id = self.ActionEvent.action-event-id

Context CbrnEvent, inv CbrnEvent_ActionEvent:

self.action-event-id = self.Action.action-id

Context ActionEvent, inv ActionEvent_Action:

oclConstructionSequence

Context ActionEvent_ChemicalBiological

```

let step1ReadPlan1 = Tuple{sourceAttr = self.ChemicalBiologicalEvent.chm_bio_event_id, targetAttr =
self.CbrnEvent.cbrn_event_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ChemicalBiologicalEvent, target = self.CbrnEvent, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.CbrnEvent.cbrn_event_id, targetAttr = self.ActionEvent.act_event_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.CbrnEvent, target = self.ActionEvent, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ActionEvent.act_event_id, targetAttr = self.Action.act_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ActionEvent, target = self.Action, multiplicity = 1, rdSeq = step3ReadSeq}

let constructionSequence = Sequence{self.ChemicalBiologicalEvent, step1, step2, step3}

```

Enclosing Transactional: ActionEvent_ChemicalBiological

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Identifier Type: Aggregation	ChemicalBiologicalEvent («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	CbrnEvent («Wrapper»)	Navigation Constraints: ChemicalBiologicalEvent_Enforced_CbrnEvent}; inv: self.CbrnEvent.cbrn-event-category-code='CHMBIO' Tagged Values:
Name: Type: Aggregation	ActionEvent («Wrapper»)	Navigation Constraints: CbrnEvent_Enforced_ActionEvent}; inv: self.ActionEvent.action-event-category-code='CBRN' Tagged Values:
Name: Type: Aggregation	Action («Wrapper»)	Navigation Constraints: ActionEvent_Enforced_Action}; inv: self.Action.action-category-code='ACTEV' Tagged Values:

C.1.8 ActionEvent_Composite

The ActionEvent_Composite Transactional Artifact captures information regarding events (a subtype of action) that simply occur (often unforeseen) and need to be captured because they are of military significance. The event may be political, economic, environmental, or a disaster of some type, but the events of primary military interest are those that involve the use of chemical, biological, radiological or nuclear materiel individually or in combination.

self.action-event-id = self.Action.action-id

Context ActionEvent, inv ActionEvent_Action:

self.action-event-id = self.ActionEvent_Radiological.RadiologicalEvent.radiological-event-id

Context ActionEvent, inv ActionEvent_ActionEvent_Radiological:

self.action-event-id = self.ActionEvent_Radioactive.RadioactiveEvent.radioactive-event-id

Context ActionEvent, inv ActionEvent_ActionEvent_Radioactive:

self.action-event-id = self.ActionEvent_NuclearWeapon.NuclearWeaponEvent.nuclear-weapon-event-id
Context ActionEvent, inv ActionEvent_ActionEvent_NuclearWeapon:

self.action-event-id = self.ActionEvent_Nuclear.NuclearEvent.nuclear-event-id
Context ActionEvent, inv ActionEvent_ActionEvent_Nuclear:

self.action-event-id = self.ActionEvent_CBRN.CbrnEvent.cbrn-event-id
Context ActionEvent, inv ActionEvent_ActionEvent_CBRN:

oclConstructionSequence

Context ActionEvent_Composite

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ActionEvent.act_event_id, targetAttr = self.Action.act_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ActionEvent, target = self.Action, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ActionEvent.act_event_id, targetAttr =
self.ActionEvent_CBRN.cbrn_event_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ActionEvent, target = self.ActionEvent_CBRN, multiplicity = 0..1, rdSeq = step2ReadSeq}

let constructionSequence = Sequence{self.ActionEvent, step1, step2}
```

self.action-event-id = self.ActionEvent_ChemicalBiological.ChemicalBiologicalEvent.chemical-biological-event-id
Context ActionEvent, inv ActionEvent_ActionEvent_ChemicalBiological:

Enclosing Transactional: ActionEvent_Composite

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	NuclearEvent («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	CbrnEvent («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	NuclearWeaponEvent («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	RadioactiveEvent («Wrapper»)	Navigation Constraints: Tagged Values:

Name: Identifier Type: Aggregation	ActionEvent («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	RadiologicalEvent («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Action («Wrapper»)	Navigation Constraints: ActionEvent_Enforced_Action}; inv: self.Action.action-category-code='ACTEV' Tagged Values:
Name: Type: Aggregation	ChemicalBiologicalEvent («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ActionEvent_Nuclear («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ActionEvent_Radioactive («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ActionEvent_NuclearWeapon («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ActionEvent_Radiological («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ActionEvent_ChemicalBiological («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ActionEvent_CBRN («Transactional»)	Navigation Constraints: ActionEvent_Discriminator_ActionEvent_CBRN}; inv: self.ActionEvent.action-event-category-code='CBRN' Tagged Values:

C.1.9 ActionEvent_Detail

The ActionEvent_Detail Transactional Artifact captures supplemental information about an action event. The transactional encloses both the ActionEvent_Composite Transactional Artifact to relate the details of the action event to the event itself, and the Absolute_Reporting_Data Transactional Artifact in which information about the details is captured.

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id
 Context ActionEventDetail, inv ActionEventDetail_Absolute_Reporting_Data:

self.action-event-id = self.ActionEvent_Composite.ActionEvent.action-event-id
 Context ActionEventDetail, inv ActionEventDetail_ActionEvent_Composite:

oclConstructionSequence

Context ActionEvent_Detail

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ActionEventDetail.act_event_id, targetAttr =
self.ActionEvent_Composite.act_event_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ActionEventDetail, target = self.ActionEvent_Composite, multiplicity = 1, rdSeq =
step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ActionEventDetail.rptd_id, targetAttr =
self.Absolute_Reporting_Data.rptd_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ActionEventDetail, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq =
step2ReadSeq}
```

```
let constructionSequence = Sequence{self.ActionEventDetail, step1, step2}
```

Enclosing Transactional: ActionEvent_Detail

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier WatchPoint Type: Aggregation	ActionEventDetail («Wrapper»)	Navigation Constraints: Tagged Values: isWatchPoint = True isIdentifier = True
Name: Type: Aggregation	ActionEvent_Composite («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:

C.1.10 ActionEvent_Nuclear

The ActionEvent_Nuclear Transactional Artifact captures information regarding radioactive action events that involve nuclear materiel or nuclear detonation.

oclConstructionSequence

Context ActionEvent_Nuclear

```
let step1ReadPlan1 = Tuple{sourceAttr = self.NuclearEvent.nuc_event_id, targetAttr =
self.RadioactiveEvent.radact_event_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.NuclearEvent, target = self.RadioactiveEvent, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.RadioactiveEvent.radact_event_id, targetAttr =
self.CbrnEvent.cbrn_event_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.RadioactiveEvent, target = self.CbrnEvent, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.CbrnEvent.cbrn_event_id, targetAttr = self.ActionEvent.act_event_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.CbrnEvent, target = self.ActionEvent, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.ActionEvent.act_event_id, targetAttr = self.Action.act_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.ActionEvent, target = self.Action, multiplicity = 1, rdSeq = step4ReadSeq}

let constructionSequence = Sequence{self.NuclearEvent, step1, step2, step3, step4}
```

self.action-event-id = self.Action.action-id

Context ActionEvent, inv ActionEvent_Action:

self.radioactive-event-id = self.CbrnEvent.cbrn-event-id

Context RadioactiveEvent, inv RadioactiveEvent_CbrnEvent:

self.nuclear-event-id = self.RadioactiveEvent.radioactive-event-id

Context NuclearEvent, inv NuclearEvent_RadioactiveEvent:

self.cbrn-event-id = self.ActionEvent.action-event-id

Context CbrnEvent, inv CbrnEvent_ActionEvent:

Enclosing Transactional: ActionEvent_Nuclear

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Action («Wrapper»)	Navigation Constraints: ActionEvent_Enforced_Action}: inv: self.Action.action-category-code='ACTEV' Tagged Values:
Name: Type: Aggregation	ActionEvent («Wrapper»)	Navigation Constraints: CbrnEvent_Enforced_ActionEvent}: inv: self.ActionEvent.action-event-category-code='CBRN' Tagged Values:
Name: Type: Aggregation	CbrnEvent («Wrapper»)	Navigation Constraints: RadioactiveEvent_Enforced_CbrnEvent}: inv: self.CbrnEvent.cbrn-event-category-code='RADCTV' Tagged Values:
Name: Type: Aggregation	RadioactiveEvent («Wrapper»)	Navigation Constraints: NuclearEvent_Enforced_RadioactiveEvent}: inv: self.RadioactiveEvent.radioactive-event-category-code='NUCEVT' Tagged Values:
Name: Identifier Type: Aggregation	NuclearEvent («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True

C.1.11 ActionEvent_NuclearWeapon

The ActionEvent_NuclearWeapon Transactional Artifact captures information regarding nuclear action events that involve the detonation of a nuclear device.

self.radioactive-event-id = self.CbrnEvent.cbrn-event-id
Context RadioactiveEvent, inv RadioactiveEvent_CbrnEvent:

self.nuclear-weapon-event-id = self.NuclearEvent.nuclear-event-id
Context NuclearWeaponEvent, inv NuclearWeaponEvent_NuclearEvent:

self.nuclear-event-id = self.RadioactiveEvent.radioactive-event-id

Context NuclearEvent, inv NuclearEvent_RadioactiveEvent:

self.cbrn-event-id = self.ActionEvent.action-event-id

Context CbrnEvent, inv CbrnEvent_ActionEvent:

self.action-event-id = self.Action.action-id

Context ActionEvent, inv ActionEvent_Action:

oclConstructionSequence

Context ActionEvent_NuclearWeapon

```
let step1ReadPlan1 = Tuple{sourceAttr = self.NuclearWeaponEvent.nuc_weapon_event_id, targetAttr = self.NuclearEvent.nuc_event_id}
```

```
let step1ReadSeq = Sequence{ step1ReadPlan1}
```

```
let step1 = Tuple{source = self.NuclearWeaponEvent, target = self.NuclearEvent, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.NuclearEvent.nuc_event_id, targetAttr = self.RadioactiveEvent.radact_event_id}
```

```
let step2ReadSeq = Sequence{ step2ReadPlan1}
```

```
let step2 = Tuple{source = self.NuclearEvent, target = self.RadioactiveEvent, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.RadioactiveEvent.radact_event_id, targetAttr = self.CbrnEvent.cbrn_event_id}
```

```
let step3ReadSeq = Sequence{ step3ReadPlan1}
```

```
let step3 = Tuple{source = self.RadioactiveEvent, target = self.CbrnEvent, multiplicity = 1, rdSeq = step3ReadSeq}
```

```
let step4ReadPlan1 = Tuple{sourceAttr = self.CbrnEvent.cbrn_event_id, targetAttr = self.ActionEvent.act_event_id}
```

```
let step4ReadSeq = Sequence{ step4ReadPlan1}
```

```
let step4 = Tuple{source = self.CbrnEvent, target = self.ActionEvent, multiplicity = 1, rdSeq = step4ReadSeq}
```

```
let step5ReadPlan1 = Tuple{sourceAttr = self.ActionEvent.act_event_id, targetAttr = self.Action.act_id}
```

```
let step5ReadSeq = Sequence{ step5ReadPlan1}
```

```
let step5 = Tuple{source = self.ActionEvent, target = self.Action, multiplicity = 1, rdSeq = step5ReadSeq}
```

```
let constructionSequence = Sequence{self.NuclearWeaponEvent, step1, step2, step3, step4, step5}
```

Enclosing Transactional: ActionEvent_NuclearWeapon

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	ActionEvent («Wrapper»)	Navigation Constraints: CbrnEvent_Enforced_ActionEvent}; inv: self.ActionEvent.action-event-category-code='CBRN' Tagged Values:
Name: Type: Aggregation	RadioactiveEvent («Wrapper»)	Navigation Constraints: NuclearEvent_Enforced_RadioactiveEvent}; inv: self.RadioactiveEvent.radioactive-event-category-code='NUCEVT' Tagged Values:
Name: Type: Aggregation	Action («Wrapper»)	Navigation Constraints: ActionEvent_Enforced_Action}; inv: self.Action.action-category-code='ACTEV' Tagged Values:
Name: Identifier Type: Aggregation	NuclearWeaponEvent («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	NuclearEvent («Wrapper»)	Navigation Constraints: NuclearWeaponEvent_Enforced_NuclearEvent}; inv: self.NuclearEvent.nuclear-event-category-code='NUCWEP' Tagged Values:
Name: Type: Aggregation	CbrnEvent («Wrapper»)	Navigation Constraints: RadioactiveEvent_Enforced_CbrnEvent}; inv: self.CbrnEvent.cbrn-event-category-code='RADCTV' Tagged Values:

C.1.12 ActionEvent_Radioactive

The ActionEvent_Radioactive Transactional Artifact captures information regarding CBRN action events that involve radioactive materials.

self.radioactive-event-id = self.CbrnEvent.cbrn-event-id
Context RadioactiveEvent, inv RadioactiveEvent_CbrnEvent:

self.cbrn-event-id = self.ActionEvent.action-event-id
Context CbrnEvent, inv CbrnEvent_ActionEvent:

self.action-event-id = self.Action.action-id
Context ActionEvent, inv ActionEvent_Action:

oclConstructionSequence
Context ActionEvent_Radioactive

```
let step1ReadPlan1 = Tuple{sourceAttr = self.RadioactiveEvent.radact_event_id, targetAttr =
self.ActionEvent_Nuclear.nuc_event_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.RadioactiveEvent, target = self.ActionEvent_Nuclear, multiplicity = 1, rdSeq =
step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.RadioactiveEvent.radact_event_id, targetAttr =
self.ActionEvent_Radiological.radlgc_event_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.RadioactiveEvent, target = self.ActionEvent_Radiological, multiplicity = 1, rdSeq =
step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.RadioactiveEvent.radact_event_id, targetAttr =
self.CbrnEvent.cbrn_event_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.RadioactiveEvent, target = self.CbrnEvent, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.CbrnEvent.cbrn_event_id, targetAttr = self.ActionEvent.act_event_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.CbrnEvent, target = self.ActionEvent, multiplicity = 1, rdSeq = step4ReadSeq}

let step5ReadPlan1 = Tuple{sourceAttr = self.ActionEvent.act_event_id, targetAttr = self.Action.act_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.ActionEvent, target = self.Action, multiplicity = 1, rdSeq = step5ReadSeq}

let constructionSequence = Sequence{self.RadioactiveEvent, step1, step2, step3, step4, step5}
```

Enclosing Transaction: ActionEvent_Radioactive

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier Type: Aggregation	RadioactiveEvent («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	CbrnEvent («Wrapper»)	Navigation Constraints: RadioactiveEvent_Enforced_CbrnEvent: inv: self.CbrnEvent.cbrn-event-category-code='RADCTV' Tagged Values:
Name: Type: Aggregation	ActionEvent («Wrapper»)	Navigation Constraints: CbrnEvent_Enforced_ActionEvent: inv: self.ActionEvent.action-event-category-code='CBRN' Tagged Values:
Name: Type: Aggregation	Action («Wrapper»)	Navigation Constraints: ActionEvent_Enforced_Action: inv: self.Action.action-category-code='ACTEV' Tagged Values:
Name: Type: Aggregation	ActionEvent_Radiological («Transactional»)	Navigation Constraints: RadioactiveEvent_Discriminator_ActionEvent_Radiological: inv: self.RadioactiveEvent.radioactive-event-category-code='RADEVT' Tagged Values:
Name: Type: Aggregation	ActionEvent_Nuclear («Transactional»)	Navigation Constraints: RadioactiveEvent_Discriminator_ActionEvent_Nuclear: inv: self.RadioactiveEvent.radioactive-event-category-code='NUCEVT' Tagged Values:

C.1.13 ActionEvent_Radiological

The ActionEvent_Radiological Transactional Artifact captures information regarding radioactive action events that involve radioactive materials but do not involve nuclear material or nuclear detonation.

self.radioactive-event-id = self.CbrnEvent.cbrn-event-id
 Context RadioactiveEvent, inv RadioactiveEvent_CbrnEvent:

self.cbrn-event-id = self.ActionEvent.action-event-id
 Context CbrnEvent, inv CbrnEvent_ActionEvent:

self.action-event-id = self.Action.action-id
 Context ActionEvent, inv ActionEvent_Action:

oclConstructionSequence
 Context ActionEvent_Radiological

```

let step1ReadPlan1 = Tuple{sourceAttr = self.RadiologicalEvent.radlgc_event_id, targetAttr =
self.RadioactiveEvent.radact_event_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.RadiologicalEvent, target = self.RadioactiveEvent, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.RadioactiveEvent.radact_event_id, targetAttr =
self.CbrnEvent.cbrn_event_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.RadioactiveEvent, target = self.CbrnEvent, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.CbrnEvent.cbrn_event_id, targetAttr = self.ActionEvent.act_event_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.CbrnEvent, target = self.ActionEvent, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.ActionEvent.act_event_id, targetAttr = self.Action.act_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.ActionEvent, target = self.Action, multiplicity = 1, rdSeq = step4ReadSeq}

let constructionSequence = Sequence{self.RadiologicalEvent, step1, step2, step3, step4}
  
```

self.radiological-event-id = self.RadioactiveEvent.radioactive-event-id
 Context RadiologicalEvent, inv RadiologicalEvent_RadioactiveEvent:

Enclosing Transactional: ActionEvent_Radiological

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	CbrnEvent («Wrapper»)	Navigation Constraints: RadioactiveEvent_Enforced_CbrnEvent}: inv: self.CbrnEvent.cbrn-event-category-code='RADCTV' Tagged Values:

Name: Type: Aggregation	RadioactiveEvent («Wrapper»)	Navigation Constraints: RadiologicalEvent_Enforced_RadioactiveEvent): inv: self.RadioactiveEvent.radioactive-event-category-code='RADEV'T' Tagged Values:
Name: Type: Aggregation	Action («Wrapper»)	Navigation Constraints: ActionEvent_Enforced_Action): inv: self.Action.action-category-code='ACTEV' Tagged Values:
Name: Type: Aggregation	ActionEvent («Wrapper»)	Navigation Constraints: CbrnEvent_Enforced_ActionEvent): inv: self.ActionEvent.action-event-category-code='CBRN' Tagged Values:
Name: Identifier Type: Aggregation	RadiologicalEvent («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True

C.1.14 ActionEvent_Status

The ActionEvent_Status Transactional Artifact captures the perceived appraisal of the actual progress of a specific action event as determined by the reporting organization. The transactional encloses both the ActionEvent_Composite Transactional Artifact to relate the status of the action event to the event itself, and the Absolute_Reporting_Data Transactional Artifact in which information about the estimate is captured.

oclConstructionSequence

Context ActionEvent_Status

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ActionEventStatus.act_event_id, targetAttr =
self.ActionEvent_Composite.act_event_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ActionEventStatus, target = self.ActionEvent_Composite, multiplicity = 1, rdSeq =
step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ActionEventStatus.rptd_id, targetAttr =
self.Absolute_Reporting_Data.rptd_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ActionEventStatus, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq =
step2ReadSeq}
```

```
let constructionSequence = Sequence{self.ActionEventStatus, step1, step2}
```

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id

Context ActionEventStatus, inv ActionEventStatus_Absolute_Reporting_Data:

self.action-event-id = self.ActionEvent_Composite.ActionEvent.action-event-id

Context ActionEventStatus, inv ActionEventStatus_ActionEvent_Composite:

Enclosing Transactional: ActionEvent_Status

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier WatchPoint Type: Aggregation	ActionEventStatus («Wrapper»)	Navigation Constraints: Tagged Values: isWatchPoint = TrueisIdentifier = True
Name: Type: Aggregation	ActionEvent_Composite («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:

C.1.15 Action_Functional_Assoc

The Action_Functional_Association Transactional Artifact captures information regarding the functional association (dependency) between a pair of individual actions. These provide a means to create more complex sets or hierarchies of activities, such as those represented by an operational plan or order. Examples of functional associations include: is a prerequisite for, is an alternative to, is the cause of, etc.

self.action-functional-association-subject-action-id = self.Action.action-id
Context ActionFunctionalAssociation, inv ActionFunctionalAssociation_Action:

self.action-functional-association-object-action-id = self.Action.action-id
Context ActionFunctionalAssociation, inv ActionFunctionalAssociation_Action:

oclConstructionSequence

Context Action_Functional_Assoc

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ActionFunctionalAssociation.subj_act_id, targetAttr = self.Action.act_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ActionFunctionalAssociation, target = self.Action, multiplicity = 2, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ActionFunctionalAssociation.obj_act_id, targetAttr = self.Action.act_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ActionFunctionalAssociation, target = self.Action, multiplicity = 2, rdSeq = step2ReadSeq}

let constructionSequence = Sequence{self.ActionFunctionalAssociation, step1, step2}
```

Enclosing Transactional: Action_Functional_Assoc

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Action («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ActionFunctionalAssociation («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True

C.1.16 Action_Location

The Action_Location Transactional Artifact captures information that associates an individual action with a location, enabling the geographic position of the action to be specified, independently of the positions of the resources or objectives (both Object_Items) involved in the action. The Action_Location Transactional Artifact encloses the Absolute_Reporting_Data Transactional Artifact in which information about the association is captured.

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id
Context ActionLocation, inv ActionLocation_Absolute_Reporting_Data:

self.location-id = self.Location.location-id
Context ActionLocation, inv ActionLocation_Location:

self.action-id = self.Action.action-id
Context ActionLocation, inv ActionLocation_Action:

oclConstructionSequence
Context Action_Location

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ActionLocation.loc_id, targetAttr = self.Location.loc_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ActionLocation, target = self.Location, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ActionLocation.act_id, targetAttr = self.Action.act_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ActionLocation, target = self.Action, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.ActionLocation.rptd_id, targetAttr = self.Absolute_Reporting_Data.rptd_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
```

```
let step3 = Tuple{source = self.ActionLocation, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq = step3ReadSeq}
```

```
let constructionSequence = Sequence{self.ActionLocation, step1, step2, step3}
```

Enclosing Transactional: Action_Location

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier Watchpoint Type: Aggregation	ActionLocation («Wrapper»)	Navigation Constraints: Tagged Values: isWatchPoint = TrueisIdentifier = True
Name: Type: Aggregation	Action («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Location («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:

C.1.17 Action_Objective

The Action_Objective Transactional Artifact captures information that specifies the focus of an individual action (planned or realized) in terms of the involved Object_Items, Object_Types, or Action_Tasks. Each of these subtypes of ActionObjective is enclosed and defined in a separate Transactional Artifact. As well, the Action_Objective Transactional Artifact encloses the Organisational_Item Transactional Artifact that captures information pertaining to the organization that authorized the execution of the action.

```
self.action-objective-authorising-organisation-id = self.Organisation_Item.Organisation.organisation-id  
Context ActionObjective, inv ActionObjective_Organisation_Item:
```

```
self.action-id = self.Action_Objective_Type.ActionObjectiveType.action-id and self.action-objective-index =  
self.Action_Objective_Type.ActionObjectiveType.action-objective-index  
Context ActionObjective, inv ActionObjective_Action_Objective_Type:
```

```
self.action-id = self.Action_Objective_Task.ActionObjectiveTask.action-id and self.action-objective-index =  
self.Action_Objective_Task.ActionObjectiveTask.action-objective-index
```

Context ActionObjective, inv ActionObjective_Action_Objective_Task:

self.action-id = self.Action_Objective_Item.ActionObjectiveItem.action-id and self.action-objective-index = self.Action_Objective_Item.ActionObjectiveItem.action-objective-index

Context ActionObjective, inv ActionObjective_Action_Objective_Item:

self.action-id = self.Action.action-id

Context ActionObjective, inv ActionObjective_Action:

oclConstructionSequence

Context Action_Objective

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ActionObjective.act_id, targetAttr = self.Action.act_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ActionObjective, target = self.Action, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ActionObjective.act_id, targetAttr = self.Action_Objective_Type.act_id}
let step2ReadPlan2 = Tuple{sourceAttr = self.ActionObjective.act_objve_ix, targetAttr =
self.Action_Objective_Type.act_objve_ix}
let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2}
let step2 = Tuple{source = self.ActionObjective, target = self.Action_Objective_Type, multiplicity = 1, rdSeq =
step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ActionObjective.act_id, targetAttr = self.Action_Objective_Task.act_id}
let step3ReadPlan2 = Tuple{sourceAttr = self.ActionObjective.act_objve_ix, targetAttr =
self.Action_Objective_Task.act_objve_ix}
let step3ReadSeq = Sequence{ step3ReadPlan1, step3ReadPlan2}
let step3 = Tuple{source = self.ActionObjective, target = self.Action_Objective_Task, multiplicity = 1, rdSeq =
step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.ActionObjective.act_id, targetAttr = self.Action_Objective_Item.act_id}
let step4ReadPlan2 = Tuple{sourceAttr = self.ActionObjective.act_objve_ix, targetAttr =
self.Action_Objective_Item.act_objve_ix}
let step4ReadSeq = Sequence{ step4ReadPlan1, step4ReadPlan2}
let step4 = Tuple{source = self.ActionObjective, target = self.Action_Objective_Item, multiplicity = 1, rdSeq =
step4ReadSeq}

let step5ReadPlan1 = Tuple{sourceAttr = self.ActionObjective.authorising_org_id, targetAttr =
self.Organisation_Item.org_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.ActionObjective, target = self.Organisation_Item, multiplicity = 0..1, rdSeq =
step5ReadSeq}

let constructionSequence = Sequence{self.ActionObjective, step1, step2, step3, step4, step5}
```

Enclosing Transactional: Action_Objective

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Action_Objective_Type («Transactional»)	Navigation Constraints: ActionObjective_Discriminator_Action_Objective_Type}; inv: self.ActionObjective.action-objective-category-code='OT' Tagged Values:
Name: Type: Aggregation	Organisation_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Action («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ActionObjectiveTask («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ActionObjective («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True
Name: Type: Aggregation	Action_Objective_Task («Transactional»)	Navigation Constraints: ActionObjective_Discriminator_Action_Objective_Task}; inv: self.ActionObjective.action-objective-category-code='OTASK' Tagged Values:
Name: Type: Aggregation	Action_Objective_Item («Transactional»)	Navigation Constraints: ActionObjective_Discriminator_Action_Objective_Item}; inv: self.ActionObjective.action-objective-category-code='OI' Tagged Values:
Name: Type: Aggregation	ActionObjectiveTypeImageryProduct («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ActionObjectiveItem («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: Tagged Values:

Name: Type: Aggregation	ActionObjectiveType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Tagged Values:

C.1.18 Action_Objective_Item

The Action_Objective_Item Transactional Artifact is a support transactional for Action_Objective and captures information about a specific Target - a subtype of battle-space object (an Object_Item) that is the focus of an individual action (planned or realized). The information captured also includes the method by which the target was/is to be located (e.g. Flare, Laser, Radio Beacon, etc.) at a given time for the benefit of the using organization. Consequently, this Transactional Artifact encloses the Organisational_Item Transactional Artifact in order to capture the information pertaining to the using organization.

oclConstructionSequence

Context Action_Objective_Item

```

let step1ReadPlan1 = Tuple{sourceAttr = self.ActionObjectiveItem.obj_item_id, targetAttr = self.ObjectItem.obj_item_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ActionObjectiveItem, target = self.ObjectItem, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ActionObjectiveItem.act_id, targetAttr = self.ActionObjective.act_id}
let step2ReadPlan2 = Tuple{sourceAttr = self.ActionObjectiveItem.act_objve_ix, targetAttr =
self.ActionObjective.act_objve_ix}
let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2}
let step2 = Tuple{source = self.ActionObjectiveItem, target = self.ActionObjective, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ActionObjectiveItem.act_id, targetAttr = self.Target.act_id}
let step3ReadPlan2 = Tuple{sourceAttr = self.ActionObjectiveItem.act_objve_ix, targetAttr = self.Target.act_objve_ix}
let step3ReadSeq = Sequence{ step3ReadPlan1, step3ReadPlan2}
let step3 = Tuple{source = self.ActionObjectiveItem, target = self.Target, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.Target.act_id, targetAttr =
self.Action_Objective_Item_Target_Personnel_Protection.act_id}
let step4ReadPlan2 = Tuple{sourceAttr = self.Target.act_objve_ix, targetAttr =
self.Action_Objective_Item_Target_Personnel_Protection.act_objve_ix}
let step4ReadSeq = Sequence{ step4ReadPlan1, step4ReadPlan2}
let step4 = Tuple{source = self.Target, target = self.Action_Objective_Item_Target_Personnel_Protection, multiplicity =
0..*, rdSeq = step4ReadSeq}

let step5ReadPlan1 = Tuple{sourceAttr = self.ActionObjectiveItem.act_id, targetAttr =
self.Action_Objective_Item_Marking.act_id}
let step5ReadPlan2 = Tuple{sourceAttr = self.ActionObjectiveItem.act_objve_ix, targetAttr =
self.Action_Objective_Item_Marking.act_objve_ix}
let step5ReadSeq = Sequence{ step5ReadPlan1, step5ReadPlan2}
let step5 = Tuple{source = self.ActionObjectiveItem, target = self.Action_Objective_Item_Marking, multiplicity = 0..*, rdSeq =
step5ReadSeq}

```

let constructionSequence = Sequence{self.ActionObjectiveItem, step1, step2, step3, step4, step5}

self.object-item-id = self.ObjectItem.object-item-id

Context ActionObjectiveItem, inv ActionObjectiveItem_ObjectItem:

self.action-id = self.Target.action-id and self.action-objective-index = self.Target.action-objective-index

Context ActionObjectiveItem, inv ActionObjectiveItem_Target:

self.action-id = self.ActionObjective.action-id and self.action-objective-index = self.ActionObjective.action-objective-index

Context ActionObjectiveItem, inv ActionObjectiveItem_ActionObjective:

self.action-id = self.Action_Objective_Item_Marking.ActionObjectiveItemMarking.action-id and self.action-objective-index = self.Action_Objective_Item_Marking.ActionObjectiveItemMarking.action-objective-index

Context ActionObjectiveItem, inv ActionObjectiveItem_Action_Objective_Item_Marking:

self.action-id = self.Action_Objective_Item_Target_Personnel_Protection.TargetPersonnelProtection.action-id and self.action-objective-index =

self.Action_Objective_Item_Target_Personnel_Protection.TargetPersonnelProtection.action-objective-index

Context Target, inv Target_Action_Objective_Item_Target_Personnel_Protection:

Enclosing Transactional: Action_Objective_Item

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Target («Wrapper»)	Navigation Constraints: ActionObjectiveItem_Discriminator_Target}: inv: self.ActionObjectiveItem.action-objective-item-category-code='TARGET' Tagged Values:
Name: Type: Aggregation	TargetPersonnelProtection («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	ActionObjectiveItem («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True

Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Action_Objective_Item_Marking («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Action_Objective_Item_Target_Personnel_Protection («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ActionObjective («Wrapper»)	Navigation Constraints: ActionObjectiveItem_Enforced_ActionObjective}; inv: self.ActionObjective.action-objective-category-code='OI' Tagged Values:

C.1.19 Action_Objective_Item_Marking

The Action_Objective_Item_Marking Transactional Artifact is a support transactional for Action_Objective and captures information about a specific Target - a subtype of battle-space object (an Object_Item) that is the focus of an individual action (planned or realized). The information captured also includes the method by which the target was/is to be located (e.g. Flare, Laser, Radio Beacon, etc.) at a given time for the benefit of the using organization. Consequently, this Transactional Artifact encloses the Organisational_Item Transactional Artifact in order to capture the information pertaining to the using organization.

self.action-objective-item-marking-using-organisation-id = self.Organisation.organisation-id

Context ActionObjectiveItemMarking, inv ActionObjectiveItemMarking_Organisation:

oclConstructionSequence

Context Action_Objective_Item_Marking

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ActionObjectiveItemMarking.using_org_id, targetAttr = self.Organisation.org_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ActionObjectiveItemMarking, target = self.Organisation, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let constructionSequence = Sequence{self.ActionObjectiveItemMarking, step1}
```

Enclosing Transactional: Action_Objective_Item_Marking

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Identifier Type: Aggregation	ActionObjectiveItemMarking («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	Organisation («Wrapper»)	Navigation Constraints: Tagged Values:

C.1.20 Action_Objective_Item_Target_Personnel_Protection

The Action_Objective_Item_Target_Personnel_Protection Transactional Artifact is a support transactional for Action_Objective and captures information about the general protective posture with regard to the first and second volleys for a specific target and any changes in the state of this posture between these volleys. The protective posture refers to the states such as standing, prone, dug-in, and under cover.

oclConstructionSequence

Context Action_Objective_Item_Target_Personnel_Protection

```
let step1ReadPlan1 = Tuple{sourceAttr = self.TargetPersonnelProtection.rptd_id, targetAttr =  
self.Absolute_Reporting_Data.rptd_id}  
let step1ReadSeq = Sequence{ step1ReadPlan1}  
let step1 = Tuple{source = self.TargetPersonnelProtection, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq =  
step1ReadSeq}
```

```
let constructionSequence = Sequence{self.TargetPersonnelProtection, step1}
```

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id

Context TargetPersonnelProtection, inv TargetPersonnelProtection_Absolute_Reporting_Data:

Enclosing Transactional: Action_Objective_Item_Target_Personnel_Protection

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Identifier Type: Aggregation	TargetPersonnelProtection («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:

C.1.21 Action_Objective_Task

The Action_Objective_Task Transactional Artifact is a support transactional for Action_Objective and captures information about the operation of a specific ActionTask that accomplishes the objective of the specific action.

self.action-objective-task-action-task-id = self.ActionTask_Composite.ActionTask.action-task-id
Context ActionObjectiveTask, inv ActionObjectiveTask_ActionTask_Composite:

self.action-id = self.ActionObjective.action-id and self.action-objective-index = self.ActionObjective.action-objective-index
Context ActionObjectiveTask, inv ActionObjectiveTask_ActionObjective:

oclConstructionSequence

Context Action_Objective_Task

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ActionObjectiveTask.act_objve_task_act_task_id, targetAttr = self.ActionTask_Composite.act_task_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ActionObjectiveTask, target = self.ActionTask_Composite, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ActionObjectiveTask.act_id, targetAttr = self.ActionObjective.act_id}
let step2ReadPlan2 = Tuple{sourceAttr = self.ActionObjectiveTask.act_objve_ix, targetAttr = self.ActionObjective.act_objve_ix}
let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2}
let step2 = Tuple{source = self.ActionObjectiveTask, target = self.ActionObjective, multiplicity = 1, rdSeq = step2ReadSeq}

let constructionSequence = Sequence{self.ActionObjectiveTask, step1, step2}
```

Enclosing Transactional: Action_Objective_Task

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	ActionTask_Composite («Transactional»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	ActionObjectiveTask («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	ActionObjective («Wrapper»)	Navigation Constraints: ActionObjectiveTask_Enforced_ActionObjective}; inv: self.ActionObjective.action-objective-category-code='OTASK' Tagged Values:

C.1.22 Action_Objective_Type

The Action_Objective_Type Transactional Artifact is a support transactional for Action_Objective and captures information about the primary type of Target (e.g. armored fighting vehicles) that is the focus of an individual action (planned or realized). The transactional also captures details of the imagery products (e.g., scale) that were/will be obtained from the reconnaissance operations involving these targets.

self.action-id = self.ActionObjective.action-id and self.action-objective-index = self.ActionObjective.action-objective-index

Context ActionObjectiveType, inv ActionObjectiveType_ActionObjective:

oclConstructionSequence

Context Action_Objective_Type

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ActionObjectiveType.obj_type_id, targetAttr = self.ObjectType.obj_type_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ActionObjectiveType, target = self.ObjectType, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ActionObjectiveType.act_id, targetAttr =
self.ActionObjectiveTypeImageryProduct.act_id}
let step2ReadPlan2 = Tuple{sourceAttr = self.ActionObjectiveType.act_objve_ix, targetAttr =
self.ActionObjectiveTypeImageryProduct.act_objve_ix}
let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2}
let step2 = Tuple{source = self.ActionObjectiveType, target = self.ActionObjectiveTypeImageryProduct, multiplicity = 1,
```

```

rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ActionObjectiveType.act_id, targetAttr = self.ActionObjective.act_id}
let step3ReadPlan2 = Tuple{sourceAttr = self.ActionObjectiveType.act_objve_ix, targetAttr =
self.ActionObjective.act_objve_ix}
let step3ReadSeq = Sequence{ step3ReadPlan1, step3ReadPlan2}
let step3 = Tuple{source = self.ActionObjectiveType, target = self.ActionObjective, multiplicity = 1, rdSeq =
step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.ActionObjectiveType.ctgtlst_id, targetAttr =
self.CandidateTargetDetailType.ctgtlst_id}
let step4ReadPlan2 = Tuple{sourceAttr = self.ActionObjectiveType.ctgtdet_type_ix, targetAttr =
self.CandidateTargetDetailType.ctgtdet_type_ix}
let step4ReadSeq = Sequence{ step4ReadPlan1, step4ReadPlan2}
let step4 = Tuple{source = self.ActionObjectiveType, target = self.CandidateTargetDetailType, multiplicity = 0..1, rdSeq =
step4ReadSeq}

let constructionSequence = Sequence{self.ActionObjectiveType, step1, step2, step3, step4}

```

self.candidate-target-list-id = self.CandidateTargetDetailType.candidate-target-list-id and self.candidate-target-detail-type-index = self.CandidateTargetDetailType.candidate-target-detail-type-index
Context ActionObjectiveType, inv ActionObjectiveType_CandidateTargetDetailType:

self.object-type-id = self.ObjectType.object-type-id
Context ActionObjectiveType, inv ActionObjectiveType_ObjectType:

self.action-id = self.ActionObjectiveTypeImageryProduct.action-id and self.action-objective-index = self.ActionObjectiveTypeImageryProduct.action-objective-index
Context ActionObjectiveType, inv ActionObjectiveType_ActionObjectiveTypeImageryProduct:

Enclosing Transactional: Action_Objective_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	ActionObjectiveTypeImagery Product («Wrapper»)	Navigation Constraints: ActionObjectiveType_Discriminator_ActionObjectiveTypeImagery Product}; inv: self.ActionObjectiveType.action-objective-type-category-code='AOTIMG' Tagged Values:

Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	ActionObjectiveType («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	CandidateTargetDetailType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ActionObjective («Wrapper»)	Navigation Constraints: ActionObjectiveType_Enforced_ActionObjective}; inv: self.ActionObjective.action-objective-category-code='OT' Tagged Values:

C.1.23 Action_Reference_Assoc

The Action_Reference_Assoc Transactional Artifact captures information regarding the nature of the relationship between a specific action and a specific reference. For example, the action may be changed, defined, directed, etc. by different references. Because the reference information may have a security classification, this information is also included in this transactional.

self.security-classification-id = self.SecurityClassification.security-classification-id
Context Reference, inv Reference_SecurityClassification:

self.reference-id = self.Reference.reference-id
Context ActionReferenceAssociation, inv ActionReferenceAssociation_Reference:

self.action-id = self.Action.action-id
Context ActionReferenceAssociation, inv ActionReferenceAssociation_Action:

oclConstructionSequence

Context Action_Reference_Assoc

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ActionReferenceAssociation.ref_id, targetAttr = self.Reference.ref_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ActionReferenceAssociation, target = self.Reference, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.Reference.security_clsfc_id, targetAttr = self.SecurityClassification.security_clsfc_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.Reference, target = self.SecurityClassification, multiplicity = 0..1, rdSeq = step2ReadSeq}
```



```

let step3ReadPlan1 = Tuple{sourceAttr = self.ActionReferenceAssociation.act_id, targetAttr = self.Action.act_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ActionReferenceAssociation, target = self.Action, multiplicity = 1, rdSeq = step3ReadSeq}

let constructionSequence = Sequence{self.ActionReferenceAssociation, step1, step2, step3}

```

Enclosing Transactional: Action_Reference_Assoc

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Reference («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	SecurityClassification («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Action («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	ActionReferenceAssociation («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True

C.1.24 Action_Required_Capability

The Action_Required_Capability Transactional Artifact captures information regarding the capability required of a resource for a specific action. The set of possible capabilities is specified in the support Transactional Artifact Capability_Composite, which is consequently, enclosed in this transactional Artifact.

self.capability-id = self.Capability_Composite.Capability.capability-id
Context ActionRequiredCapability, inv ActionRequiredCapability_Capability_Composite:

self.action-id = self.Action.action-id
Context ActionRequiredCapability, inv ActionRequiredCapability_Action:

oclConstructionSequence

Context Action_Required_Capability

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ActionRequiredCapability.act_id, targetAttr = self.Action.act_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ActionRequiredCapability, target = self.Action, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ActionRequiredCapability.capab_id, targetAttr =
self.Capability_Composite.capab_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ActionRequiredCapability, target = self.Capability_Composite, multiplicity = 1, rdSeq =
step2ReadSeq}

let constructionSequence = Sequence{self.ActionRequiredCapability, step1, step2}
```

Enclosing Transactional: Action_Required_Capability

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Action («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ActionRequiredCapability («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True
Name: Type: Aggregation	Capability_Composite («Transactional»)	Navigation Constraints: Tagged Values:

C.1.25 Action_Resource

The Action_Resource Transactional Artifact captures information regarding the resources (Object_Items or Object_Types) that have been specified as things executing, things being used in or allocated to, or things whose use is qualified in some way in carrying out a specific action. This transactional encloses the Organisation_Item Transactional Artifact in order to capture the information pertaining to the organization that authorized the use of the resource in the action.

self.action-id = self.Action_Resource_Type.ActionResourceType.action-id and self.action-resource-index = self.Action_Resource_Type.ActionResourceType.action-resource-index

Context ActionResource, inv ActionResource_Action_Resource_Type:

self.action-id = self.Action_Resource_Item.ActionResourceItem.action-id and self.action-resource-index = self.Action_Resource_Item.ActionResourceItem.action-resource-index
 Context ActionResource, inv ActionResource_Action_Resource_Item:

oclConstructionSequence

Context Action_Resource

```

let step1ReadPlan1 = Tuple{sourceAttr = self.ActionResource.act_id, targetAttr = self.Action_Resource_Item.act_id}
let step1ReadPlan2 = Tuple{sourceAttr = self.ActionResource.act_res_ix, targetAttr =
self.Action_Resource_Item.act_res_ix}
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2}
let step1 = Tuple{source = self.ActionResource, target = self.Action_Resource_Item, multiplicity = 1, rdSeq =
step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ActionResource.act_id, targetAttr = self.Action_Resource_Type.act_id}
let step2ReadPlan2 = Tuple{sourceAttr = self.ActionResource.act_res_ix, targetAttr =
self.Action_Resource_Type.act_res_ix}
let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2}
let step2 = Tuple{source = self.ActionResource, target = self.Action_Resource_Type, multiplicity = 1, rdSeq =
step2ReadSeq}

let constructionSequence = Sequence{self.ActionResource, step1, step2}
  
```

Enclosing Transactional: Action_Resource

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Type: Aggregation	ActionResourceType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Action («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ActionResourceItem («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Organisation_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ActionResource («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True

Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Action_Resource_Type («Transactional»)	Navigation Constraints: ActionResource_Discriminator_Action_Resource_Type): inv: self.ActionResource.action-resource-category-code='RT' Tagged Values:
Name: Type: Aggregation	Action_Resource_Item («Transactional»)	Navigation Constraints: ActionResource_Discriminator_Action_Resource_Item): inv: self.ActionResource.action-resource-category-code='RI' Tagged Values:

C.1.26 Action_Resource_Employment

The Action_Resource_Employment Transactional Artifact captures information regarding the procedure for using a specific resource (Object_Items or Object_Types) for a specific action, with or without dependence on a specific action-objective. The transactional encloses both the Action_Resource Transactional Artifact to capture details of the resource, and the Action_Objective Transactional Artifact to capture the details of the target.

oclConstructionSequence

Context Action_Resource_Employment

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ActionResourceEmployment.act_id, targetAttr = self.Action_Resource_Employment_Maritime.act_id}
let step1ReadPlan2 = Tuple{sourceAttr = self.ActionResourceEmployment.act_res_ix, targetAttr = self.Action_Resource_Employment_Maritime.act_res_ix}
let step1ReadPlan3 = Tuple{sourceAttr = self.ActionResourceEmployment.act_res_employ_ix, targetAttr = self.Action_Resource_Employment_Maritime.act_res_employ_ix}
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2, step1ReadPlan3}
let step1 = Tuple{source = self.ActionResourceEmployment, target = self.Action_Resource_Employment_Maritime, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ActionResourceEmployment.act_id, targetAttr = self.Action_Resource_Employment_Aircraft.act_id}
let step2ReadPlan2 = Tuple{sourceAttr = self.ActionResourceEmployment.act_res_ix, targetAttr = self.Action_Resource_Employment_Aircraft.act_res_ix}
let step2ReadPlan3 = Tuple{sourceAttr = self.ActionResourceEmployment.act_res_employ_ix, targetAttr = self.Action_Resource_Employment_Aircraft.act_res_employ_ix}
let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2, step2ReadPlan3}
let step2 = Tuple{source = self.ActionResourceEmployment, target = self.Action_Resource_Employment_Aircraft, multiplicity = 1, rdSeq = step2ReadSeq}
```

```

let step3ReadPlan1 = Tuple{sourceAttr = self.ActionResourceEmployment.act_id, targetAttr =
self.Action_Resource_Employment_Electronic_Warfare.act_id}
let step3ReadPlan2 = Tuple{sourceAttr = self.ActionResourceEmployment.act_res_ix, targetAttr =
self.Action_Resource_Employment_Electronic_Warfare.act_res_ix}
let step3ReadPlan3 = Tuple{sourceAttr = self.ActionResourceEmployment.act_res_employ_ix, targetAttr =
self.Action_Resource_Employment_Electronic_Warfare.act_res_employ_ix}
let step3ReadSeq = Sequence{ step3ReadPlan1, step3ReadPlan2, step3ReadPlan3}
let step3 = Tuple{source = self.ActionResourceEmployment, target =
self.Action_Resource_Employment_Electronic_Warfare, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.ActionResourceEmployment.act_id, targetAttr =
self.Action_Resource_Employment_Reconnaissance.act_id}
let step4ReadPlan2 = Tuple{sourceAttr = self.ActionResourceEmployment.act_res_ix, targetAttr =
self.Action_Resource_Employment_Reconnaissance.act_res_ix}
let step4ReadPlan3 = Tuple{sourceAttr = self.ActionResourceEmployment.act_res_employ_ix, targetAttr =
self.Action_Resource_Employment_Reconnaissance.act_res_employ_ix}
let step4ReadSeq = Sequence{ step4ReadPlan1, step4ReadPlan2, step4ReadPlan3}
let step4 = Tuple{source = self.ActionResourceEmployment, target =
self.Action_Resource_Employment_Reconnaissance, multiplicity = 1, rdSeq = step4ReadSeq}

let constructionSequence = Sequence{self.ActionResourceEmployment, step1, step2, step3, step4}

```

Enclosing Transactional: Action_Resource_Employment

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	ActionAircraftEmployment («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Action_Resource («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ActionElectronicWarfareEmployment («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ActionResourceEmployment («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True
Name: Type: Aggregation	ActionReconnaissanceEmployment («Wrapper»)	Navigation Constraints: Tagged Values:

Name: Type: Aggregation	ActionMaritimeEmployment («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Action_Objective («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Action_Resource_Employment_Reconnaissance («Transactional»)	Navigation Constraints: ActionResourceEmployment_Discriminator_Action_Resource_Employment_Reconnaissance}: inv: self.ActionResourceEmployment.action-resource-employment-category-code='RECEMP' Tagged Values:
Name: Type: Aggregation	Action_Resource_Employment_Maritime («Transactional»)	Navigation Constraints: ActionResourceEmployment_Discriminator_Action_Resource_Employment_Maritime}: inv: self.ActionResourceEmployment.action-resource-employment-category-code='MAREMP' Tagged Values:
Name: Type: Aggregation	Action_Resource_Employment_Aircraft («Transactional»)	Navigation Constraints: ActionResourceEmployment_Discriminator_Action_Resource_Employment_Aircraft}: inv: self.ActionResourceEmployment.action-resource-employment-category-code='AIREMP' Tagged Values:
Name: Type: Aggregation	Action_Resource_Employment_Electronic_Warfare («Transactional»)	Navigation Constraints: ActionResourceEmployment_Discriminator_Action_Resource_Employment_Electronic_Warfare}: inv: self.ActionResourceEmployment.action-resource-employment-category-code='ELCEMP' Tagged Values:

C.1.27 Action_Resource_Employment_Aircraft

The Action_Resource_Employment_Aircraft Transactional Artifact captures information regarding the procedure that guides the use of an action-resource that is capable of atmospheric flight.

self.action-objective-index = self.ActionObjective.action-objective-index and self.action-id =

self.ActionObjective.action-id

Context ActionResourceEmployment, inv ActionResourceEmployment_ActionObjective:

self.action-id = self.ActionResourceEmployment.action-id and self.action-resource-index = self.ActionResourceEmployment.action-resource-index and self.action-resource-employment-index = self.ActionResourceEmployment.action-resource-employment-index

Context ActionAircraftEmployment, inv ActionAircraftEmployment_ActionResourceEmployment:

self.action-id = self.ActionResource.action-id and self.action-resource-index = self.ActionResource.action-resource-index

Context ActionResourceEmployment, inv ActionResourceEmployment_ActionResource:

oclConstructionSequence

Context Action_Resource_Employment_Aircraft

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ActionAircraftEmployment.act_id, targetAttr = self.ActionResourceEmployment.act_id}
let step1ReadPlan2 = Tuple{sourceAttr = self.ActionAircraftEmployment.act_res_ix, targetAttr = self.ActionResourceEmployment.act_res_ix}
let step1ReadPlan3 = Tuple{sourceAttr = self.ActionAircraftEmployment.act_res_employ_ix, targetAttr = self.ActionResourceEmployment.act_res_employ_ix}
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2, step1ReadPlan3}
let step1 = Tuple{source = self.ActionAircraftEmployment, target = self.ActionResourceEmployment, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ActionResourceEmployment.act_id, targetAttr = self.ActionResource.act_id}
let step2ReadPlan2 = Tuple{sourceAttr = self.ActionResourceEmployment.act_res_ix, targetAttr = self.ActionResource.act_res_ix}
let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2}
let step2 = Tuple{source = self.ActionResourceEmployment, target = self.ActionResource, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ActionResourceEmployment.act_id, targetAttr = self.ActionObjective.act_id}
let step3ReadPlan2 = Tuple{sourceAttr = self.ActionResourceEmployment.act_objve_ix, targetAttr = self.ActionObjective.act_objve_ix}
let step3ReadSeq = Sequence{ step3ReadPlan1, step3ReadPlan2}
let step3 = Tuple{source = self.ActionResourceEmployment, target = self.ActionObjective, multiplicity = 1, rdSeq = step3ReadSeq}

let constructionSequence = Sequence{self.ActionAircraftEmployment, step1, step2, step3}
```

Enclosing Transactional: Action_Resource_Employment_Aircraft

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	ActionObjective («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	ActionAircraftEmployment («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	ActionResource («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ActionResourceEmployment («Wrapper»)	Navigation Constraints: ActionAircraftEmployment_Enforced_ActionResourceEmployment}; inv: self.ActionResourceEmployment.action-resource-employment-category-code='AIREMP' Tagged Values:

C.1.28 Action_Resource_Employment_Electronic_Warfare

The Action_Resource_Employment_Electronic_Warfare Transactional Artifact captures information regarding the technique used by an action-resource for Electronic Warfare by electronic or mechanical means.

self.action-objective-index = self.ActionObjective.action-objective-index and self.action-id = self.ActionObjective.action-id

Context ActionResourceEmployment, inv ActionResourceEmployment_ActionObjective:

self.action-id = self.ActionResourceEmployment.action-id and self.action-resource-index = self.ActionResourceEmployment.action-resource-index and self.action-resource-employment-index = self.ActionResourceEmployment.action-resource-employment-index

Context ActionElectronicWarfareEmployment, inv ActionElectronicWarfareEmployment_ActionResourceEmployment:

self.action-id = self.ActionResource.action-id and self.action-resource-index = self.ActionResource.action-resource-index

Context ActionResourceEmployment, inv ActionResourceEmployment_ActionResource:

oclConstructionSequence

Context Action_Resource_Employment_Electronic_Warfare

let step1ReadPlan1 = Tuple{sourceAttr = self.ActionElectronicWarfareEmployment.act_id, targetAttr =


```

self.ActionResourceEmployment.act_id}
let step1ReadPlan2 = Tuple{sourceAttr = self.ActionElectronicWarfareEmployment.act_res_ix, targetAttr =
self.ActionResourceEmployment.act_res_ix}
let step1ReadPlan3 = Tuple{sourceAttr = self.ActionElectronicWarfareEmployment.act_res_employ_ix, targetAttr =
self.ActionResourceEmployment.act_res_employ_ix}
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2, step1ReadPlan3}
let step1 = Tuple{source = self.ActionElectronicWarfareEmployment, target = self.ActionResourceEmployment, multiplicity
= 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ActionResourceEmployment.act_id, targetAttr = self.ActionResource.act_id}
let step2ReadPlan2 = Tuple{sourceAttr = self.ActionResourceEmployment.act_res_ix, targetAttr =
self.ActionResource.act_res_ix}
let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2}
let step2 = Tuple{source = self.ActionResourceEmployment, target = self.ActionResource, multiplicity = 1, rdSeq =
step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ActionResourceEmployment.act_id, targetAttr = self.ActionObjective.act_id}
let step3ReadPlan2 = Tuple{sourceAttr = self.ActionResourceEmployment.act_objve_ix, targetAttr =
self.ActionObjective.act_objve_ix}
let step3ReadSeq = Sequence{ step3ReadPlan1, step3ReadPlan2}
let step3 = Tuple{source = self.ActionResourceEmployment, target = self.ActionObjective, multiplicity = 1, rdSeq =
step3ReadSeq}

let constructionSequence = Sequence{self.ActionElectronicWarfareEmployment, step1, step2, step3}

```

Enclosing Transaction: Action_Resource_Employment_Electronic_Warfare

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Type: Aggregation	ActionObjective («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ActionResource («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ActionResourceEmployment («Wrapper»)	Navigation Constraints: ActionElectronicWarfareEmployment_Enforced_ActionResourceEmployment}; inv: self.ActionResourceEmployment.action-resource-employment-category-code='ELCEMP' Tagged Values:

Name: Identifier Type: Aggregation	ActionElectronicWarfare Employment («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
---	---	--

C.1.29 Action_Resource_Employment_Maritime

The Action_Resource_Employment_Maritime Transactional Artifact captures information regarding the procedure that guides the use of an action-resource in a maritime environment.

oclConstructionSequence

Context Action_Resource_Employment_Maritime

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ActionMaritimeEmployment.act_id, targetAttr =
self.ActionResourceEmployment.act_id}
let step1ReadPlan2 = Tuple{sourceAttr = self.ActionMaritimeEmployment.act_res_ix, targetAttr =
self.ActionResourceEmployment.act_res_ix}
let step1ReadPlan3 = Tuple{sourceAttr = self.ActionMaritimeEmployment.act_res_employ_ix, targetAttr =
self.ActionResourceEmployment.act_res_employ_ix}
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2, step1ReadPlan3}
let step1 = Tuple{source = self.ActionMaritimeEmployment, target = self.ActionResourceEmployment, multiplicity = 1,
rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ActionResourceEmployment.act_id, targetAttr = self.ActionResource.act_id}
let step2ReadPlan2 = Tuple{sourceAttr = self.ActionResourceEmployment.act_res_ix, targetAttr =
self.ActionResource.act_res_ix}
let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2}
let step2 = Tuple{source = self.ActionResourceEmployment, target = self.ActionResource, multiplicity = 1, rdSeq =
step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.ActionResourceEmployment.act_id, targetAttr = self.ActionObjective.act_id}
let step3ReadPlan2 = Tuple{sourceAttr = self.ActionResourceEmployment.act_objve_ix, targetAttr =
self.ActionObjective.act_objve_ix}
let step3ReadSeq = Sequence{ step3ReadPlan1, step3ReadPlan2}
let step3 = Tuple{source = self.ActionResourceEmployment, target = self.ActionObjective, multiplicity = 1, rdSeq =
step3ReadSeq}
```

```
let constructionSequence = Sequence{self.ActionMaritimeEmployment, step1, step2, step3}
```

self.action-objective-index = self.ActionObjective.action-objective-index and self.action-id = self.ActionObjective.action-id

Context ActionResourceEmployment, inv ActionResourceEmployment_ActionObjective:

self.action-id = self.ActionResourceEmployment.action-id and self.action-resource-index = self.ActionResourceEmployment.action-resource-index and self.action-resource-employment-index = self.ActionResourceEmployment.action-resource-employment-index

Context ActionMaritimeEmployment, inv ActionMaritimeEmployment_ActionResourceEmployment:

self.action-id = self.ActionResource.action-id and self.action-resource-index = self.ActionResource.action-resource-index

Context ActionResourceEmployment, inv ActionResourceEmployment_ActionResource:

Enclosing Transactional: Action_Resource_Employment_Maritime

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Identifier Type: Aggregation	ActionMaritimeEmployment («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	ActionResourceEmployment («Wrapper»)	Navigation Constraints: ActionMaritimeEmployment_Enforced_ActionResourceEmployment}; inv: self.ActionResourceEmployment.action-resource-employment-category-code='MAREMP' Tagged Values:
Name: Type: Aggregation	ActionObjective («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ActionResource («Wrapper»)	Navigation Constraints: Tagged Values:

C.1.30 Action_Resource_Employment_Reconnaissance

The Action_Resource_Employment_Reconnaissance Transactional Artifact captures information regarding the parameters that guide the use of an action-resource that is employed in a reconnaissance role.

self.action-objective-index = self.ActionObjective.action-objective-index and self.action-id = self.ActionObjective.action-id

Context ActionResourceEmployment, inv ActionResourceEmployment_ActionObjective:

self.action-id = self.ActionResourceEmployment.action-id and self.action-resource-index = self.ActionResourceEmployment.action-resource-index and self.action-resource-employment-index = self.ActionResourceEmployment.action-resource-employment-index

Context ActionReconnaissanceEmployment, inv ActionReconnaissanceEmployment_ActionResourceEmployment:

self.action-id = self.ActionResource.action-id and self.action-resource-index = self.ActionResource.action-resource-index

Context ActionResourceEmployment, inv ActionResourceEmployment_ActionResource:

oclConstructionSequence

Context Action_Resource_Employment_Reconnaissance

```

let step1ReadPlan1 = Tuple{sourceAttr = self.ActionReconnaissanceEmployment.act_id, targetAttr =
self.ActionResourceEmployment.act_id}
let step1ReadPlan2 = Tuple{sourceAttr = self.ActionReconnaissanceEmployment.act_res_ix, targetAttr =
self.ActionResourceEmployment.act_res_ix}
let step1ReadPlan3 = Tuple{sourceAttr = self.ActionReconnaissanceEmployment.act_res_employ_ix, targetAttr =
self.ActionResourceEmployment.act_res_employ_ix}
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2, step1ReadPlan3}
let step1 = Tuple{source = self.ActionReconnaissanceEmployment, target = self.ActionResourceEmployment, multiplicity
= 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ActionResourceEmployment.act_id, targetAttr = self.ActionResource.act_id}
let step2ReadPlan2 = Tuple{sourceAttr = self.ActionResourceEmployment.act_res_ix, targetAttr =
self.ActionResource.act_res_ix}
let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2}
let step2 = Tuple{source = self.ActionResourceEmployment, target = self.ActionResource, multiplicity = 1, rdSeq =
step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ActionResourceEmployment.act_id, targetAttr = self.ActionObjective.act_id}
let step3ReadPlan2 = Tuple{sourceAttr = self.ActionResourceEmployment.act_objve_ix, targetAttr =
self.ActionObjective.act_objve_ix}
let step3ReadSeq = Sequence{ step3ReadPlan1, step3ReadPlan2}
let step3 = Tuple{source = self.ActionResourceEmployment, target = self.ActionObjective, multiplicity = 1, rdSeq =
step3ReadSeq}

let constructionSequence = Sequence{self.ActionReconnaissanceEmployment, step1, step2, step3}

```

Enclosing Transactional: Action_Resource_Employment_Reconnaissance

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

<p>Name: Type: Aggregation</p>	<p>ActionResourceEmployment («Wrapper»)</p>	<p>Navigation Constraints: ActionReconnaissanceEmployment_Enforced_ActionResourceEmployment}; inv: self.ActionResourceEmployment.action-resource-employment-category-code='RECEMP'</p> <p>Tagged Values:</p>
--	---	--

Name: Identifier Type: Aggregation	ActionReconnaissance Employment («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	ActionObjective («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ActionResource («Wrapper»)	Navigation Constraints: Tagged Values:

C.1.31 Action_Resource_Item

The Action_Resource_Item Transactional Artifact captures information regarding the resources (Object_Items) that have been specified as things executing, things being used in or allocated to, or things whose use is qualified in some way in the conduct of a specific action.

self.action-id = self.Action.action-id

Context ActionResource, inv ActionResource_Action:

self.object-item-id = self.ObjectItem.object-item-id

Context ActionResourceItem, inv ActionResourceItem_ObjectItem:

self.action-id = self.ActionResource.action-id and self.action-resource-index = self.ActionResource.action-resource-index

Context ActionResourceItem, inv ActionResourceItem_ActionResource:

oclConstructionSequence

Context Action_Resource_Item

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ActionResourceItem.obj_item_id, targetAttr = self.ObjectItem.obj_item_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ActionResourceItem, target = self.ObjectItem, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ActionResourceItem.act_id, targetAttr = self.ActionResource.act_id}
let step2ReadPlan2 = Tuple{sourceAttr = self.ActionResourceItem.act_res_ix, targetAttr = self.ActionResource.act_res_ix}
let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2}
let step2 = Tuple{source = self.ActionResourceItem, target = self.ActionResource, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.ActionResource.act_id, targetAttr = self.Action.act_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ActionResource, target = self.Action, multiplicity = 1, rdSeq = step3ReadSeq}
```

```
let step4ReadPlan1 = Tuple{sourceAttr = self.ActionResource.authorising_org_id, targetAttr =
```

```

self.Organisation_Item.org_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.ActionResource, target = self.Organisation_Item, multiplicity = 0..1, rdSeq =
step4ReadSeq}

```

```

let constructionSequence = Sequence{self.ActionResourceItem, step1, step2, step3, step4}

```

self.action-resource-authorising-organisation-id = self.Organisation_Item.Organisation.organisation-id
Context ActionResource, inv ActionResource_Organisation_Item:

Enclosing Transactional: Action_Resource_Item

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	ActionResource («Wrapper»)	Navigation Constraints: ActionResourceItem_Enforced_ActionResource: inv: self.ActionResource.action-resource-category-code='RI' Tagged Values:
Name: Type: Aggregation	Organisation_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	ActionResourceItem («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	Action («Wrapper»)	Navigation Constraints: Tagged Values:

C.1.32 Action_Resource_Type

The Action_Resource_Type Transactional Artifact captures information regarding the resources (Object_Types) that have been specified as things executing, things being used in or allocated to, or things whose use is qualified in some way in the conduct of a specific action.

self.object-type-id = self.ObjectType.object-type-id
 Context ActionResourceType, inv ActionResourceType_ObjectType:

self.action-resource-authorising-organisation-id = self.Organisation_Item.Organisation.organisation-id
 Context ActionResource, inv ActionResource_Organisation_Item:

self.action-id = self.ActionResource.action-id and self.action-resource-index = self.ActionResource.action-resource-index
 Context ActionResourceType, inv ActionResourceType_ActionResource:

self.action-id = self.Action.action-id
 Context ActionResource, inv ActionResource_Action:

oclConstructionSequence
 Context Action_Resource_Type

```

let step1ReadPlan1 = Tuple{sourceAttr = self.ActionResourceType.obj_type_id, targetAttr = self.ObjectType.obj_type_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ActionResourceType, target = self.ObjectType, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ActionResourceType.act_id, targetAttr = self.ActionResource.act_id}
let step2ReadPlan2 = Tuple{sourceAttr = self.ActionResourceType.act_res_ix, targetAttr =
self.ActionResource.act_res_ix}
let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2}
let step2 = Tuple{source = self.ActionResourceType, target = self.ActionResource, multiplicity = 1, rdSeq =
step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ActionResource.act_id, targetAttr = self.Action.act_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ActionResource, target = self.Action, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.ActionResource.authorising_org_id, targetAttr =
self.Organisation_Item.org_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.ActionResource, target = self.Organisation_Item, multiplicity = 0..1, rdSeq =
step4ReadSeq}

let constructionSequence = Sequence{self.ActionResourceType, step1, step2, step3, step4}
  
```

Enclosing Transactional: Action_Resource_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: Tagged Values:

Name: Identifier Type: Aggregation	ActionResourceType («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	ActionResource («Wrapper»)	Navigation Constraints: ActionResourceType_Enforced_ActionResource: inv: self.ActionResource.action-resource-category-code='RT' Tagged Values:
Name: Type: Aggregation	Action («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Organisation_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.1.33 ActionTask_Composite

The ActionTask_Composite Transactional Artifact captures the planning details of a specific action or activity (planned or realized), such as those typically found in plans, orders and requests. A request is a type of ActionTask normally related to the collection of reconnaissance and surveillance information and forms part of this transactional, as does the CandidateTargetList that contains the objective of the activity. The transactional encloses the Organisational_Structure Transactional Artifact to capture information about the structure of the organization or task force established to conduct the specific action or activity.

oclConstructionSequence

Context ActionTask_Composite

```

let step1ReadPlan1 = Tuple{sourceAttr = self.ActionTask.act_task_id, targetAttr = self.Action.act_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ActionTask, target = self.Action, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ActionTask.act_task_id, targetAttr = self.Request.request_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ActionTask, target = self.Request, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ActionTask.ctgtlst_id, targetAttr = self.CandidateTargetList.ctgtlst_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ActionTask, target = self.CandidateTargetList, multiplicity = 0..1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.ActionTask.org_struct_root_org_id, targetAttr =
self.Organisation_Structure.org_struct_root_org_id}
let step4ReadPlan2 = Tuple{sourceAttr = self.ActionTask.org_struct_ix, targetAttr =
self.Organisation_Structure.org_struct_ix}
let step4ReadSeq = Sequence{ step4ReadPlan1, step4ReadPlan2}
let step4 = Tuple{source = self.ActionTask, target = self.Organisation_Structure, multiplicity = 0..1, rdSeq =

```


step4ReadSeq}

let constructionSequence = Sequence{self.ActionTask, step1, step2, step3, step4}

self.candidate-target-list-id = self.CandidateTargetList.candidate-target-list-id

Context ActionTask, inv ActionTask_CandidateTargetList:

self.action-task-id = self.Request.request-id

Context ActionTask, inv ActionTask_Request:

self.action-task-id = self.Action.action-id

Context ActionTask, inv ActionTask_Action:

Enclosing Transactional: ActionTask_Composite

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Type: Aggregation	Action («Wrapper»)	Navigation Constraints: ActionTask_Enforced_Action}; inv: self.Action.action-category-code='ACTTA' Tagged Values:
Name: Type: Aggregation	Request («Wrapper»)	Navigation Constraints: ActionTask_Discriminator_Request}; inv: self.ActionTask.action-task-category-code='RQT' Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ActionTask («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True isWatchPoint = True
Name: Type: Aggregation	CandidateTargetList («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Organisation_Structure («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Candidate_Target_List («Transactional»)	Navigation Constraints: Tagged Values:

C.1.34 ActionTask_ROE

The ActionTask_ROE Transactional Artifact captures the engagement rules (mandatory guidance specified) that apply to the execution of a specific action or activity. The rules are authorized by an authorizing organization, which is also included in the transactional.

self.rule-of-engagement-id = self.RuleOfEngagement.rule-of-engagement-id

Context ActionTaskRuleOfEngagement, inv ActionTaskRuleOfEngagement_RuleOfEngagement:

self.owning-organisation-id = self.Organisation.organisation-id

Context RuleOfEngagement, inv RuleOfEngagement_Organisation:

self.action-task-id = self.ActionTask.action-task-id

Context ActionTaskRuleOfEngagement, inv ActionTaskRuleOfEngagement_ActionTask:

oclConstructionSequence

Context ActionTask_ROE

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ActionTaskRuleOfEngagement.roe_id, targetAttr = self.RuleOfEngagement.roe_id}
```

```
let step1ReadSeq = Sequence{ step1ReadPlan1}
```

```
let step1 = Tuple{source = self.ActionTaskRuleOfEngagement, target = self.RuleOfEngagement, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.RuleOfEngagement.owning_org_id, targetAttr = self.Organisation.org_id}
```

```
let step2ReadSeq = Sequence{ step2ReadPlan1}
```

```
let step2 = Tuple{source = self.RuleOfEngagement, target = self.Organisation, multiplicity = 0..1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.ActionTaskRuleOfEngagement.act_task_id, targetAttr = self.ActionTask.act_task_id}
```

```
let step3ReadSeq = Sequence{ step3ReadPlan1}
```

```
let step3 = Tuple{source = self.ActionTaskRuleOfEngagement, target = self.ActionTask, multiplicity = 1, rdSeq = step3ReadSeq}
```

```
let constructionSequence = Sequence{self.ActionTaskRuleOfEngagement, step1, step2, step3}
```

Enclosing Transactional: ActionTask_ROE

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Type: Aggregation	RuleOfEngagement («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ActionTask («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Organisation («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ActionTaskRuleOfEngagement («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True isWatchPoint = True
Name: Type: Aggregation	Organisation_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ActionTask_Composite («Transactional»)	Navigation Constraints: Tagged Values:

C.1.35 ActionTask_Status

The ActionTask_Status Transactional Artifact captures the perceived appraisal of the planning and execution progress of a specific action task as determined by the reporting organization. The transactional encloses both the ActionTask_Composite Transactional Artifact to relate the status of the action task to the action itself, and the Absolute_Reporting_Data Transactional Artifact in which information about the progress estimate is captured.

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id

Context ActionTaskStatus, inv ActionTaskStatus_Absolute_Reporting_Data:

self.action-task-id = self.ActionTask_Composite.ActionTask.action-task-id

Context ActionTaskStatus, inv ActionTaskStatus_ActionTask_Composite:

oclConstructionSequence

Context ActionTask_Status

```

let step1ReadPlan1 = Tuple{sourceAttr = self.ActionTaskStatus.act_task_id, targetAttr =
self.ActionTask_Composite.act_task_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ActionTaskStatus, target = self.ActionTask_Composite, multiplicity = 1, rdSeq =
step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ActionTaskStatus.rptd_id, targetAttr =
self.Absolute_Reporting_Data.rptd_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ActionTaskStatus, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq =
step2ReadSeq}

let constructionSequence = Sequence{self.ActionTaskStatus, step1, step2}

```

Enclosing Transactional: ActionTask_Status

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	ActionTask_Composite («Transactional»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ActionTaskStatus («Wrapper»)	Navigation Constraints: Tagged Values: isWatchPoint = TrueisIdentifier = True
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:

C.1.36 Action_Temporal_Assoc

The Action_Temporal_Association Transactional Artifact captures information regarding the temporal association (dependency) between a pair of individual actions. These provide a means to create more complex sets or sequences of activities, such as those represented by an operational plan or order. Examples of temporal associations include: starts after end of, starts after start of, ends after start of, etc.

self.action-temporal-association-subject-action-id = self.Action.action-id
Context ActionTemporalAssociation, inv ActionTemporalAssociation_Action:

oclConstructionSequence

Context Action_Temporal_Assoc

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ActionTemporalAssociation.subj_act_id, targetAttr = self.Action.act_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ActionTemporalAssociation, target = self.Action, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ActionTemporalAssociation.obj_act_id, targetAttr = self.Action.act_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ActionTemporalAssociation, target = self.Action, multiplicity = 1, rdSeq = step2ReadSeq}

let constructionSequence = Sequence{self.ActionTemporalAssociation, step1, step2}
```

self.action-temporal-association-object-action-id = self.Action.action-id

Context ActionTemporalAssociation, inv ActionTemporalAssociation_Action:

Enclosing Transactional: Action_Temporal_Assoc

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Action («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ActionTemporalAssociation («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True isWatchPoint = True

C.1.37 Associated_Target_Detail

The Associated_Target_Detail Transactional Artifact captures the minimum acceptable information to allow two instances of TargetDetail to be assigned as linked elements in a specialized relationship.

Associated_Target_Detail is a support transactional of Transactional Artifact Candidate_Target_Detail_Assoc.

Enclosing Transactional: Associated_Target_Detail

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Type: Aggregation	CandidateTargetList («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	CandidateTargetDetail («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True

C.1.38 Candidate_Target_Detail

The Candidate_Target_Detail Transactional Artifact captures information about an individual element on a CandidateTargetList (i.e. a Target). The information captured about the Target includes its specification as a unique Object_Item or Object_Type, the general class of actions intended by the nominating organization to be conducted against it, and the priority for doing so. This transactional encloses the Candidate_Target_Detail_Authorisation Transactional Artifact in order to capture the information pertaining to the organization(s) that designated the objective (target) as approved in planning battle-space activities.

self.candidate-target-list-id = self.Candidate_Target_Detail_Type.CandidateTargetDetailType.candidate-target-list-id and self.candidate-target-detail-index = self.Candidate_Target_Detail_Type.CandidateTargetDetailType.candidate-target-detail-type-index

Context CandidateTargetDetail, inv CandidateTargetDetail_Candidate_Target_Detail_Type:

self.candidate-target-list-id = self.Candidate_Target_Detail_Item.CandidateTargetDetailItem.candidate-target-list-id and self.candidate-target-detail-index = self.Candidate_Target_Detail_Item.CandidateTargetDetailItem.candidate-target-detail-item-index

Context CandidateTargetDetail, inv CandidateTargetDetail_Candidate_Target_Detail_Item:

oclConstructionSequence

Context Candidate_Target_Detail

```
let step1ReadPlan1 = Tuple{sourceAttr = self.CandidateTargetDetail.ctgtlst_id, targetAttr =
self.Candidate_Target_Detail_Item.ctgtlst_id}
let step1ReadPlan2 = Tuple{sourceAttr = self.CandidateTargetDetail.ctgtdet_ix, targetAttr =
self.Candidate_Target_Detail_Item.ctgtdet_item_ix}
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2}
let step1 = Tuple{source = self.CandidateTargetDetail, target = self.Candidate_Target_Detail_Item, multiplicity = 1, rdSeq
= step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.CandidateTargetDetail.ctgtlst_id, targetAttr =
self.Candidate_Target_Detail_Type.ctgtlst_id}
let step2ReadPlan2 = Tuple{sourceAttr = self.CandidateTargetDetail.ctgtdet_ix, targetAttr =
```

```

self.Candidate_Target_Detail_Type.ctgtdet_type_ix}
let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2}
let step2 = Tuple{source = self.CandidateTargetDetail, target = self.Candidate_Target_Detail_Type, multiplicity = 1, rdSeq
= step2ReadSeq}

let constructionSequence = Sequence{self.CandidateTargetDetail, step1, step2}

```

Enclosing Transactional: Candidate_Target_Detail

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier Type: Aggregation	CandidateTargetDetail («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Candidate_Target_Detail_Item («Transactional»)	Navigation Constraints: CandidateTargetDetail_Discriminator_Candidate_Target_Detail_Item): inv: self.CandidateTargetDetail.candidate-target-detail-category-code='CTDITM' Tagged Values:
Name: Type: Aggregation	Candidate_Target_Detail_Type («Transactional»)	Navigation Constraints: CandidateTargetDetail_Discriminator_Candidate_Target_Detail_Type): inv: self.CandidateTargetDetail.candidate-target-detail-category-code='CTDTYP' Tagged Values:
Name: Type: Aggregation	Candidate_Target_Detail_Authorisation («Transactional»)	Navigation Constraints: Tagged Values:

C.1.39 Candidate_Target_Detail_Assoc

The Candidate_Target_Detail_Assoc Transactional Artifact captures information about the relationship between a pair of elements of a CandidateTargetList (i.e., a pair of Targets). The information captured specifies the nature of the relationship; for example the two targets might be co-located.

oclConstructionSequence

Context Candidate_Target_Detail_Assoc

```

let step1ReadPlan1 = Tuple{sourceAttr = self.CandidateTargetDetailAssociation.subj_ctgtlst_id, targetAttr =
self.CandidateTargetDetail.ctgtlst_id}
let step1ReadPlan2 = Tuple{sourceAttr = self.CandidateTargetDetailAssociation.subj_ctgtdet_ix, targetAttr =
self.CandidateTargetDetail.ctgtdet_ix}
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2}
let step1 = Tuple{source = self.CandidateTargetDetailAssociation, target = self.CandidateTargetDetail, multiplicity = 2,
rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.CandidateTargetDetailAssociation.obj_ctgtlst_id, targetAttr =
self.CandidateTargetDetail.ctgtlst_id}
let step2ReadPlan2 = Tuple{sourceAttr = self.CandidateTargetDetailAssociation.obj_ctgtdet_ix, targetAttr =
self.CandidateTargetDetail.ctgtdet_ix}
let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2}
let step2 = Tuple{source = self.CandidateTargetDetailAssociation, target = self.CandidateTargetDetail, multiplicity = 2,
rdSeq = step2ReadSeq}

let constructionSequence = Sequence{self.CandidateTargetDetailAssociation, step1, step2}

```

Enclosing Transactional: Candidate_Target_Detail_Assoc

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier WatchPoint Type: Aggregation	CandidateTargetDetailAssociation («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True
Name: Type: Aggregation	CandidateTargetDetail («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Candidate_Target_Detail («Transactional»)	Navigation Constraints: Tagged Values:

Name: Type: Aggregation	Candidate_Target_List («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	CandidateTargetList («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Associated_Target_Detail («Transactional»)	Navigation Constraints: Tagged Values:

C.1.40 Candidate_Target_Detail_Authorisation

The Candidate_Target_Detail_Authorisation Transactional Artifact captures information about the designation by a competent authority of an instance of a Candidate_Target_Detail (i.e., a Target) as an approved objective in battle-space planning activities. Multiple instances of authorization may be recorded where there are different views of the desired outcome. This transactional encloses the Absolute_Reporting_Data Transactional Artifact in which information about the authorisation is captured.

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id

Context CandidateTargetDetailAuthorisation, inv CandidateTargetDetailAuthorisation_Absolute_Reporting_Data:

self.candidate-target-list-id = self.CandidateTargetDetail.candidate-target-list-id and self.candidate-target-detail-index = self.CandidateTargetDetail.candidate-target-detail-index

Context CandidateTargetDetailAuthorisation, inv CandidateTargetDetailAuthorisation_CandidateTargetDetail:

oclConstructionSequence

Context Candidate_Target_Detail_Authorisation

```
let step1ReadPlan1 = Tuple{sourceAttr = self.CandidateTargetDetailAuthorisation.rptd_id, targetAttr =
self.Absolute_Reporting_Data.rptd_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.CandidateTargetDetailAuthorisation, target = self.Absolute_Reporting_Data, multiplicity =
1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.CandidateTargetDetailAuthorisation.ctgtlst_id, targetAttr =
self.CandidateTargetDetail.ctgtlst_id}
let step2ReadPlan2 = Tuple{sourceAttr = self.CandidateTargetDetailAuthorisation.ctgtdet_ix, targetAttr =
self.CandidateTargetDetail.ctgtdet_ix}
let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2}
let step2 = Tuple{source = self.CandidateTargetDetailAuthorisation, target = self.CandidateTargetDetail, multiplicity = 1,
rdSeq = step2ReadSeq}
```

```
let constructionSequence = Sequence{self.CandidateTargetDetailAuthorisation, step1, step2}
```

Enclosing Transactional: Candidate_Target_Detail_Authorisation

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier WatchPoint Type: Aggregation	CandidateTargetDetailAuthorisation («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True isWatchPoint = True
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	CandidateTargetDetail («Wrapper»)	Navigation Constraints: Tagged Values:

C.1.41 Candidate_Target_Detail_Item

The Candidate_Target_Detail_Item Transactional Artifact captures information about an instance of a Candidate_Target_Detail (i.e., a Target) that is an object-item, enabling the specific instance to be identified as such.

self.object-item-id = self.ObjectItem.object-item-id

Context CandidateTargetDetailItem, inv CandidateTargetDetailItem_ObjectItem:

self.candidate-target-list-id = self.CandidateTargetDetail.candidate-target-list-id and self.candidate-target-detail-item-index = self.CandidateTargetDetail.candidate-target-detail-index

Context CandidateTargetDetailItem, inv CandidateTargetDetailItem_CandidateTargetDetail:

oclConstructionSequence

Context Candidate_Target_Detail_Item

```
let step1ReadPlan1 = Tuple{sourceAttr = self.CandidateTargetDetailItem.obj_item_id, targetAttr = self.ObjectItem.obj_item_id}
```

```
let step1ReadSeq = Sequence{ step1ReadPlan1 }
```

```
let step1 = Tuple{source = self.CandidateTargetDetailItem, target = self.ObjectItem, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.CandidateTargetDetailItem.ctgtlst_id, targetAttr = self.CandidateTargetDetail.ctgtlst_id}
```

```
let step2ReadPlan2 = Tuple{sourceAttr = self.CandidateTargetDetailItem.ctgtdet_item_ix, targetAttr = self.CandidateTargetDetail.ctgtdet_ix}
```

```
let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2 }
```

```
let step2 = Tuple{source = self.CandidateTargetDetailItem, target = self.CandidateTargetDetail, multiplicity = 1, rdSeq =
```

```
step2ReadSeq}
```

```
let constructionSequence = Sequence{self.CandidateTargetDetailItem, step1, step2}
```

Enclosing Transactional: Candidate_Target_Detail_Item

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Type: Aggregation	CandidateTargetDetail («Wrapper»)	Navigation Constraints: CandidateTargetDetailItem_Enforced_CandidateTargetDetail: inv: self.CandidateTargetDetail.candidate-target-detail- category-code='CTDITM' Tagged Values:
Name: Identifier Type: Aggregation	CandidateTargetDetailItem («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Tagged Values:

C.1.42 Candidate_Target_Detail_Type

The Candidate_Target_Detail_Type Transactional Artifact captures information about an instance of a Candidate_Target_Detail (i.e., a Target) that is an object-type, enabling the specific instance to be identified as such.

self.object-type-id = self.ObjectType.object-type-id

Context CandidateTargetDetailType, inv CandidateTargetDetailType_ObjectType:

self.candidate-target-list-id = self.CandidateTargetDetail.candidate-target-list-id and self.candidate-target-detail-type-index = self.CandidateTargetDetail.candidate-target-detail-index

Context CandidateTargetDetailType, inv CandidateTargetDetailType_CandidateTargetDetail:

oclConstructionSequence

Context Candidate_Target_Detail_Type

```
let step1ReadPlan1 = Tuple{sourceAttr = self.CandidateTargetDetailType.obj_type_id, targetAttr =
self.ObjectType.obj_type_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.CandidateTargetDetailType, target = self.ObjectType, multiplicity = 1, rdSeq =
```

```

step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.CandidateTargetDetailType.ctgtlst_id, targetAttr =
self.CandidateTargetDetail.ctgtlst_id}
let step2ReadPlan2 = Tuple{sourceAttr = self.CandidateTargetDetailType.ctgtdet_type_ix, targetAttr =
self.CandidateTargetDetail.ctgtdet_ix}
let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2}
let step2 = Tuple{source = self.CandidateTargetDetailType, target = self.CandidateTargetDetail, multiplicity = 1, rdSeq =
step2ReadSeq}

let constructionSequence = Sequence{self.CandidateTargetDetailType, step1, step2}

```

Enclosing Transactional: Candidate_Target_Detail_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	CandidateTargetDetail («Wrapper»)	Navigation Constraints: CandidateTargetDetailType_Enforced_CandidateTargetDetail}: inv: self.CandidateTargetDetail.candidate-target-detail-category-code='CTDTYP' Tagged Values:
Name: Identifier Type: Aggregation	CandidateTargetDetailType («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: Tagged Values:

C.1.43 Candidate_Target_List

The Candidate_Target_List Transactional Artifact captures information about the set of battle-space objects or types that have potential value for destruction or exploitation (i.e., potential targets) nominated by competent authority for consideration in battle-space planning activities. The transactional enclosed three supporting Transactional Artifacts. The first is Candidate_Target_Detail (normally there are multiple instances of this), each of which captures information about an individual element (i.e. the potential target) on the list. The second is Absolute_Reporting_Data in which information about the list creation is captured, and the third is Candidate_Target_List_Authorisation, which captures information about the approval(s) of the list as a source of objectives in battle-space planning activities.

oclConstructionSequence

Context Candidate_Target_List

```
let step1ReadPlan1 = Tuple{sourceAttr = self.CandidateTargetList.ctgtlst_id, targetAttr = self.Candidate_Target_Detail.ctgtlst_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.CandidateTargetList, target = self.Candidate_Target_Detail, multiplicity = 1..*, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.CandidateTargetList.rptd_id, targetAttr = self.Absolute_Reporting_Data.rptd_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.CandidateTargetList, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let constructionSequence = Sequence{self.CandidateTargetList, step1, step2}
```

self.candidate-target-list-id = self.Candidate_Target_Detail.CandidateTargetDetail.candidate-target-list-id

Context CandidateTargetList, inv CandidateTargetList_Candidate_Target_Detail:

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id

Context CandidateTargetList, inv CandidateTargetList_Absolute_Reporting_Data:

Enclosing Transactional: Candidate_Target_List

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Candidate_Target_Detail («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Candidate_Target_List_Authorisation («Transactional»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	CandidateTargetList («Wrapper»)	Navigation Constraints: Tagged Values: isWatchPoint = TrueisIdentifier = True
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:

C.1.44 Candidate_Target_List_Assoc

The Candidate_Target_List_Assoc Transactional Artifact captures information about the relationship between a pair of CandidateTargetList. The information captured specifies the nature of the relationship; for example one of the lists might incorporate parts of or replace the other.

oclConstructionSequence

Context Candidate_Target_List_Assoc

```

let step1ReadPlan1 = Tuple{sourceAttr = self.CandidateTargetListAssociation.obj_ctgtlst_id, targetAttr =
self.CandidateTargetList.ctgtlst_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.CandidateTargetListAssociation, target = self.CandidateTargetList, multiplicity = 2, rdSeq =
step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.CandidateTargetListAssociation.subj_ctgtlst_id, targetAttr =
self.CandidateTargetList.ctgtlst_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.CandidateTargetListAssociation, target = self.CandidateTargetList, multiplicity = 2, rdSeq =
step2ReadSeq}

let constructionSequence = Sequence{self.CandidateTargetListAssociation, step1, step2}

```

self.candidate-target-list-association-subject-candidate-target-list-id = self.CandidateTargetList.candidate-target-list-id

Context CandidateTargetListAssociation, inv CandidateTargetListAssociation_CandidateTargetList:

self.candidate-target-list-association-object-candidate-target-list-id = self.CandidateTargetList.candidate-target-list-id

Context CandidateTargetListAssociation, inv CandidateTargetListAssociation_CandidateTargetList:

Enclosing Transactional: Candidate_Target_List_Assoc

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	CandidateTargetList («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	CandidateTargetListAssociation («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True

Name: Type: Aggregation	Candidate_Target_List («Transactional»)	Navigation Constraints: Tagged Values:
--	--	---

C.1.45 Candidate_Target_List_Authorisation

The Candidate_Target_List_Authorisation Transactional Artifact captures information about the designation by a competent authority of a CandidateTargetList as an approved source of objectives in battle-space planning activities. Multiple instances of authorization may be recorded where there are different views of the functional needs among the authorizers. This transactional encloses the Absolute_Reporting_Data Transactional Artifact in which information about the authorisation is captured.

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id
Context CandidateTargetListAuthorisation, inv CandidateTargetListAuthorisation_Absolute_Reporting_Data:

self.candidate-target-list-id = self.CandidateTargetList.candidate-target-list-id
Context CandidateTargetListAuthorisation, inv CandidateTargetListAuthorisation_CandidateTargetList:

oclConstructionSequence

Context Candidate_Target_List_Authorisation

```
let step1ReadPlan1 = Tuple{sourceAttr = self.CandidateTargetListAuthorisation.rptd_id, targetAttr =
self.Absolute_Reporting_Data.rptd_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.CandidateTargetListAuthorisation, target = self.Absolute_Reporting_Data, multiplicity = 1,
rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.CandidateTargetListAuthorisation.ctgtlst_id, targetAttr =
self.CandidateTargetList.ctgtlst_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.CandidateTargetListAuthorisation, target = self.CandidateTargetList, multiplicity = 1, rdSeq
= step2ReadSeq}

let constructionSequence = Sequence{self.CandidateTargetListAuthorisation, step1, step2}
```

Enclosing Transactional: Candidate_Target_List_Authorisation

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Identifier WatchPoint Type: Aggregation	CandidateTargetListAuthorisation («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Candidate_Target_List («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	CandidateTargetList («Wrapper»)	Navigation Constraints: Tagged Values:

C.1.46 Request_Answer

The Request_Answer Transactional Artifact captures information about the nature of a response to a specific Request. Because the answer to a Request may consist of a number of items of dynamic data each of which is linked to a Reporting Data instance, an associative entity is included to identify the items that constitute a response. This transactional also encloses two instances of the Absolute_Reporting_Data Transactional Artifact in which information about both the Request_Answer report and the cited dynamic data reports are captured.

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id
Context RequestAnswer, inv RequestAnswer_Absolute_Reporting_Data:

self.request-id = self.RequestAnswerElement.request-id and self.request-answer-index = self.RequestAnswerElement.request-answer-index
Context RequestAnswer, inv RequestAnswer_RequestAnswerElement:

self.request-id = self.ActionTask_Composite.ActionTask.action-task-id
Context Request, inv Request_ActionTask_Composite:

self.comprising-reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id
Context RequestAnswerElement, inv RequestAnswerElement_Absolute_Reporting_Data:

oclConstructionSequence
Context Request_Answer

```
let step1ReadPlan1 = Tuple{sourceAttr = self.RequestAnswer.request_id, targetAttr =
self.RequestAnswerElement.request_id}
let step1ReadPlan2 = Tuple{sourceAttr = self.RequestAnswer.request_ans_ix, targetAttr =
self.RequestAnswerElement.request_ans_ix}
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2}
```



```

let step1 = Tuple{source = self.RequestAnswer, target = self.RequestAnswerElement, multiplicity = 1, rdSeq =
step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.RequestAnswerElement.comprising_rptd_id, targetAttr =
self.Absolute_Reporting_Data.rptd_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.RequestAnswerElement, target = self.Absolute_Reporting_Data, multiplicity = 2, rdSeq =
step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.RequestAnswer.request_id, targetAttr = self.Request.request_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.RequestAnswer, target = self.Request, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.Request.request_id, targetAttr = self.ActionTask_Composite.act_task_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.Request, target = self.ActionTask_Composite, multiplicity = 1, rdSeq = step4ReadSeq}

let step5ReadPlan1 = Tuple{sourceAttr = self.RequestAnswer.rptd_id, targetAttr = self.Absolute_Reporting_Data.rptd_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.RequestAnswer, target = self.Absolute_Reporting_Data, multiplicity = 2, rdSeq =
step5ReadSeq}

let constructionSequence = Sequence{self.RequestAnswer, step1, step2, step3, step4, step5}

```

self.request-id = self.Request.request-id

Context RequestAnswer, inv RequestAnswer_Request:

Enclosing Transactional: Request_Answer

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier WatchPoint Type: Aggregation	RequestAnswer («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True
Name: Type: Aggregation	Request («Wrapper»)	Navigation Constraints: ActionTask_Composite_Enforced_Request}: inv: self.ActionTask.action-task-category-code='RQT' Tagged Values:
Name: Type: Aggregation	RequestAnswerElement («Wrapper»)	Navigation Constraints: Tagged Values:

Name: Type: Aggregation	ActionTask_Composite («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:

C.2 Capability

C.2.1 Capability_Composite

The Capability_Composite Transactional Artifact captures information about generic capabilities (the potential ability to do work, perform a function or mission, achieve an objective or provide a service) that can be ascribed to the types of objects in the battle-space.

self.capability-id = self.FireCapability.fire-capability-id
Context Capability, inv Capability_FireCapability:

self.facility-type-id = self.FacilityType.facility-type-id
Context EngineeringCapability, inv EngineeringCapability_FacilityType:

self.electronic-equipment-type-id = self.EquipmentType.equipment-type-id
Context ElectronicEquipmentType, inv ElectronicEquipmentType_EquipmentType:

self.electronic-equipment-type-id = self.ElectronicEquipmentType.electronic-equipment-type-id
Context TransmissionCapability, inv TransmissionCapability_ElectronicEquipmentType:

self.capability-id = self.TransmissionCapability.transmission-capability-id
Context Capability, inv Capability_TransmissionCapability:

self.capability-id = self.SurveillanceCapability.surveillance-capability-id
Context Capability, inv Capability_SurveillanceCapability:

self.capability-id = self.SupportCapability.support-capability-id
Context Capability, inv Capability_SupportCapability:

self.capability-id = self.StorageCapability.storage-capability-id
Context Capability, inv Capability_StorageCapability:

self.capability-id = self.OperationalCapability.operational-capability-id
Context Capability, inv Capability_OperationalCapability:

self.capability-id = self.MobilityCapability.mobility-capability-id
Context Capability, inv Capability_MobilityCapability:

self.capability-id = self.HandlingCapability.handling-capability-id
Context Capability, inv Capability_HandlingCapability:

self.materiel-type-id = self.EquipmentType.equipment-type-id
Context MaterielType, inv MaterielType_EquipmentType:

self.capability-id = self.EngineeringCapability.engineering-capability-id
Context Capability, inv Capability_EngineeringCapability:

self.ammunition-type-id = self.ConsumableMaterielType.consumable-materiel-type-id
Context AmmunitionType, inv AmmunitionType_ConsumableMaterielType:

self.ammunition-type-id = self.AmmunitionType.ammunition-type-id
Context FireCapability, inv FireCapability_AmmunitionType:

oclConstructionSequence

Context Capability_Composite

```
let step1ReadPlan1 = Tuple{sourceAttr = self.Capability.capab_id, targetAttr = self.HandlingCapability.hndl_capab_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.Capability, target = self.HandlingCapability, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.Capability.capab_id, targetAttr = self.SupportCapability.supp_capab_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.Capability, target = self.SupportCapability, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.Capability.capab_id, targetAttr = self.FireCapability.fire_capab_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.Capability, target = self.FireCapability, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.FireCapability.ammo_type_id, targetAttr =
self.AmmunitionType.ammo_type_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.FireCapability, target = self.AmmunitionType, multiplicity = 0..1, rdSeq = step4ReadSeq}

let step5ReadPlan1 = Tuple{sourceAttr = self.AmmunitionType.ammo_type_id, targetAttr =
self.ConsumableMaterielType.cons_mat_type_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.AmmunitionType, target = self.ConsumableMaterielType, multiplicity = 0..1, rdSeq =
step5ReadSeq}

let step6ReadPlan1 = Tuple{sourceAttr = self.ConsumableMaterielType.cons_mat_type_id, targetAttr =
self.MaterielType.mat_type_id}
```

```

let step6ReadSeq = Sequence{ step6ReadPlan1}
let step6 = Tuple{source = self.ConsumableMaterielType, target = self.MaterielType, multiplicity = 0..1, rdSeq =
step6ReadSeq}

let step7ReadPlan1 = Tuple{sourceAttr = self.MaterielType.mat_type_id, targetAttr = self.EquipmentType.eqpt_type_id}
let step7ReadSeq = Sequence{ step7ReadPlan1}
let step7 = Tuple{source = self.MaterielType, target = self.EquipmentType, multiplicity = 0..1, rdSeq = step7ReadSeq}

let step8ReadPlan1 = Tuple{sourceAttr = self.EquipmentType.eqpt_type_id, targetAttr =
self.ElectronicEquipmentType.elctrc_eqpt_type_id}
let step8ReadSeq = Sequence{ step8ReadPlan1}
let step8 = Tuple{source = self.EquipmentType, target = self.ElectronicEquipmentType, multiplicity = 0..1, rdSeq =
step8ReadSeq}

let step9ReadPlan1 = Tuple{sourceAttr = self.ElectronicEquipmentType.elctrc_eqpt_type_id, targetAttr =
self.TransmissionCapability.elctrc_eqpt_type_id}
let step9ReadSeq = Sequence{ step9ReadPlan1}
let step9 = Tuple{source = self.ElectronicEquipmentType, target = self.TransmissionCapability, multiplicity = 1, rdSeq =
step9ReadSeq}

let step10ReadPlan1 = Tuple{sourceAttr = self.MaterielType.mat_type_id, targetAttr = self.ObjectType.obj_type_id}
let step10ReadSeq = Sequence{ step10ReadPlan1}
let step10 = Tuple{source = self.MaterielType, target = self.ObjectType, multiplicity = 0..1, rdSeq = step10ReadSeq}

let step11ReadPlan1 = Tuple{sourceAttr = self.ObjectType.obj_type_id, targetAttr = self.StorageCapability.obj_type_id}
let step11ReadSeq = Sequence{ step11ReadPlan1}
let step11 = Tuple{source = self.ObjectType, target = self.StorageCapability, multiplicity = 1, rdSeq = step11ReadSeq}

let step12ReadPlan1 = Tuple{sourceAttr = self.ObjectType.obj_type_id, targetAttr = self.FacilityType.fac_type_id}
let step12ReadSeq = Sequence{ step12ReadPlan1}
let step12 = Tuple{source = self.ObjectType, target = self.FacilityType, multiplicity = 0..1, rdSeq = step12ReadSeq}

let step13ReadPlan1 = Tuple{sourceAttr = self.FacilityType.fac_type_id, targetAttr =
self.EngineeringCapability.fac_type_id}
let step13ReadSeq = Sequence{ step13ReadPlan1}
let step13 = Tuple{source = self.FacilityType, target = self.EngineeringCapability, multiplicity = 1, rdSeq =
step13ReadSeq}

let step14ReadPlan1 = Tuple{sourceAttr = self.Capability.capab_id, targetAttr = self.EngineeringCapability.eng_capab_id}
let step14ReadSeq = Sequence{ step14ReadPlan1}
let step14 = Tuple{source = self.Capability, target = self.EngineeringCapability, multiplicity = 1, rdSeq = step14ReadSeq}

let step15ReadPlan1 = Tuple{sourceAttr = self.Capability.capab_id, targetAttr = self.StorageCapability.storage_capab_id}
let step15ReadSeq = Sequence{ step15ReadPlan1}
let step15 = Tuple{source = self.Capability, target = self.StorageCapability, multiplicity = 1, rdSeq = step15ReadSeq}

let step16ReadPlan1 = Tuple{sourceAttr = self.Capability.capab_id, targetAttr =
self.OperationalCapability.operat_capab_id}
let step16ReadSeq = Sequence{ step16ReadPlan1}
let step16 = Tuple{source = self.Capability, target = self.OperationalCapability, multiplicity = 1, rdSeq = step16ReadSeq}

let step17ReadPlan1 = Tuple{sourceAttr = self.Capability.capab_id, targetAttr =
self.TransmissionCapability.trnsm_capab_id}
let step17ReadSeq = Sequence{ step17ReadPlan1}
let step17 = Tuple{source = self.Capability, target = self.TransmissionCapability, multiplicity = 1, rdSeq = step17ReadSeq}

```

```

let step18ReadPlan1 = Tuple{sourceAttr = self.Capability.capab_id, targetAttr = self.MobilityCapability.mob_capab_id}
let step18ReadSeq = Sequence{ step18ReadPlan1}
let step18 = Tuple{source = self.Capability, target = self.MobilityCapability, multiplicity = 1, rdSeq = step18ReadSeq}

let step19ReadPlan1 = Tuple{sourceAttr = self.Capability.capab_id, targetAttr =
self.MaintenanceCapability.mnt_capab_id}
let step19ReadSeq = Sequence{ step19ReadPlan1}
let step19 = Tuple{source = self.Capability, target = self.MaintenanceCapability, multiplicity = 1, rdSeq = step19ReadSeq}

let step20ReadPlan1 = Tuple{sourceAttr = self.Capability.capab_id, targetAttr =
self.SurveillanceCapability.surv_capab_id}
let step20ReadSeq = Sequence{ step20ReadPlan1}
let step20 = Tuple{source = self.Capability, target = self.SurveillanceCapability, multiplicity = 1, rdSeq = step20ReadSeq}

let constructionSequence = Sequence{self.Capability, step1, step2, step3, step4, step5, step6, step7, step8, step9,
step10, step11, step12, step13, step14, step15, step16, step17, step18, step19, step20}

```

self.capability-id = self.MaintenanceCapability.maintenance-capability-id
Context Capability, inv Capability_MaintenanceCapability:

self.facility-type-id = self.ObjectType.object-type-id
Context FacilityType, inv FacilityType_ObjectType:

self.materiel-type-id = self.ConsumableMaterielType.consumable-materiel-type-id
Context MaterielType, inv MaterielType_ConsumableMaterielType:

self.object-type-id = self.ObjectType.object-type-id
Context StorageCapability, inv StorageCapability_ObjectType:

self.object-type-id = self.MaterielType.materiel-type-id
Context ObjectType, inv ObjectType_MaterielType:

Enclosing Transactional: Capability_Composite

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Type: Aggregation	FacilityType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	MaterielType («Wrapper»)	Navigation Constraints: Tagged Values:

Name: Type: Aggregation	TransmissionCapability («Wrapper»)	Navigation Constraints: Capability_Discriminator_TransmissionCapability}; inv: self.Capability.capability-category-code='TRANSM' Tagged Values:
Name: Type: Aggregation	MobilityCapability («Wrapper»)	Navigation Constraints: Capability_Discriminator_MobilityCapability}; inv: self.Capability.capability-category-code='MOBL' Tagged Values:
Name: Type: Aggregation	SurveillanceCapability («Wrapper»)	Navigation Constraints: Capability_Discriminator_SurveillanceCapability}; inv: self.Capability.capability-category-code='SURV' Tagged Values:
Name: Type: Aggregation	AmmunitionType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ElectronicEquipmentType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ConsumableMaterielType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	MaintenanceCapability («Wrapper»)	Navigation Constraints: Capability_Discriminator_MaintenanceCapability}; inv: self.Capability.capability-category-code='MAIN' Tagged Values:
Name: Type: Aggregation	EngineeringCapability («Wrapper»)	Navigation Constraints: Capability_Discriminator_EngineeringCapability}; inv: self.Capability.capability-category-code='ENGI' Tagged Values:
Name: Type: Aggregation	FireCapability («Wrapper»)	Navigation Constraints: Capability_Discriminator_FireCapability}; inv: self.Capability.capability-category-code='FIRE' Tagged Values:
Name: Type: Aggregation	SupportCapability («Wrapper»)	Navigation Constraints: Capability_Discriminator_SupportCapability}; inv: self.Capability.capability-category-code='SUPPRT' Tagged Values:

Name: Type: Aggregation	StorageCapability («Wrapper»)	Navigation Constraints: Capability_Discriminator_StorageCapability}: inv: self.Capability.capability-category-code='STOR' Tagged Values:
Name: Type: Aggregation	HandlingCapability («Wrapper»)	Navigation Constraints: Capability_Discriminator_HandlingCapability}: inv: self.Capability.capability-category-code='HNDLNG' Tagged Values:
Name: Type: Aggregation	OperationalCapability («Wrapper»)	Navigation Constraints: Capability_Discriminator_OperationalCapability}: inv: self.Capability.capability-category-code='OPERAT' Tagged Values:
Name: Type: Aggregation	EquipmentType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	Capability («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	StorageCapability_Type («Transactional»)	Navigation Constraints: Capability_Discriminator_StorageCapability_Type}: inv: self.Capability.capability-category-code='STOR' Tagged Values:
Name: Type: Aggregation	TransmissionCapability_Type («Transactional»)	Navigation Constraints: Capability_Discriminator_TransmissionCapability_Type}: inv: self.Capability.capability-category-code='TRANSM' Tagged Values:
Name: Type: Aggregation	FireCapability_Type («Transactional»)	Navigation Constraints: Capability_Discriminator_FireCapability_Type}: inv: self.Capability.capability-category-code='FIRE' Tagged Values:
Name: Type: Aggregation	EngineeringCapability_Type («Transactional»)	Navigation Constraints: Capability_Discriminator_EngineeringCapability_Type}: inv: self.Capability.capability-category-code='ENGI' Tagged Values:

C.2.2 Capability_Reference_Assoc

The Capability_Reference_Assoc Transactional Artifact captures information about the nature of the association between a specific capability and a specific reference. The domain values are: is amplified by, is defined in, and is described by. Because the reference information may have a security classification, this information is also included in this transactional.

self.security-classification-id = self.SecurityClassification.security-classification-id
Context Reference, inv Reference_SecurityClassification:

self.reference-id = self.Reference.reference-id
Context CapabilityReferenceAssociation, inv CapabilityReferenceAssociation_Reference:

self.capability-id = self.Capability.capability-id
Context CapabilityReferenceAssociation, inv CapabilityReferenceAssociation_Capability:

oclConstructionSequence

Context Capability_Reference_Assoc

```
let step1ReadPlan1 = Tuple{sourceAttr = self.CapabilityReferenceAssociation.ref_id, targetAttr = self.Reference.ref_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.CapabilityReferenceAssociation, target = self.Reference, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.Reference.security_clsfc_id, targetAttr = self.SecurityClassification.security_clsfc_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.Reference, target = self.SecurityClassification, multiplicity = 0..1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.CapabilityReferenceAssociation.capab_id, targetAttr = self.Capability.capab_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.CapabilityReferenceAssociation, target = self.Capability, multiplicity = 1, rdSeq = step3ReadSeq}
```

```
let constructionSequence = Sequence{self.CapabilityReferenceAssociation, step1, step2, step3}
```

Enclosing Transactional: Capability_Reference_Assoc

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Reference («Wrapper»)	Navigation Constraints: Tagged Values:

Name: Type: Aggregation	SecurityClassification («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Capability («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	CapabilityReferenceAssociation («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True isWatchPoint = True

C.2.3 EngineeringCapability_Type

The EngineeringCapability_Type Transactional Artifact captures information about engineering capabilities that can be ascribed to the types of objects in the operational space. EngineeringCapability_Type is a support transactional to CapabilityComposite.

Enclosing Transactional: EngineeringCapability_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Identifier Type: Aggregation	EngineeringCapability («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	FacilityType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: FacilityType_Enforced_ObjectType}; inv: self.ObjectType.object-type-category-code='FA' Tagged Values:
Name: Type: Aggregation	Capability («Wrapper»)	Navigation Constraints: EngineeringCapability_Enforced_Capability}; inv: self.Capability.capability-category-code='ENGI' Tagged Values:

C.2.4 FireCapability_Type

The FireCapability_Type Transactional Artifact captures information about fire capabilities that can be ascribed to the types of objects in the operational space. EngineeringCapability_Type is a support transactional to CapabilityComposite.

Enclosing Transactional: FireCapability_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Type: Aggregation	MaterielType («Wrapper»)	Navigation Constraints: ConsumableMaterielType_Enforced_MaterielType}; inv: self.MaterielType.materiel-type-category-code='CM' Tagged Values:
Name: Type: Aggregation	ConsumableMaterielType («Wrapper»)	Navigation Constraints: AmmunitionType_Enforced_ConsumableMaterialType}; inv: self.ConsumableMaterielType.consumable-materiel-type-category-code='AMMO' Tagged Values:
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: MaterielType_Enforced_ObjectType}; inv: self.ObjectType.object-type-category-code='MA' Tagged Values:
Name: Type: Aggregation	Capability («Wrapper»)	Navigation Constraints: FireCapability_Enforced_Capability}; inv: self.Capability.capability-category-code='FIRE' Tagged Values:
Name: Identifier Type: Aggregation	FireCapability («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	AmmunitionType («Wrapper»)	Navigation Constraints: Tagged Values:

C.2.5 StorageCapability_Type

The StorageCapability_Type Transactional Artifact captures information about storage capabilities that can be ascribed to the types of objects in the operational space. StorageCapability_Type is a support transactional to CapabilityComposite.

Enclosing Transactional: StorageCapability_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Capability («Wrapper»)	Navigation Constraints: StorageCapability_Enforced_Capability: inv: self.Capability.capability-category-code='STOR' Tagged Values:
Name: Identifier Type: Aggregation	StorageCapability («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True

C.2.6 TransmissionCapability_Type

The TransmissionCapability_Type Transactional Artifact captures information about storage capabilities that can be ascribed to the types of objects in the operational space. TransmissionCapability_Type is a support transactional to CapabilityComposite.

Enclosing Transactional: TransmissionCapability_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: MaterielType_Enforced_ObjectType: inv: self.ObjectType.object-type-category-code='MA' Tagged Values:
--	------------------------	---

Name: Type: Aggregation	MaterielType («Wrapper»)	Navigation Constraints: EquipmentType_Enforced_MaterielType}: inv: self.MaterielType.materiel-type-category-code='EQ' Tagged Values:
Name: Type: Aggregation	EquipmentType («Wrapper»)	Navigation Constraints: EquipmentType_Enforced_ElectronicEquipmentType}: inv: self.EquipmentType.equipment-type-category-code='ELCTRN' Tagged Values:
Name: Type: Aggregation	ElectronicEquipmentType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Capability («Wrapper»)	Navigation Constraints: TransmissionCapability_Enforced_Capability}: inv: self.Capability.capability-category-code='TRANSM' Tagged Values:
Name: Identifier Type: Aggregation	TransmissionCapability («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True

C.3 Context

C.3.1 Context_Assessment

The Context_Assessment Transactional Artifact captures information about the appraisal by a specific organization regarding the information that is referenced by a specific context. This transactional encloses the Absolute_Reporting_Data Transactional Artifact in which information about the assessment is captured.

```
self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id
Context ContextAssessment, inv ContextAssessment_Absolute_Reporting_Data:
```

oclConstructionSequence

```
Context Context_Assessment
```

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ContextAssessment.rptd_id, targetAttr =
self.Absolute_Reporting_Data.rptd_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ContextAssessment, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq =
step1ReadSeq}
```

```
let constructionSequence = Sequence{self.ContextAssessment, step1}
```

Enclosing Transactional: Context_Assessment

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Identifier WatchPoint Type: Aggregation	ContextAssessment («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Context_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.3.2 Context_Context_Assoc_Status

The Context_Context_Assoc_Status Transactional Artifact captures information about the perceived state of a context association as determined by the establishing organization. The domain values for a relationship between a pair of contexts are: is next after, is part of, is sub-context of, supersedes, and supplements.

self.context-association-subject-context-id = self.ContextAssociation.context-association-subject-context-id and self.context-association-object-context-id = self.ContextAssociation.context-association-object-context-id
Context ContextAssociationStatus, inv ContextAssociationStatus_ContextAssociation:

self.context-association-object-context-id = self.Context.context-id
Context ContextAssociation, inv ContextAssociation_Context:

self.context-association-subject-context-id = self.Context.context-id
Context ContextAssociation, inv ContextAssociation_Context:

oclConstructionSequence

Context Context_Context_Assoc_Status

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ContextAssociationStatus.estblng_org_id, targetAttr = self.Organisation.org_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ContextAssociationStatus, target = self.Organisation, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ContextAssociationStatus.subj_ctxtxt_id, targetAttr = self.ContextAssociation.subj_ctxtxt_id}
let step2ReadPlan2 = Tuple{sourceAttr = self.ContextAssociationStatus.obj_ctxtxt_id, targetAttr = self.ContextAssociation.obj_ctxtxt_id}
let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2}
let step2 = Tuple{source = self.ContextAssociationStatus, target = self.ContextAssociation, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.ContextAssociation.subj_ctxtxt_id, targetAttr = self.Context ctxtxt_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ContextAssociation, target = self.Context, multiplicity = 2, rdSeq = step3ReadSeq}
```

```
let step4ReadPlan1 = Tuple{sourceAttr = self.ContextAssociation.obj_ctxtxt_id, targetAttr = self.Context ctxtxt_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.ContextAssociation, target = self.Context, multiplicity = 2, rdSeq = step4ReadSeq}
```

```
let constructionSequence = Sequence{self.ContextAssociationStatus, step1, step2, step3, step4}
```

self.context-association-status-establishing-organisation-id = self.Organisation.organisation-id
Context ContextAssociationStatus, inv ContextAssociationStatus_Organisation:

Enclosing Transactional: Context_Context_Assoc_Status

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Organisation («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Context («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ContextAssociationStatus («Wrapper»)	Navigation Constraints: Tagged Values: isWatchPoint = TrueisIdentifier = True
Name: Type: Aggregation	ContextAssociation («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Organisation_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Context_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.3.3 Context_Element

The Context_Element Transactional Artifact captures information about data that are to be associated with an instance of a context. A context is built primarily through indirect reference to information via Reporting Data; in fact, an instance of context is essentially a collection of Reporting Data instances. This transactional encloses two support transactionals; Context_Element_Reporting_Data_Item and Context_Element_Status that together define the context element.

self.reporting-data-id = self.Context_Element_Reporting_Data_Item.ReportingData.reporting-data-id
Context ContextElement, inv ContextElement_Context_Element_Reporting_Data_Item:

self.context-id = self.Context_Element_Status.ContextElementStatus.context-id and self.context-element-index = self.Context_Element_Status.ContextElementStatus.context-element-index
Context ContextElement, inv ContextElement_Context_Element_Status:

self.context-id = self.Context.context-id
 Context ContextElement, inv ContextElement_Context:

oclConstructionSequence
 Context Context_Element

```

let step1ReadPlan1 = Tuple{sourceAttr = self.ContextElement.contxt_id, targetAttr = self.Context.contxt_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ContextElement, target = self.Context, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ContextElement.contxt_id, targetAttr =
self.Context_Element_Status.contxt_id}
let step2ReadPlan2 = Tuple{sourceAttr = self.ContextElement.contxt_elmt_ix, targetAttr =
self.Context_Element_Status.contxt_elmt_ix}
let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2}
let step2 = Tuple{source = self.ContextElement, target = self.Context_Element_Status, multiplicity = 1..*, rdSeq =
step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ContextElement.rptd_id, targetAttr =
self.Context_Element_Reporting_Data_Item.rptd_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ContextElement, target = self.Context_Element_Reporting_Data_Item, multiplicity = 1,
rdSeq = step3ReadSeq}

let constructionSequence = Sequence{self.ContextElement, step1, step2, step3}

```

Enclosing Transactional: Context_Element

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Identifier WatchPoint Type: Aggregation	ContextElement («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Context («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Context_Element_Reporting_Data_Item («Transactional»)	Navigation Constraints: Tagged Values:

Name: Type: Aggregation	Context_Element_Status («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Context_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.3.4 Context_Element_Reporting_Data_Item

The Context_Element_Reporting_Data_Item is a support transactional used in the Context_Element Transactional Artifact. It captures information about the instances of Reporting Data that together comprise a specific context. This information includes the reporting organization and any references associated with the Reporting Data.

self.reporting-data-reporting-organisation-id = self.Organisation.organisation-id
Context ReportingData, inv ReportingData_Organisation:

self.reference-id = self.Reference.reference-id
Context ReportingData, inv ReportingData_Reference:

oclConstructionSequence

Context Context_Element_Reporting_Data_Item

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ReportingData.rep_org_id, targetAttr = self.Organisation.org_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ReportingData, target = self.Organisation, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ReportingData.ref_id, targetAttr = self.Reference.ref_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ReportingData, target = self.Reference, multiplicity = 0..1, rdSeq = step2ReadSeq}

let constructionSequence = Sequence{self.ReportingData, step1, step2}
```

Enclosing Transactional: Context_Element_Reporting_Data_Item

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Reference («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	ReportingData («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	Organisation («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Organisation_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.3.5 Context_Element_Status

The Context_Element_Status Transactional Artifact is a support transactional used in the Context_Element Transactional Artifact. It captures information about the status of instances of Reporting Data (together these comprise a specific context), so that those that apply can be determined. This transactional encloses the Organisation_Item Transactional Artifact in order to capture the information pertaining to the organization that established the status.

```
self.context-element-status-establishing-organisation-id = self.Organisation_Item.Organisation.organisation-id  
Context ContextElementStatus, inv ContextElementStatus_Organisation_Item:
```

oclConstructionSequence

```
Context Context_Element_Status
```

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ContextElementStatus.estblng_org_id, targetAttr =  
self.Organisation_Item.org_id}  
let step1ReadSeq = Sequence{ step1ReadPlan1}  
let step1 = Tuple{source = self.ContextElementStatus, target = self.Organisation_Item, multiplicity = 1, rdSeq =  
step1ReadSeq}
```

```
let constructionSequence = Sequence{self.ContextElementStatus, step1}
```

Enclosing Transactional: Context_Element_Status

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtended (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	ContextElement («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Organisation_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	ContextElementStatus («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:

C.3.6 Context_Item

The Context_Item Transactional Artifact captures information to be associated with an instance of a context and with its optional SecurityClassification.

Context_Item is a support transactional in the Transactional Artifacts Context_Assesment, Context_Context_Assoc_Status, Context_Element, Context_Object_Item_Assoc_Status and Operational_Information_Group_Organisation_Assoc.

Enclosing Transactional: Context_Item

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	SecurityClassification («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	Context («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True

C.3.7 Context_Object_Item_Assoc_Status

The Context_Object_Item_Assoc_Status Transactional Artifact captures information about the nature of the association between a specific context and an Object_Item. The domain values are: includes, and is relevant to.

self.context-object-item-association-status-establishing-organisation-id = self.Organisation_Item.Organisation.organisation-id

Context ContextObjectItemAssociationStatus, inv ContextObjectItemAssociationStatus_Organisation_Item:

self.object-item-id = self.ObjectItem.object-item-id

Context ContextObjectItemAssociation, inv ContextObjectItemAssociation_ObjectItem:

self.context-id = self.ContextObjectItemAssociation.context-id and self.object-item-id = self.ContextObjectItemAssociation.object-item-id

Context ContextObjectItemAssociationStatus, inv
ContextObjectItemAssociationStatus_ContextObjectItemAssociation:

self.context-id = self.Context.context-id

Context ContextObjectItemAssociation, inv ContextObjectItemAssociation_Context:

oclConstructionSequence

Context Context_Object_Item_Assoc_Status

let step1ReadPlan1 = Tuple{sourceAttr = self.ContextObjectItemAssociationStatus.contxt_id, targetAttr = self.ContextObjectItemAssociation.contxt_id}

```

let step1ReadPlan2 = Tuple{sourceAttr = self.ContextObjectItemAssociationStatus.obj_item_id, targetAttr =
self.ContextObjectItemAssociation.obj_item_id}
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2}
let step1 = Tuple{source = self.ContextObjectItemAssociationStatus, target = self.ContextObjectItemAssociation,
multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ContextObjectItemAssociation.obj_item_id, targetAttr =
self.ObjectItem.obj_item_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ContextObjectItemAssociation, target = self.ObjectItem, multiplicity = 1, rdSeq =
step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ContextObjectItemAssociation.contxt_id, targetAttr = self.Context.contxt_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ContextObjectItemAssociation, target = self.Context, multiplicity = 1, rdSeq =
step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.ContextObjectItemAssociationStatus.estblng_org_id, targetAttr =
self.Organisation_Item.org_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.ContextObjectItemAssociationStatus, target = self.Organisation_Item, multiplicity = 1,
rdSeq = step4ReadSeq}

let constructionSequence = Sequence{self.ContextObjectItemAssociationStatus, step1, step2, step3, step4}

```

Enclosing Transactional: Context_Object_Item_Assoc_Status

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	ContextObjectItemAssociation («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ContextObjectItemAssociationStatus («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True
Name: Type: Aggregation	Organisation_Item («Transactional»)	Navigation Constraints: Tagged Values:

Name: Type: Aggregation	Context («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Context_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.3.8 Context_Reporting_Data_Assoc

The Context_Reporting_Data_Assoc Transactional Artifact captures information about the type of relationship between a specific context and a specific Reporting Data. It is primarily used in data fusion activities. The domain values are: implies, is confirmed by, is a correction of, is defined to be, is negated by, and is superseded by.

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id
Context ContextReportingDataAssociation, inv ContextReportingDataAssociation_Absolute_Reporting_Data:

self.context-id = self.Context_Specification.Context.context-id
Context ContextReportingDataAssociation, inv ContextReportingDataAssociation_Context_Specification:

oclConstructionSequence
Context Context_Reporting_Data_Assoc

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ContextReportingDataAssociation.contxt_id, targetAttr =
self.Context_Specification.contxt_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ContextReportingDataAssociation, target = self.Context_Specification, multiplicity = 1,
rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ContextReportingDataAssociation.rptd_id, targetAttr =
self.Absolute_Reporting_Data.rptd_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ContextReportingDataAssociation, target = self.Absolute_Reporting_Data, multiplicity = 1,
rdSeq = step2ReadSeq}

let constructionSequence = Sequence{self.ContextReportingDataAssociation, step1, step2}
```

Enclosing Transactional: Context_Reporting_Data_Assoc

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Context_Specification («Transactional»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ContextReportingDataAssociation («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True isWatchPoint = True
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:

C.3.9 Context_Specification

The Context_Specification Transactional Artifact captures information that specifies a specific context. It encloses two supporting Transactional Artifacts that may have multiple instances. The first is Context_Assessment, and the second is Context_Element.

self.security-classification-id = self.SecurityClassification.security-classification-id
Context Context, inv Context_SecurityClassification:

self.context-id = self.OperationalInformationGroup.operational-information-group-id
Context Context, inv Context_OperationalInformationGroup:

self.context-id = self.Context_Element.ContextElement.context-id
Context Context, inv Context_Context_Element:

self.context-id = self.Context_Assessment.ContextAssessment.context-id
Context Context, inv Context_Context_Assessment:

oclConstructionSequence

Context Context_Specification

```
let step1ReadPlan1 = Tuple{sourceAttr = self.Context.contxt_id, targetAttr = self.Context_Element.contxt_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.Context, target = self.Context_Element, multiplicity = 1..*, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.Context.contxt_id, targetAttr = self.OperationalInformationGroup.oig_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.Context, target = self.OperationalInformationGroup, multiplicity = 1, rdSeq = step2ReadSeq}
```

```

let step3ReadPlan1 = Tuple{sourceAttr = self.Context.security_clsfc_id, targetAttr =
self.SecurityClassification.security_clsfc_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.Context, target = self.SecurityClassification, multiplicity = 0..1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.Context.contxt_id, targetAttr = self.Context_Assessment.contxt_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.Context, target = self.Context_Assessment, multiplicity = 0..*, rdSeq = step4ReadSeq}

let constructionSequence = Sequence{self.Context, step1, step2, step3, step4}

```

Enclosing Transactional: Context_Specification

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Context_Assessment («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	SecurityClassification («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	OperationalInformationGroup («Wrapper»)	Navigation Constraints: Context_Discriminator_OperationalInformationGroup: inv: self.Context.context-category-code='OIG' Tagged Values:
Name: Type: Aggregation	Context_Element («Transactional»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	Context («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True

C.3.10 Operational_Information_Group_Organisation_Assoc

The Operational_Information_Group_Organisation_Assoc Transactional Artifact captures information about the nature of the relationship between a specific operational-information-group and an organization by specifying the role of the organization with respect to the operational-information-group.

self.organisation-id = self.Organisation.organisation-id

Context OperationalInformationGroupOrganisationAssociation, inv
OperationalInformationGroupOrganisationAssociation_Organisation:

self.operational-information-group-id = self.OperationallInformationGroup.operational-information-group-id

Context OperationalInformationGroupOrganisationAssociation, inv
OperationalInformationGroupOrganisationAssociation_OperationallInformationGroup:

self.operational-information-group-id = self.Context.context-id

Context OperationalInformationGroup, inv OperationalInformationGroup_Context:

oclConstructionSequence

Context Operational_Information_Group_Organisation_Assoc

```
let step1ReadPlan1 = Tuple{sourceAttr = self.OperationallInformationGroupOrganisationAssociation.org_id, targetAttr = self.Organisation.org_id}
```

```
let step1ReadSeq = Sequence{ step1ReadPlan1}
```

```
let step1 = Tuple{source = self.OperationallInformationGroupOrganisationAssociation, target = self.Organisation, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.OperationallInformationGroupOrganisationAssociation.oig_id, targetAttr = self.OperationallInformationGroup.oig_id}
```

```
let step2ReadSeq = Sequence{ step2ReadPlan1}
```

```
let step2 = Tuple{source = self.OperationallInformationGroupOrganisationAssociation, target = self.OperationallInformationGroup, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.OperationallInformationGroup.oig_id, targetAttr = self.Context.context_id}
```

```
let step3ReadSeq = Sequence{ step3ReadPlan1}
```

```
let step3 = Tuple{source = self.OperationallInformationGroup, target = self.Context, multiplicity = 1, rdSeq = step3ReadSeq}
```

```
let constructionSequence = Sequence{self.OperationallInformationGroupOrganisationAssociation, step1, step2, step3}
```

Enclosing Transactional: Operational_Information_Group_Organisation_Assoc

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Organisation («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Context («Wrapper»)	Navigation Constraints: OperationalInformationGroup_Enforced_Context}; inv: self.Context.context-category-code='OIG' Tagged Values:
Name: Type: Aggregation	OperationalInformationGroup («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	OperationalInformationGroup OrganisationAssociation («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	Organisation_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Context_Item («Transactional»)	Navigation Constraints: OperationalInformationGroup_Enforced_Context}; self.Context.context-category-code='OIG' Tagged Values:

C.3.11 Operational_Information_Group_Organisation_Assoc_Status

The Operational_Information_Group_Organisation_Assoc_Status Transactional Artifact captures information about the perceived state of the specific operational-information-group-organisation-assoc-status as determined by the establishing organization. This transactional encloses the Operational_Information_Group_Organisation_Assoc Transactional Artifact.

self.operational-information-group-organisation-association-status-establishing-organ =

self.Organisation.organisation-id

Context OperationalInformationGroupOrganisationAssociationStatus, inv
 OperationalInformationGroupOrganisationAssociationStatus_Organisation:

oclConstructionSequence

Context Operational_Information_Group_Organisation_Assoc_Status

```

let step1ReadPlan1 = Tuple{sourceAttr = self.OperationallInformationGroupOrganisationAssociationStatus.oig_id,
targetAttr = self.Operational_Information_Group_Organisation_Assoc.oig_id}
let step1ReadPlan2 = Tuple{sourceAttr = self.OperationallInformationGroupOrganisationAssociationStatus.org_id,
targetAttr = self.Operational_Information_Group_Organisation_Assoc.org_id}
let step1ReadPlan3 = Tuple{sourceAttr =
self.OperationallInformationGroupOrganisationAssociationStatus.oig_org_assoc_ix, targetAttr =
self.Operational_Information_Group_Organisation_Assoc.oig_org_assoc_ix}
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2, step1ReadPlan3}
let step1 = Tuple{source = self.OperationallInformationGroupOrganisationAssociationStatus, target =
self.Operational_Information_Group_Organisation_Assoc, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.OperationallInformationGroupOrganisationAssociationStatus.estblng_org_id,
targetAttr = self.Organisation.org_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.OperationallInformationGroupOrganisationAssociationStatus, target = self.Organisation,
multiplicity = 1, rdSeq = step2ReadSeq}

let constructionSequence = Sequence{self.OperationallInformationGroupOrganisationAssociationStatus, step1, step2}

```

Enclosing Transactional: Operational_Information_Group_Organisation_Assoc_Status

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier WatchPoint Type: Aggregation	OperationalInformationGroupOrganisation AssociationStatus («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True
Name: Type: Aggregation	Organisation («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Operational_Information_Group_Organisation_ Assoc («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Organisation_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.3.12 Operational_Information_Group_Plan_Order_Content

The Operational_Information_Group Plan_Order_Content Transactional Artifact captures information about the association of a specific Operational Information Group to a specific plan-order. This transactional encloses the Plan_Item Transactional Artifact.

oclConstructionSequence

Context Operational_Information_Group_Plan_Order_Content

```
let step1ReadPlan1 = Tuple{sourceAttr = self.OperationallInformationGroupPlanOrderContent.oig_id, targetAttr = self.OperationallInformationGroup.oig_id}
```

```
let step1ReadSeq = Sequence{ step1ReadPlan1}
```

```
let step1 = Tuple{source = self.OperationallInformationGroupPlanOrderContent, target = self.OperationallInformationGroup, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.OperationallInformationGroup.oig_id, targetAttr = self.Context_Specification.contxt_id}
```

```
let step2ReadSeq = Sequence{ step2ReadPlan1}
```

```
let step2 = Tuple{source = self.OperationallInformationGroup, target = self.Context_Specification, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let constructionSequence = Sequence{self.OperationallInformationGroupPlanOrderContent, step1, step2}
```

self.operational-information-group-id = self.OperationallInformationGroup.operational-information-group-id

Context OperationalInformationGroupPlanOrderContent, inv

OperationalInformationGroupPlanOrderContent_OperationalInformationGroup:

self.operational-information-group-id = self.Context_Specification.Context.context-id

Context OperationalInformationGroup, inv OperationalInformationGroup_Context_Specification:

Enclosing Transactional: Operational_Information_Group_Plan_Order_Content

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	OperationalInformation Group («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	OperationalInformation GroupPlanOrderContent («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True isWatchPoint = True

Name: Type: Aggregation	Context_Specification («Transactional»)	Navigation Constraints: OperationalInformationGroup_Enforced_Context_Specification}: inv: self.Context.context-category-code='OIG' Tagged Values:
Name: Type: Aggregation	Plan_Order_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.3.13 Reference_Assoc

The Reference_Assoc Transactional Artifact captures information about the nature of the association between specific pairs of Reference, such as is superseded by.

self.reference-association-subject-reference-id = self.Reference.reference-id
Context ReferenceAssociation, inv ReferenceAssociation_Reference:

self.reference-association-object-reference-id = self.Reference.reference-id
Context ReferenceAssociation, inv ReferenceAssociation_Reference:

oclConstructionSequence
Context Reference_Assoc

```

let step1ReadPlan1 = Tuple{sourceAttr = self.ReferenceAssociation.subj_ref_id, targetAttr = self.Reference.ref_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ReferenceAssociation, target = self.Reference, multiplicity = 2, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ReferenceAssociation.obj_ref_id, targetAttr = self.Reference.ref_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ReferenceAssociation, target = self.Reference, multiplicity = 2, rdSeq = step2ReadSeq}

let constructionSequence = Sequence{self.ReferenceAssociation, step1, step2}

```

Enclosing Transactional: Reference_Assoc

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Reference («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ReferenceAssociation («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True isWatchPoint = True

C.4 ControlFeature

C.4.1 ApproachDirection_Item

The ApproachDirection_Item Transactional Artifact captures information about the approach direction a non-tangible feature of interest that is administratively specified, may be represented by a geometric figure, and is associated with the conduct of operations.

Enclosing Transactional: ApproachDirection_Item

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Identifier Type: Aggregation	ApproachDirection («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	ControlFeature («Wrapper»)	Navigation Constraints: ApproachDirection_Enforced_ControlFeature}: inv: self.ControlFeature.control-feature-category-code='APPRDR' Tagged Values:
Name: Type: Aggregation	Feature («Wrapper»)	Navigation Constraints: ControlFeature_Enforced_Feature}: inv: self.Feature.feature-category-code='CF' Tagged Values:

Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Feature_Enforced_ObjectItem}: inv: self.ObjectItem.object-item-category-code='FE' Tagged Values:
--	---------------------------	---

C.4.2 ControlFeature_Item

The ControlFeature_Item Transactional Artifact captures information about an individually identified instance of a non-tangible feature of military interest that is administratively specified, may be represented by a geometric figure, and is associated with the conduct of military operations.

self.control-feature-id = self.RouteSegment.route-segment-id
Context ControlFeature, inv ControlFeature_RouteSegment:

self.control-feature-id = self.Route.route-id
Context ControlFeature, inv ControlFeature_Route:

self.control-feature-id = self.Feature.feature-id
Context ControlFeature, inv ControlFeature_Feature:

self.control-feature-id = self.ApproachDirection.approach-direction-id
Context ControlFeature, inv ControlFeature_ApproachDirection:

self.control-feature-id = self.AirspaceControlMeans.airspace-control-means-id
Context ControlFeature, inv ControlFeature_AirspaceControlMeans:

oclConstructionSequence
Context ControlFeature_Item

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ControlFeature.ctrl_feat_id, targetAttr = self.Feature.feat_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ControlFeature, target = self.Feature, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.Feature.feat_id, targetAttr = self.ObjectItem.obj_item_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.Feature, target = self.ObjectItem, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectItem.obj_item_id, targetAttr = self.ObjectItemAlias.obj_item_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ObjectItem, target = self.ObjectItemAlias, multiplicity = 0..1, rdSeq = step3ReadSeq}
```

```
let step4ReadPlan1 = Tuple{sourceAttr = self.ControlFeature.ctrl_feat_id, targetAttr = self.ApproachDirection.appr_dir_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.ControlFeature, target = self.ApproachDirection, multiplicity = 1, rdSeq = step4ReadSeq}
```

```

let step5ReadPlan1 = Tuple{sourceAttr = self.ControlFeature.ctrl_feat_id, targetAttr =
self.AirspaceControlMeans.arsp_ctrl_means_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.ControlFeature, target = self.AirspaceControlMeans, multiplicity = 1, rdSeq =
step5ReadSeq}

let step6ReadPlan1 = Tuple{sourceAttr = self.ControlFeature.ctrl_feat_id, targetAttr = self.RouteSegment.route_sgmnt_id}
let step6ReadSeq = Sequence{ step6ReadPlan1}
let step6 = Tuple{source = self.ControlFeature, target = self.RouteSegment, multiplicity = 1, rdSeq = step6ReadSeq}

let step7ReadPlan1 = Tuple{sourceAttr = self.RouteSegment.route_sgmnt_id, targetAttr =
self.AirRouteSegment.air_route_sgmnt_id}
let step7ReadSeq = Sequence{ step7ReadPlan1}
let step7 = Tuple{source = self.RouteSegment, target = self.AirRouteSegment, multiplicity = 1, rdSeq = step7ReadSeq}

let step8ReadPlan1 = Tuple{sourceAttr = self.ControlFeature.ctrl_feat_id, targetAttr = self.Route.route_id}
let step8ReadSeq = Sequence{ step8ReadPlan1}
let step8 = Tuple{source = self.ControlFeature, target = self.Route, multiplicity = 1, rdSeq = step8ReadSeq}

let constructionSequence = Sequence{self.ControlFeature, step1, step2, step3, step4, step5, step6, step7, step8}

```

self.object-item-id = self.ObjectItemAlias.object-item-id
Context ObjectItem, inv ObjectItem_ObjectItemAlias:

self.route-segment-id = self.AirRouteSegment.air-route-segment-id
Context RouteSegment, inv RouteSegment_AirRouteSegment:

self.feature-id = self.ObjectItem.object-item-id
Context Feature, inv Feature_ObjectItem:

Enclosing Transactional: ControlFeature_Item

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Route («Wrapper»)	Navigation Constraints: ControlFeature_Discriminator_Route}: inv: self.ControlFeature.control-feature-category-code='ROUTE' Tagged Values:

Name: Type: Aggregation	AirspaceControlMeans («Wrapper»)	Navigation Constraints: ControlFeature_Discriminator_AirspaceControlMeans}; inv: self.ControlFeature.control-feature-category-code='ACM' Tagged Values:
Name: Type: Aggregation	ObjectItemAlias («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Feature («Wrapper»)	Navigation Constraints: ControlFeature_Enforced_Feature}; inv: self.Feature.feature-category-code='CF' Tagged Values:
Name: Type: Aggregation	AirRouteSegment («Wrapper»)	Navigation Constraints: RouteSegment_Discriminator_AirRouteSegment}; inv: self.RouteSegment.route-segment-category-code='AIRRTE' Tagged Values:
Name: Type: Aggregation	ApproachDirection («Wrapper»)	Navigation Constraints: ControlFeature_Discriminator_ApproachDirection}; inv: self.ControlFeature.control-feature-category-code='APPRDR' Tagged Values:
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Feature_Enforced_ObjectItem}; inv: self.ObjectItem.object-item-category-code='FE' Tagged Values:
Name: Identifier Type: Aggregation	ControlFeature («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	RouteSegment («Wrapper»)	Navigation Constraints: ControlFeature_Discriminator_RouteSegment}; inv: self.ControlFeature.control-feature-category-code='RTESEG' Tagged Values:

C.4.3 ControlFeature_Item_Type

The ControlFeature_Item_Type Transactional Artifact captures information about the perceived classification of a specific control-feature-item as a specific control-feature-type. This transactional encloses the Absolute_Reporting_Data Transactional Artifact in which information about the type classification is captured.

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id
Context ObjectItemType, inv ObjectItemType_Absolute_Reporting_Data:

self.object-type-id = self.ObjectType.object-type-id
Context ObjectItemType, inv ObjectItemType_ObjectType:

self.object-type-id = self.FeatureType.feature-type-id
Context ObjectType, inv ObjectType_FeatureType:

self.object-item-id = self.ObjectItem.object-item-id
Context ObjectItemType, inv ObjectItemType_ObjectItem:

self.object-item-id = self.Feature.feature-id
Context ObjectItem, inv ObjectItem_Feature:

self.feature-type-id = self.ControlFeature_Type.ControlFeatureType.control-feature-type-id
Context FeatureType, inv FeatureType_ControlFeature_Type:

self.feature-id = self.ControlFeature_Item.ControlFeature.control-feature-id
Context Feature, inv Feature_ControlFeature_Item:

oclConstructionSequence

Context ControlFeature_Item_Type

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectItemType.rptd_id, targetAttr = self.Absolute_Reporting_Data.rptd_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ObjectItemType, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq =
step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectItemType.obj_type_id, targetAttr = self.ObjectType.obj_type_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ObjectItemType, target = self.ObjectType, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectType.obj_type_id, targetAttr = self.FeatureType.feaut_type_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ObjectType, target = self.FeatureType, multiplicity = 1, rdSeq = step3ReadSeq}
```

```
let step4ReadPlan1 = Tuple{sourceAttr = self.FeatureType.feaut_type_id, targetAttr =
self.ControlFeature_Type.ctrl_feaut_type_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.FeatureType, target = self.ControlFeature_Type, multiplicity = 1, rdSeq = step4ReadSeq}
```

```

let step5ReadPlan1 = Tuple{sourceAttr = self.ObjectItem.obj_item_id, targetAttr = self.ObjectItem.obj_item_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.ObjectItem, target = self.ObjectItem, multiplicity = 1, rdSeq = step5ReadSeq}

let step6ReadPlan1 = Tuple{sourceAttr = self.ObjectItem.obj_item_id, targetAttr = self.Feature.feat_id}
let step6ReadSeq = Sequence{ step6ReadPlan1}
let step6 = Tuple{source = self.ObjectItem, target = self.Feature, multiplicity = 1, rdSeq = step6ReadSeq}

let step7ReadPlan1 = Tuple{sourceAttr = self.Feature.feat_id, targetAttr = self.ControlFeature_Item.ctrl_feat_id}
let step7ReadSeq = Sequence{ step7ReadPlan1}
let step7 = Tuple{source = self.Feature, target = self.ControlFeature_Item, multiplicity = 1, rdSeq = step7ReadSeq}

let step8ReadPlan1 = Tuple{sourceAttr = self.Feature.feat_id, targetAttr = self.ControlFeature_Item.ctrl_feat_id}
let step8ReadSeq = Sequence{ step8ReadPlan1}
let step8 = Tuple{source = self.Feature, target = self.ControlFeature_Item, multiplicity = 1, rdSeq = step8ReadSeq}

let constructionSequence = Sequence{self.ObjectItem, step1, step2, step3, step4, step5, step6, step7, step8}

```

Enclosing Transactional: ControlFeature_Item_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	ControlFeature_Type («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ControlFeatureType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ControlFeature («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Feature («Wrapper»)	Navigation Constraints: ControlFeature_Item_Enforced_Feature: inv:self.Feature.feature-category-code='CF' Tagged Values:
Name: Type: Aggregation	FeatureType («Wrapper»)	Navigation Constraints: ControlFeature_Type_Enforced_FeatureType: inv: self.FeatureType.feature-type-category-code='CF' Tagged Values:

Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Feature_Enforced_ObjectItem}; inv: self.ObjectItem.object-item-category-code='FE' Tagged Values:
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: FeatureType_Enforced_ObjectType}; inv: self.ObjectType.object-type-category-code='FE' Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ObjectItemType («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True
Name: Type: Aggregation	ControlFeature_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:

C.4.4 ControlFeature_Position

The ControlFeature_Position Transactional Artifact captures information about the association of a control-feature to a location so that the geographic position of the control-feature can be specified. This transactional encloses the Location_Composite Transactional Artifact to support the specification of the location in geometrical terms. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the location association is captured.

self.location-id = self.Location_Composite.Location.location-id
Context ObjectItemLocation, inv ObjectItemLocation_Location_Composite:

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id
Context ObjectItemLocation, inv ObjectItemLocation_Absolute_Reporting_Data:

self.object-item-id = self.Feature.feature-id
Context ObjectItem, inv ObjectItem_Feature:

self.feature-id = self.ControlFeature.control-feature-id
Context Feature, inv Feature_ControlFeature:

oclConstructionSequence

Context ControlFeature_Position

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectItemLocation.loc_id, targetAttr = self.Location_Composite.loc_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ObjectItemLocation, target = self.Location_Composite, multiplicity = 1, rdSeq =
step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectItemLocation.rptd_id, targetAttr =
self.Absolute_Reporting_Data.rptd_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ObjectItemLocation, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq =
step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectItemLocation.obj_item_id, targetAttr = self.ObjectItem.obj_item_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ObjectItemLocation, target = self.ObjectItem, multiplicity = 1, rdSeq = step3ReadSeq}
```

```
let step4ReadPlan1 = Tuple{sourceAttr = self.ObjectItem.obj_item_id, targetAttr = self.Feature.feat_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.ObjectItem, target = self.Feature, multiplicity = 1, rdSeq = step4ReadSeq}
```

```
let step5ReadPlan1 = Tuple{sourceAttr = self.Feature.feat_id, targetAttr = self.ControlFeature_Item.ctrl_feat_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.Feature, target = self.ControlFeature_Item, multiplicity = 1, rdSeq = step5ReadSeq}
```

```
let constructionSequence = Sequence{self.ObjectItemLocation, step1, step2, step3, step4, step5}
```

self.object-item-id = self.ObjectItem.object-item-id

Context ObjectItemLocation, inv ObjectItemLocation_ObjectItem:

Enclosing Transactional: ControlFeature_Position

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtended (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Surface_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Feature_Enforced_ObjectItem: inv: self.ObjectItem.object-item-category-code='FE' Tagged Values:

Name: Identifier Watchpoint Type: Aggregation	ObjectItemLocation («Wrapper»)	Navigation Constraints: Tagged Values: isWatchPoint = TrueisIdentifier = True
Name: Type: Aggregation	ControlFeature_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Location_Composite («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Line_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Location («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Point_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Feature («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ControlFeature_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Feature («Wrapper»)	Navigation Constraints: ControlFeature_Item_Enforced_Feature}; inv: self.Feature.feature-category-code='CF' Tagged Values:

C.4.5 ControlFeature_Status

The ControlFeature_Status Transactional Artifact captures information about the condition or status of a specific Control Feature. The status information captured pertains to the site encompassed by the Control Feature, in terms of whether or not the site: has been investigated, and with what results; presents any CBRN threat, and if so at what level; is guarded. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the location association is captured.

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id

Context ObjectItemStatus, inv ObjectItemStatus_Absolute_Reporting_Data:

self.object-item-id = self.ObjectItem.object-item-id

Context ObjectItemStatus, inv ObjectItemStatus_ObjectItem:

self.object-item-id = self.Feature.feature-id

Context ObjectItem, inv ObjectItem_Feature:

self.object-item-id = self.ControlFeatureStatus.control-feature-status-id and self.object-item-status-index =

self.ControlFeatureStatus.object-item-status-index

Context ObjectItemStatus, inv ObjectItemStatus_ControlFeatureStatus:

self.feature-id = self.ControlFeature.control-feature-id

Context Feature, inv Feature_ControlFeature:

oclConstructionSequence

Context ControlFeature_Status

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ControlFeatureStatus.cfeat_stat_id, targetAttr = self.ObjectItemStatus.obj_item_id}
```

```
let step1ReadPlan2 = Tuple{sourceAttr = self.ControlFeatureStatus.obj_item_stat_ix, targetAttr = self.ObjectItemStatus.obj_item_stat_ix}
```

```
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2}
```

```
let step1 = Tuple{source = self.ControlFeatureStatus, target = self.ObjectItemStatus, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectItemStatus.rptd_id, targetAttr = self.Absolute_Reporting_Data.rptd_id}
```

```
let step2ReadSeq = Sequence{ step2ReadPlan1}
```

```
let step2 = Tuple{source = self.ObjectItemStatus, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectItemStatus.obj_item_id, targetAttr = self.ObjectItem.obj_item_id}
```

```
let step3ReadSeq = Sequence{ step3ReadPlan1}
```

```
let step3 = Tuple{source = self.ObjectItemStatus, target = self.ObjectItem, multiplicity = 1, rdSeq = step3ReadSeq}
```

```
let step4ReadPlan1 = Tuple{sourceAttr = self.ObjectItem.obj_item_id, targetAttr = self.Feature.featt_id}
```

```
let step4ReadSeq = Sequence{ step4ReadPlan1}
```

```
let step4 = Tuple{source = self.ObjectItem, target = self.Feature, multiplicity = 1, rdSeq = step4ReadSeq}
```

```
let step5ReadPlan1 = Tuple{sourceAttr = self.Feature.featt_id, targetAttr = self.ControlFeature.ctrl_featt_id}
```

```
let step5ReadSeq = Sequence{ step5ReadPlan1}
```

```
let step5 = Tuple{source = self.Feature, target = self.ControlFeature, multiplicity = 1, rdSeq = step5ReadSeq}
```

```
let constructionSequence = Sequence{self.ControlFeatureStatus, step1, step2, step3, step4, step5}
```

Enclosing Transactional: ControlFeature_Status

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: ControlFeature_Item_Enforced_ObjectItem}; inv: self.ObjectItem.object-item-category-code='FE' Tagged Values:
Name: WatchPoint Type: Aggregation	ObjectItemStatus («Wrapper»)	Navigation Constraints: Tagged Values: isWatchPoint = True
Name: Type: Aggregation	Feature («Wrapper»)	Navigation Constraints: ControlFeature_Enforced_Feature}; inv: self.Feature.feature-category-code='CF' Tagged Values:
Name: Identifier Type: Aggregation	ControlFeatureStatus («Wrapper»)	Navigation Constraints: ObjectItemStatus_Discriminator_ControlFeatureStatus}; inv: self.ObjectItemStatus.object-item-status-category-code='CF' Tagged Values: isIdentifier = True
Name: Type: Aggregation	ControlFeature («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ControlFeature_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.4.6 ControlFeature_Type

The ControlFeature_Type Transactional Artifact captures information about a non-tangible Feature Type of military interest that may be represented by a geometric figure, and is associated with the conduct of military operations. The Control Feature type includes the subtype Route Type.

self.control-feature-type-id = self.FeatureType.feature-type-id
Context ControlFeatureType, inv ControlFeatureType_FeatureType:

self.feature-type-id = self.ObjectType.object-type-id
Context FeatureType, inv FeatureType_ObjectType:

oclConstructionSequence

Context ControlFeature_Type

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ControlFeatureType.ctrl_feat_type_id, targetAttr =
self.FeatureType.feaut_type_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ControlFeatureType, target = self.FeatureType, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.FeatureType.feaut_type_id, targetAttr = self.ObjectType.obj_type_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.FeatureType, target = self.ObjectType, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.ControlFeatureType.ctrl_feat_type_id, targetAttr =
self.RouteType.route_type_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ControlFeatureType, target = self.RouteType, multiplicity = 1, rdSeq = step3ReadSeq}
```

```
let constructionSequence = Sequence{self.ControlFeatureType, step1, step2, step3}
```

self.control-feature-type-id = self.RouteType.route-type-id
Context ControlFeatureType, inv ControlFeatureType_RouteType:

Enclosing Transactional: ControlFeature_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtyped (Enclosed) Element	Constraints and Tagged Values
Name: Identifier Type: Aggregation	ControlFeatureType («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True

Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: FeatureType_Enforced_ObjectType}; inv: self.ObjectType.object-type-category-code='FE' Tagged Values:
Name: Type: Aggregation	FeatureType («Wrapper»)	Navigation Constraints: ControlFeatureType_Enforced_FeatureType}; inv: self.FeatureType.feature-type-category-code='CF' Tagged Values:
Name: Type: Aggregation	RouteType («Wrapper»)	Navigation Constraints: ControlFeatureType_Discriminator_RouteType}; inv: self.ControlFeatureType.control-feature-type-category-code='RTETYP' Tagged Values:

C.5 Facility

C.5.1 Facility_Item

The Facility_Item Transactional Artifact captures information about an individually identified instance of a Facility, to which military or civilian significance is attached. A facility is built, installed or established to serve some particular propose, and is identified by the service it provides rather than by its content. There are many subtypes of facility including Airfield, Anchorage, Bridge, etc.

self.facility-id = self.Airfield.airfield-id
 Context Facility, inv Facility_Airfield:

self.facility-id = self.Anchorage.anchorage-id
 Context Facility, inv Facility_Anchorage:

self.facility-id = self.Road.road-id
 Context Facility, inv Facility_Road:

oclConstructionSequence
 Context Facility_Item

```
let step1ReadPlan1 = Tuple{sourceAttr = self.Facility.fac_id, targetAttr = self.Harbour.hrbr_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.Facility, target = self.Harbour, multiplicity = 1, rdSeq = step1ReadSeq}
```

```

let step2ReadPlan1 = Tuple{sourceAttr = self.Facility.fac_id, targetAttr = self.ObjectItem.obj_item_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.Facility, target = self.ObjectItem, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectItem.obj_item_id, targetAttr = self.ObjectItemAlias.obj_item_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ObjectItem, target = self.ObjectItemAlias, multiplicity = 0..1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.Facility.fac_id, targetAttr = self.DryDock.dry_dock_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.Facility, target = self.DryDock, multiplicity = 1, rdSeq = step4ReadSeq}

let step5ReadPlan1 = Tuple{sourceAttr = self.Facility.fac_id, targetAttr = self.Slipway.slpway_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.Facility, target = self.Slipway, multiplicity = 1, rdSeq = step5ReadSeq}

let step6ReadPlan1 = Tuple{sourceAttr = self.Facility.fac_id, targetAttr = self.Bridge.bridge_id}
let step6ReadSeq = Sequence{ step6ReadPlan1}
let step6 = Tuple{source = self.Facility, target = self.Bridge, multiplicity = 1, rdSeq = step6ReadSeq}

let step7ReadPlan1 = Tuple{sourceAttr = self.Facility.fac_id, targetAttr = self.Berth.berth_id}
let step7ReadSeq = Sequence{ step7ReadPlan1}
let step7 = Tuple{source = self.Facility, target = self.Berth, multiplicity = 1, rdSeq = step7ReadSeq}

let step8ReadPlan1 = Tuple{sourceAttr = self.Facility.fac_id, targetAttr = self.Basin.basin_id}
let step8ReadSeq = Sequence{ step8ReadPlan1}
let step8 = Tuple{source = self.Facility, target = self.Basin, multiplicity = 1, rdSeq = step8ReadSeq}

let step9ReadPlan1 = Tuple{sourceAttr = self.Facility.fac_id, targetAttr = self.Apron.apron_id}
let step9ReadSeq = Sequence{ step9ReadPlan1}
let step9 = Tuple{source = self.Facility, target = self.Apron, multiplicity = 1, rdSeq = step9ReadSeq}

let step10ReadPlan1 = Tuple{sourceAttr = self.Facility.fac_id, targetAttr = self.Anchorage.anchr_id}
let step10ReadSeq = Sequence{ step10ReadPlan1}
let step10 = Tuple{source = self.Facility, target = self.Anchorage, multiplicity = 1, rdSeq = step10ReadSeq}

let step11ReadPlan1 = Tuple{sourceAttr = self.Facility.fac_id, targetAttr = self.Airfield.airfield_id}
let step11ReadSeq = Sequence{ step11ReadPlan1}
let step11 = Tuple{source = self.Facility, target = self.Airfield, multiplicity = 1, rdSeq = step11ReadSeq}

let step12ReadPlan1 = Tuple{sourceAttr = self.Facility.fac_id, targetAttr = self.Road.road_id}
let step12ReadSeq = Sequence{ step12ReadPlan1}
let step12 = Tuple{source = self.Facility, target = self.Road, multiplicity = 1, rdSeq = step12ReadSeq}

let step13ReadPlan1 = Tuple{sourceAttr = self.Facility.fac_id, targetAttr = self.Railway.railway_id}
let step13ReadSeq = Sequence{ step13ReadPlan1}
let step13 = Tuple{source = self.Facility, target = self.Railway, multiplicity = 1, rdSeq = step13ReadSeq}

let step14ReadPlan1 = Tuple{sourceAttr = self.Facility.fac_id, targetAttr = self.Quay.quay_id}
let step14ReadSeq = Sequence{ step14ReadPlan1}
let step14 = Tuple{source = self.Facility, target = self.Quay, multiplicity = 1, rdSeq = step14ReadSeq}

let step15ReadPlan1 = Tuple{sourceAttr = self.Facility.fac_id, targetAttr = self.Jetty.jetty_id}
let step15ReadSeq = Sequence{ step15ReadPlan1}
let step15 = Tuple{source = self.Facility, target = self.Jetty, multiplicity = 1, rdSeq = step15ReadSeq}

```

let constructionSequence = Sequence{self.Facility, step1, step2, step3, step4, step5, step6, step7, step8, step9, step10, step11, step12, step13, step14, step15}

self.facility-id = self.Slipway.slipway-id
Context Facility, inv Facility_Slipway:

self.facility-id = self.Railway.railway-id
Context Facility, inv Facility_Railway:

self.facility-id = self.Quay.quay-id
Context Facility, inv Facility_Quay:

self.facility-id = self.ObjectItem.object-item-id
Context Facility, inv Facility_ObjectItem:

self.facility-id = self.Jetty.jetty-id
Context Facility, inv Facility_Jetty:

self.facility-id = self.Harbour.harbour-id
Context Facility, inv Facility_Harbour:

self.facility-id = self.DryDock.dry-dock-id
Context Facility, inv Facility_DryDock:

self.facility-id = self.Bridge.bridge-id
Context Facility, inv Facility_Bridge:

self.facility-id = self.Berth.berth-id
Context Facility, inv Facility_Berth:

self.facility-id = self.Basin.basin-id
Context Facility, inv Facility_Basin:

self.facility-id = self.Apron.apron-id
Context Facility, inv Facility_Apron:

self.object-item-id = self.ObjectItemAlias.object-item-id
Context ObjectItem, inv ObjectItem_ObjectItemAlias:

Enclosing Transaction: Facility_Item

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Apron («Wrapper»)	Navigation Constraints: Facility_Discriminator_Apron}: inv: self.Facility.facility-category-code='APRON' Tagged Values:
Name: Type: Aggregation	Basin («Wrapper»)	Navigation Constraints: Facility_Discriminator_Basin}: inv: self.Facility.facility-category-code='BASIN' Tagged Values:
Name: Type: Aggregation	DryDock («Wrapper»)	Navigation Constraints: Facility_Discriminator_DryDock}: inv: self.Facility.facility-category-code='DRYDCK' Tagged Values:
Name: Type: Aggregation	Anchorage («Wrapper»)	Navigation Constraints: Facility_Discriminator_Anchorage}: inv: self.Facility.facility-category-code='ANCHOR' Tagged Values:
Name: Type: Aggregation	Slipway («Wrapper»)	Navigation Constraints: Facility_Discriminator_Slipway}: inv: self.Facility.facility-category-code='SLPWAY' Tagged Values:
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Facility_Enforced_ObjectItem}: inv: self.ObjectItem.object-item-category-code='FA' Tagged Values:

Name: Type: Aggregation	Jetty («Wrapper»)	Navigation Constraints: Facility_Discriminator_Jetty}: inv: self.Facility.facility-category-code='JETTY' Tagged Values:
Name: Type: Aggregation	Quay («Wrapper»)	Navigation Constraints: Facility_Discriminator_Quay}: inv: self.Facility.facility-category-code='QUAY' Tagged Values:
Name: Type: Aggregation	Bridge («Wrapper»)	Navigation Constraints: Facility_Discriminator_Bridge}: inv: self.Facility.facility-category-code='BRIDGE' Tagged Values:
Name: Type: Aggregation	Harbour («Wrapper»)	Navigation Constraints: Facility_Discriminator_Harbour}: inv: self.Facility.facility-category-code='HARBOR' Tagged Values:
Name: Type: Aggregation	Railway («Wrapper»)	Navigation Constraints: Facility_Discriminator_Railway}: inv: self.Facility.facility-category-code='RALWAY' Tagged Values:
Name: Type: Aggregation	ObjectItemAlias («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Berth («Wrapper»)	Navigation Constraints: Facility_Discriminator_Berth}: inv: self.Facility.facility-category-code='BERTH' Tagged Values:
Name: Type: Aggregation	Road («Wrapper»)	Navigation Constraints: Facility_Discriminator_Road}: inv: self.Facility.facility-category-code='ROAD' Tagged Values:

Name: Type: Aggregation	Airfield («Wrapper»)	Navigation Constraints: Facility_Discriminator_Airfield}: inv: self.Facility.facility-category-code='AIRFLD' Tagged Values:
Name: Identifier Type: Aggregation	Facility («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True

C.5.2 Facility_Item_Type

The Facility_Item_Type Transactional Artifact captures information about the perceived classification of a specific facility-item as a specific facility-type. This transactional encloses the Absolute_Reporting_Data Transactional Artifact in which information about the type classification is captured.

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id
Context ObjectItemType, inv ObjectItemType_Absolute_Reporting_Data:

self.object-type-id = self.ObjectType.object-type-id
Context ObjectItemType, inv ObjectItemType_ObjectType:

self.object-type-id = self.Facility_Type.FacilityType.facility-type-id
Context ObjectType, inv ObjectType_Facility_Type:

self.object-item-id = self.ObjectItem.object-item-id
Context ObjectItemType, inv ObjectItemType_ObjectItem:

self.object-item-id = self.Facility_Item.Facility.facility-id
Context ObjectItem, inv ObjectItem_Facility_Item:

oclConstructionSequence
Context Facility_Item_Type

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectItemType.rptd_id, targetAttr = self.Absolute_Reporting_Data.rptd_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ObjectItemType, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq =
step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectItemType.obj_type_id, targetAttr = self.ObjectType.obj_type_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ObjectItemType, target = self.ObjectType, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectType.obj_type_id, targetAttr = self.Facility_Type.fac_type_id}
```

```

let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ObjectType, target = self.Facility_Type, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.ObjectItemType.obj_item_id, targetAttr = self.ObjectItem.obj_item_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.ObjectItemType, target = self.ObjectItem, multiplicity = 1, rdSeq = step4ReadSeq}

let step5ReadPlan1 = Tuple{sourceAttr = self.ObjectItem.obj_item_id, targetAttr = self.Facility_Item.fac_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.ObjectItem, target = self.Facility_Item, multiplicity = 1, rdSeq = step5ReadSeq}

let constructionSequence = Sequence{self.ObjectItemType, step1, step2, step3, step4, step5}

```

Enclosing Transactional: Facility_Item_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier WatchPoint Type: Aggregation	ObjectItemType («Wrapper»)	Navigation Constraints: Tagged Values: isWatchPoint = TrueisIdentifier = True
Name: Type: Aggregation	Facility_Type («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Facility_Item_Enforced_ObjectItem}: inv: self.ObjectItem.object-item-category-code='FA' Tagged Values:
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: Facility_Type_Enforced_ObjectType}: inv: self.ObjectType.object-type-category-code='FA' Tagged Values:
Name: Type: Aggregation	Facility_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:

C.5.3 Facility_Position

The Facility_Position Transactional Artifact captures information about the association of a facility to a location so that the geographic position of the facility can be specified. This transactional encloses the Location_Composite Transactional Artifact to support the specification of the location in geometrical terms. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the location association is captured.

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id

Context ObjectItemLocation, inv ObjectItemLocation_Absolute_Reporting_Data:

self.object-item-id = self.ObjectItem.object-item-id

Context ObjectItemLocation, inv ObjectItemLocation_ObjectItem:

self.object-item-id = self.Facility.facility-id

Context ObjectItem, inv ObjectItem_Facility:

self.location-id = self.Location_Composite.Location.location-id

Context ObjectItemLocation, inv ObjectItemLocation_Location_Composite:

oclConstructionSequence

Context Facility_Position

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectItemLocation.loc_id, targetAttr = self.Location_Composite.loc_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ObjectItemLocation, target = self.Location_Composite, multiplicity = 1, rdSeq =
step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectItemLocation.rptd_id, targetAttr =
self.Absolute_Reporting_Data.rptd_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ObjectItemLocation, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq =
step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectItemLocation.obj_item_id, targetAttr = self.ObjectItem.obj_item_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ObjectItemLocation, target = self.ObjectItem, multiplicity = 1, rdSeq = step3ReadSeq}
```

```
let step4ReadPlan1 = Tuple{sourceAttr = self.ObjectItem.obj_item_id, targetAttr = self.Facility_Item.fac_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.ObjectItem, target = self.Facility_Item, multiplicity = 1, rdSeq = step4ReadSeq}
```

```
let constructionSequence = Sequence{self.ObjectItemLocation, step1, step2, step3, step4}
```

Enclosing Transactional: Facility_Position

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier WatchPoint Type: Aggregation	ObjectItemLocation («Wrapper»)	Navigation Constraints: Tagged Values: isWatchPoint = TrueisIdentifier = True
Name: Type: Aggregation	Location_Composite («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Facility_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Facility_Item_Enforced_ObjectItem}: inv: self.ObjectItem.object-item-category-code='FA' Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:

C.5.4 Facility_Status

The Facility_Status Transactional Artifact captures information about the condition or status of a specific Facility. The status information captured pertains primarily to the operational status and usage of the facility, although it also conveys the status of enemy action around or at the facility, and its safety status. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the location association is captured.

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id
Context ObjectItemStatus, inv ObjectItemStatus_Absolute_Reporting_Data:

self.object-item-id = self.ObjectItem.object-item-id
Context ObjectItemStatus, inv ObjectItemStatus_ObjectItem:

self.object-item-id = self.FacilityStatus.facility-status-id and self.object-item-status-index = self.FacilityStatus.object-item-status-index

Context ObjectItemStatus, inv ObjectItemStatus_FacilityStatus:

self.facility-status-id = self.MinefieldMaritimeStatus.minefield-maritime-status-id and self.object-item-status-index = self.MinefieldMaritimeStatus.object-item-status-index

Context FacilityStatus, inv FacilityStatus_MinefieldMaritimeStatus:

self.facility-status-id = self.Medical_Facility_Status_Composite.MedicalFacilityStatus.medical-facility-status-id and self.object-item-status-index = self.Medical_Facility_Status_Composite.MedicalFacilityStatus.object-item-status-index

Context FacilityStatus, inv FacilityStatus_Medical_Facility_Status_Composite:

self.facility-status-id = self.AirfieldStatus.airfield-status-id and self.object-item-status-index = self.AirfieldStatus.object-item-status-index

Context FacilityStatus, inv FacilityStatus_AirfieldStatus:

oclConstructionSequence

Context Facility_Status

let step1ReadPlan1 = Tuple{sourceAttr = self.FacilityStatus.fac_stat_id, targetAttr = self.Medical_Facility_Status_Composite.mfs_id}

let step1ReadPlan2 = Tuple{sourceAttr = self.FacilityStatus.obj_item_stat_ix, targetAttr = self.Medical_Facility_Status_Composite.obj_item_stat_ix}

let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2}

let step1 = Tuple{source = self.FacilityStatus, target = self.Medical_Facility_Status_Composite, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.FacilityStatus.fac_stat_id, targetAttr = self.ObjectItemStatus.obj_item_id}

let step2ReadPlan2 = Tuple{sourceAttr = self.FacilityStatus.obj_item_stat_ix, targetAttr = self.ObjectItemStatus.obj_item_stat_ix}

let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2}

let step2 = Tuple{source = self.FacilityStatus, target = self.ObjectItemStatus, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectItemStatus.rptd_id, targetAttr = self.Absolute_Reporting_Data.rptd_id}

let step3ReadSeq = Sequence{ step3ReadPlan1}

let step3 = Tuple{source = self.ObjectItemStatus, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.ObjectItemStatus.obj_item_id, targetAttr = self.ObjectItem.obj_item_id}

let step4ReadSeq = Sequence{ step4ReadPlan1}

let step4 = Tuple{source = self.ObjectItemStatus, target = self.ObjectItem, multiplicity = 1, rdSeq = step4ReadSeq}

let step5ReadPlan1 = Tuple{sourceAttr = self.FacilityStatus.fac_stat_id, targetAttr = self.AirfieldStatus.airfield_stat_id}

let step5ReadPlan2 = Tuple{sourceAttr = self.FacilityStatus.obj_item_stat_ix, targetAttr = self.AirfieldStatus.obj_item_stat_ix}

let step5ReadSeq = Sequence{ step5ReadPlan1, step5ReadPlan2}

let step5 = Tuple{source = self.FacilityStatus, target = self.AirfieldStatus, multiplicity = 1, rdSeq = step5ReadSeq}

let step6ReadPlan1 = Tuple{sourceAttr = self.FacilityStatus.fac_stat_id, targetAttr = self.MinefieldMaritimeStatus.mnfld_mrt_stat_id}

let step6ReadPlan2 = Tuple{sourceAttr = self.FacilityStatus.obj_item_stat_ix, targetAttr = self.MinefieldMaritimeStatus.obj_item_stat_ix}

let step6ReadSeq = Sequence{ step6ReadPlan1, step6ReadPlan2}

```

let step6ReadSeq = Sequence{ step6ReadPlan1, step6ReadPlan2}
let step6 = Tuple{source = self.FacilityStatus, target = self.MinefieldMaritimeStatus, multiplicity = 1, rdSeq =
step6ReadSeq}

```

```

let constructionSequence = Sequence{self.FacilityStatus, step1, step2, step3, step4, step5, step6}

```

Enclosing Transaction: Facility_Status

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	MedicalFacilityStatus («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	MinefieldMaritime («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	AirfieldStatus («Wrapper»)	Navigation Constraints: FacilityStatus_Discriminator_AirfieldStatus: inv: self.FacilityStatus.facility-status-category-code='AIRFST' Tagged Values:
Name: Type: Aggregation	MinefieldMaritimeStatus («Wrapper»)	Navigation Constraints: FacilityStatus_Discriminator_MinefieldMaritimeStatus: inv: self.FacilityStatus.facility-status-category-code='MNMMAST' Tagged Values:
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Facility_Item_Enforced_ObjectItem: inv: self.ObjectItem.object-item-category-code='FA' Tagged Values:
Name: WatchPoint Type: Aggregation	ObjectItemStatus («Wrapper»)	Navigation Constraints: Tagged Values: isWatchPoint = True

Name: Identifier Type: Aggregation	FacilityStatus («Wrapper»)	Navigation Constraints: ObjectItemStatus_Discriminator_FacilityStatus}: inv: self.ObjectItemStatus.object-item-status-category-code='FA' Tagged Values: isIdentifier = True
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Medical_Facility_Status_C omposite («Transactional»)	Navigation Constraints: FacilityStatus_Discriminator_Medical_Facility_Status_Composite}: inv: self.FacilityStatus.facility-status-category-code='MEDFST' Tagged Values:
Name: Type: Aggregation	Facility_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.5.5 Facility_Type

The Facility_Type Transactional Artifact captures information about a specific type of Facility that is of military interest and is built, installed or established to serve some particular propose, and is identified by the service it provides rather than by its content. There are many types of Facility, but only four: Airfield Type, Bridge Type, Harbor Type, and Military Obstacle Type have additional information characteristics that result in their specifications as separate subtypes of Facility Type.

self.facility-type-id = self.HarbourType.harbour-type-id
Context FacilityType, inv FacilityType_HarbourType:

self.facility-type-id = self.MilitaryObstacleType.military-obstacle-type-id
Context FacilityType, inv FacilityType_MilitaryObstacleType:

self.facility-type-id = self.BridgeType.bridge-type-id
Context FacilityType, inv FacilityType_BridgeType:

self.facility-type-id = self.AirfieldType.airfield-type-id
Context FacilityType, inv FacilityType_AirfieldType:

oclConstructionSequence

Context Facility_Type
let step1ReadPlan1 = Tuple{sourceAttr = self.FacilityType.fac_type_id, targetAttr = self.ObjectType.obj_type_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}

```

let step1 = Tuple{source = self.FacilityType, target = self.ObjectType, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.FacilityType.fac_type_id, targetAttr = self.BridgeType.bridge_type_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.FacilityType, target = self.BridgeType, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.FacilityType.fac_type_id, targetAttr = self.AirfieldType.airfield_type_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.FacilityType, target = self.AirfieldType, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.FacilityType.fac_type_id, targetAttr =
self.MilitaryObstacleType.mil_obs_type_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.FacilityType, target = self.MilitaryObstacleType, multiplicity = 1, rdSeq = step4ReadSeq}

let step5ReadPlan1 = Tuple{sourceAttr = self.FacilityType.fac_type_id, targetAttr = self.HarbourType.hrbr_type_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.FacilityType, target = self.HarbourType, multiplicity = 1, rdSeq = step5ReadSeq}

let constructionSequence = Sequence{self.FacilityType, step1, step2, step3, step4, step5}

```

self.facility-type-id = self.ObjectType.object-type-id
Context FacilityType, inv FacilityType_ObjectType:

Enclosing Transactional: Facility_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	BridgeType («Wrapper»)	Navigation Constraints: FacilityType_Discriminator_BridgeType: inv: self.FacilityType.facility-type-category-code='BRGTYP' Tagged Values:
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: FacilityType_Enforced_ObjectType: inv: self.ObjectType.object-type-category-code='FA' Tagged Values:
Name: Type: Aggregation	MilitaryObstacleType («Wrapper»)	Navigation Constraints: FacilityType_Discriminator_MilitaryObstacleType: inv: self.FacilityType.facility-type-category-code='MILOBS' Tagged Values:

Name: Identifier Type: Aggregation	FacilityType («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	AirfieldType («Wrapper»)	Navigation Constraints: FacilityType_Discriminator_AirfieldType: inv: self.FacilityType.facility-type-category-code='AIRFLD' Tagged Values:
Name: Type: Aggregation	HarbourType («Wrapper»)	Navigation Constraints: FacilityType_Discriminator_HarbourType: inv: self.FacilityType.facility-type-category-code='HARBOR' Tagged Values:

C.5.6 MFSI_Casualty_Group

The MFSI Casualty Group Transactional Artifact captures information about a specific casualty group status of Medical Facility during a prescribed interval. It is a support transactional in the Medical_Facility_Status_Composite Transactional Artifact.

oclConstructionSequence

Context MFSI_Casualty_Group

```
let constructionSequence = Sequence{self.MedicalFacilityStatusIntervalCasualtyGroup}
```

Enclosing Transactional: MFSI_Casualty_Group

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Identifier WatchPoint Type: Aggregation	MedicalFacilityStatusIntervalCasualtyGroup («Wrapper»)	Navigation Constraints: Tagged Values: isWatchPoint = TrueisIdentifier = True
--	--	---

C.5.7 MFSI_Casualty_Type

The MFSI_Casualty_Type Transactional Artifact captures information about a specific casualty type status of Medical Facility during a prescribed interval. It is a support transactional in the Medical_Facility_Status_Composite Transactional Artifact.

oclConstructionSequence

Context MFSI_Casualty_Type

```
let constructionSequence = Sequence{self.MedicalFacilityStatusIntervalCasualtyType}
```

Enclosing Transactional: MFSI_Casualty_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier Type: Aggregation	MedicalFacilityStatusIntervalCasualtyType («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True

C.5.8 MFSI_Evacuation

The MFSI_Evacuation Transactional Artifact captures information about a about a specific casualty evacuation status of Medical Facility during a prescribed interval. It is a support transactional in the Medical_Facility_Status_Composite Transactional Artifact.

oclConstructionSequence

Context MFSI_Evacuation

```
let constructionSequence = Sequence{self.MedicalFacilityStatusIntervalEvacuation}
```

Enclosing Transactional: MFSI_Evacuation

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Identifier Type: Aggregation	MedicalFacilityStatusIntervalEvacuation («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
---	--	--

C.5.9 MFS_Casualty_Bed_Occupancy

The MFS_Casualty_Bed_Occupancy Transactional Artifact captures information about the casualty bed occupancy status of Medical Facility. It is a support transactional in the Medical_Facility_Status_Composite Transactional Artifact.

oclConstructionSequence

Context MFS_Casualty_Bed_Occupancy

```
let constructionSequence = Sequence{self.MedicalFacilityStatusCasualtyBedOccupancy}
```

Enclosing Transactional: MFS_Casualty_Bed_Occupancy

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Identifier Type: Aggregation	MedicalFacilityStatusCasualtyBedOccupancy («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
---	--	--

C.5.10 MFS_Pending_Casualty_Evacuation

The MFS_Pending_Casualty_Evacuation Transactional Artifact captures information about the pending casualty evacuation status of Medical Facility. It is a support transactional in the Medical_Facility_Status_Composite Transactional Artifact.

oclConstructionSequence

Context MFS_Pending_Casualty_Evacuation

```
let constructionSequence = Sequence{self.MedicalFacilityStatusPendingCasualtyEvacuation}
```

Enclosing Transactional: MFS_Pending_Casualty_Evacuation

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier WatchPoint Type: Aggregation	MedicalFacilityStatusPendingCasualty Evacuation («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True

C.5.11 MFS_Pending_Surgery

The MFS_Pending_Surgery Transactional Artifact captures information about the casualty pending surgery status of Medical Facility. It is a support transactional in the Medical_Facility_Status_Composite Transactional Artifact.

oclConstructionSequence

Context MFS_Pending_Surgery

```
let constructionSequence = Sequence{self.MedicalFacilityStatusPendingSurgery}
```

Enclosing Transactional: MFS_Pending_Surgery

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier Type: Aggregation	MedicalFacilityStatusPendingSurgery («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True+

C.5.12 Medical_Facility_Status_Composite

The Medical_Facility_Status_Composite Transactional Artifact captures information about the condition or status of a number of aspects in a medical facility where the statuses are provided as point counts (e.g. bed-occupancy count), and interval counts (e.g. new patient arrivals in the interval). The point counts that comprise the Medical Facility Status

(MFS) are grouped into three child transactionals: , MFS_Pending_Surgery, MFS_Casualty_Bed_Occupancy, and MFS_Pending_Casualty_Evacuation, as are the interval counts: MFSI_Casualty_Group, MFSI_Casualty_Type, and MFSI_Evacuation.

oclConstructionSequence

Context Medical_Facility_Status_Composite

```
let step1ReadPlan1 = Tuple{sourceAttr = self.MedicalFacilityStatus.mfs_id, targetAttr =
self.MFS_Pending_Surgery.mfs_id}
let step1ReadPlan2 = Tuple{sourceAttr = self.MedicalFacilityStatus.obj_item_stat_ix, targetAttr =
self.MFS_Pending_Surgery.obj_item_stat_ix}
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2}
let step1 = Tuple{source = self.MedicalFacilityStatus, target = self.MFS_Pending_Surgery, multiplicity = 0..*, rdSeq =
step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.MedicalFacilityStatus.mfs_id, targetAttr =
self.MFS_Pending_Casualty_Evacuation.mfs_id}
let step2ReadPlan2 = Tuple{sourceAttr = self.MedicalFacilityStatus.obj_item_stat_ix, targetAttr =
self.MFS_Pending_Casualty_Evacuation.obj_item_stat_ix}
let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2}
let step2 = Tuple{source = self.MedicalFacilityStatus, target = self.MFS_Pending_Casualty_Evacuation, multiplicity = 0..*,
rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.MedicalFacilityStatus.mfs_id, targetAttr =
self.MFS_Casualty_Bed_Occupancy.mfs_id}
let step3ReadPlan2 = Tuple{sourceAttr = self.MedicalFacilityStatus.obj_item_stat_ix, targetAttr =
self.MFS_Casualty_Bed_Occupancy.obj_item_stat_ix}
let step3ReadSeq = Sequence{ step3ReadPlan1, step3ReadPlan2}
let step3 = Tuple{source = self.MedicalFacilityStatus, target = self.MFS_Casualty_Bed_Occupancy, multiplicity = 0..*,
rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.MedicalFacilityStatus.mfs_id, targetAttr = self.MFSI_Evacuation.mfs_id}
let step4ReadPlan2 = Tuple{sourceAttr = self.MedicalFacilityStatus.obj_item_stat_ix, targetAttr =
self.MFSI_Evacuation.obj_item_stat_ix}
let step4ReadSeq = Sequence{ step4ReadPlan1, step4ReadPlan2}
let step4 = Tuple{source = self.MedicalFacilityStatus, target = self.MFSI_Evacuation, multiplicity = 0..*, rdSeq =
step4ReadSeq}

let step5ReadPlan1 = Tuple{sourceAttr = self.MedicalFacilityStatus.mfs_id, targetAttr = self.MFSI_Casualty_Type.mfs_id}
let step5ReadPlan2 = Tuple{sourceAttr = self.MedicalFacilityStatus.obj_item_stat_ix, targetAttr =
self.MFSI_Casualty_Type.obj_item_stat_ix}
let step5ReadSeq = Sequence{ step5ReadPlan1, step5ReadPlan2}
let step5 = Tuple{source = self.MedicalFacilityStatus, target = self.MFSI_Casualty_Type, multiplicity = 0..*, rdSeq =
step5ReadSeq}

let step6ReadPlan1 = Tuple{sourceAttr = self.MedicalFacilityStatus.mfs_id, targetAttr =
self.MFSI_Casualty_Group.mfs_id}
let step6ReadPlan2 = Tuple{sourceAttr = self.MedicalFacilityStatus.obj_item_stat_ix, targetAttr =
self.MFSI_Casualty_Group.obj_item_stat_ix}
let step6ReadSeq = Sequence{ step6ReadPlan1, step6ReadPlan2}
let step6 = Tuple{source = self.MedicalFacilityStatus, target = self.MFSI_Casualty_Group, multiplicity = 0..*, rdSeq =
step6ReadSeq}

let constructionSequence = Sequence{self.MedicalFacilityStatus, step1, step2, step3, step4, step5, step6}
```

self.medical-facility-status-id = self.MFSI_Evacuation.MedicalFacilityStatusIntervalEvacuation.medical-facility-status-id and self.object-item-status-index = self.MFSI_Evacuation.MedicalFacilityStatusIntervalEvacuation.object-item-status-index

Context MedicalFacilityStatus, inv MedicalFacilityStatus_MFSI_Evacuation:

self.medical-facility-status-id = self.MFS_Pending_Surgery.MedicalFacilityStatusPendingSurgery.medical-facility-status-id and self.object-item-status-index = self.MFS_Pending_Surgery.MedicalFacilityStatusPendingSurgery.object-item-status-index

Context MedicalFacilityStatus, inv MedicalFacilityStatus_MFS_Pending_Surgery:

self.medical-facility-status-id = self.MFSI_Casualty_Type.MedicalFacilityStatusIntervalCasualtyType.medical-facility-status-id and self.object-item-status-index = self.MFSI_Casualty_Type.MedicalFacilityStatusIntervalCasualtyType.object-item-status-index

Context MedicalFacilityStatus, inv MedicalFacilityStatus_MFSI_Casualty_Type:

Enclosing Transactional: Medical_Facility_Status_Composite

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	MFS_Casualty_Bed_Occupancy («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	MFS_Pending_Casualty_Evacuation («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	MFS_Pending_Surgery («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	MFSI_Evacuation («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	MFSI_Casualty_Group («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	MFSI_Casualty_Type («Transactional»)	Navigation Constraints: Tagged Values:

Name: Identifier Type: Aggregation	MedicalFacilityStatus («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
---	-----------------------------------	--

C.5.13 Military_Obstacle

The Military_Obstacle Transactional Artifact captures information about a class of man-made devices or passive defense works that are designed to stop, impede, or divert the movement of amphibious or ground forces. This transactional encloses two supporting Transactional Artifacts; Minefield_Maritime_Casualty_Estimate, and Minefield_Maritime_Sustained_Threat_Measure_Of_Effectiveness.

self.minefield-maritime-id =

self.Minefield_Maritime_Sustained_Threat_Measure_Of_Effectiveness.MinefieldMaritimeSustainedThreatMeasureOfEffectiveness.minefield-maritime-id

Context MinefieldMaritime, inv MinefieldMaritime_Minefield_Maritime_Sustained_Threat_Measure_Of_Effectiveness:

self.minefield-maritime-id = self.Minefield_Maritime_Casualty_Estimate.MinefieldMaritimeCasualtyEstimate.minefield-maritime-id

Context MinefieldMaritime, inv MinefieldMaritime_Minefield_Maritime_Casualty_Estimate:

self.minefield-id = self.MinefieldMaritime.minefield-maritime-id

Context Minefield, inv Minefield_MinefieldMaritime:

self.minefield-id = self.MinefieldLand.minefield-land-id

Context Minefield, inv Minefield_MinefieldLand:

self.military-obstacle-id = self.Minefield.minefield-id

Context MilitaryObstacle, inv MilitaryObstacle_Minefield:

self.military-obstacle-id = self.Facility.facility-id

Context MilitaryObstacle, inv MilitaryObstacle_Facility:

self.facility-id = self.ObjectItem.object-item-id

Context Facility, inv Facility_ObjectItem:

oclConstructionSequence

Context Military_Obstacle

```
let step1ReadPlan1 = Tuple{sourceAttr = self.MilitaryObstacle.mil_obs_id, targetAttr = self.Minefield.mnfld_id}
```

```
let step1ReadSeq = Sequence{ step1ReadPlan1}
```

```
let step1 = Tuple{source = self.MilitaryObstacle, target = self.Minefield, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.Minefield.mnfld_id, targetAttr = self.MinefieldMaritime.mnfld_mrt_id}
```

```
let step2ReadSeq = Sequence{ step2ReadPlan1}
```

```

let step2 = Tuple{source = self.Minefield, target = self.MinefieldMaritime, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.MinefieldMaritime.mnfld_mrt_id, targetAttr =
self.Minefield_Maritime_Sustained_Threat_Measure_Of_Effectiveness.mnfld_mrt_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.MinefieldMaritime, target =
self.Minefield_Maritime_Sustained_Threat_Measure_Of_Effectiveness, multiplicity = 0..*, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.MinefieldMaritime.mnfld_mrt_id, targetAttr =
self.Minefield_Maritime_Casualty_Estimate.mnfld_mrt_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.MinefieldMaritime, target = self.Minefield_Maritime_Casualty_Estimate, multiplicity = 0..*,
rdSeq = step4ReadSeq}

let step5ReadPlan1 = Tuple{sourceAttr = self.Minefield.mnfld_id, targetAttr = self.MinefieldLand.mnfld_land_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.Minefield, target = self.MinefieldLand, multiplicity = 1, rdSeq = step5ReadSeq}

let step6ReadPlan1 = Tuple{sourceAttr = self.MilitaryObstacle.mil_obs_id, targetAttr = self.Facility.fac_id}
let step6ReadSeq = Sequence{ step6ReadPlan1}
let step6 = Tuple{source = self.MilitaryObstacle, target = self.Facility, multiplicity = 1, rdSeq = step6ReadSeq}

let step7ReadPlan1 = Tuple{sourceAttr = self.Facility.fac_id, targetAttr = self.ObjectItem.obj_item_id}
let step7ReadSeq = Sequence{ step7ReadPlan1}
let step7 = Tuple{source = self.Facility, target = self.ObjectItem, multiplicity = 1, rdSeq = step7ReadSeq}

let constructionSequence = Sequence{self.MilitaryObstacle, step1, step2, step3, step4, step5, step6, step7}

```

Enclosing Transactional: Military_Obstacle

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Minefield_Maritime_Casualty_Estimate («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	MinefieldMaritime («Wrapper»)	Navigation Constraints: Minefield_Discriminator_MinefieldMaritime}: inv: self.Minefield.minefield-category-code='MNF MRT' Tagged Values:

Name: Type: Aggregation	MinefieldLand («Wrapper»)	Navigation Constraints: Minefield_Discriminator_MinefieldLand}; inv: self.Minefield.minefield-category-code='MNFLND' Tagged Values:
Name: Type: Aggregation	Facility («Wrapper»)	Navigation Constraints: MilitaryObstacle_Enforced_Facility}; inv: self.Facility.facility-category-code='MILOBS' Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	MilitaryObstacle («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Facility_Enforced_ObjectItem}; inv: self.ObjectItem.object-item-category-code='FA' Tagged Values:
Name: Type: Aggregation	Minefield_Maritime_Sustained_Threat_Measure_Of_Effectiveness («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Minefield («Wrapper»)	Navigation Constraints: MilitaryObstacle_Discriminator_Minefield}; inv: self.MilitaryObstacle.military-obstacle-category-code='MNFLD' Tagged Values:

C.5.14 Minefield_Maritime_Casualty_Estimate

The Minefield_Maritime_Casualty_Estimate Transactional Artifact captures information about a maritime minefield, which is a type of military obstacle. This transactional is a support transactional on the Military_Obstacle Transactional Artifact

oclConstructionSequence

Context Minefield_Maritime_Casualty_Estimate

```
let constructionSequence = Sequence{self.MinefieldMaritimeCasualtyEstimate}
```

Enclosing Transactional: Minefield_Maritime_Casualty_Estimate

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Identifier Type: Aggregation	MinefieldMaritimeCasualtyEstimate («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
---	--	--

C.5.15 Minefield_Maritime_Sustained_Threat_Measure_Of_Effectiveness

The Minefield_Maritime_Sustained_Threat_Measure_Of_Effectiveness Transactional Artifact captures information about a maritime minefield, which is a type of military obstacle. This transactional is a support transactional on the Military_Obstacle Transactional Artifact.

oclConstructionSequence

Context Minefield_Maritime_Sustained_Threat_Measure_Of_Effectiveness

```
let constructionSequence = Sequence{self.MinefieldMaritimeSustainedThreatMeasureOfEffectiveness}
```

Enclosing Transactional: Minefield_Maritime_Sustained_Threat_Measure_Of_Effectiveness

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Identifier Type: Aggregation	MinefieldMaritimeSustainedThreatMeasureOfEffectiveness («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
---	---	--

C.5.16 Network_Facility_Capacity

The Network_Facility_Capacity Transactional Artifact captures information about the capacity of a Network Facility. This transactional is a support transactional on the Network_Facility_Item Transactional Artifact.

oclConstructionSequence

Context Network_Facility_Capacity

let constructionSequence = Sequence{self.NetworkCapacity}

Enclosing Transactional: Network_Facility_Capacity

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Identifier Type: Aggregation	NetworkCapacity («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
---	-----------------------------	--

C.5.17 Network_Facility_Frequency

The Network_Facility_Frequency Transactional Artifact captures information about the frequencies used by a Network Facility. This transactional is a support transactional on the Network_Facility_Item Transactional Artifact.

oclConstructionSequence

Context Network_Facility_Frequency

let constructionSequence = Sequence{self.NetworkFrequency}

Enclosing Transactional: Network_Facility_Frequency

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Identifier Type: Aggregation	NetworkFrequency («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
---	------------------------------	--

C.5.18 Network_Facility_Item

The Network_Facility_Item Transactional Artifact captures information about a specific Network Facility. This transactional encloses two supporting Transactional Artifact Network_Facility_Capacity and Network_Facility_Frequency.

self.network-id = self.Network_Facility_Frequency.NetworkFrequency.network-id

Context Network, inv Network_Network_Facility_Frequency:

self.network-id = self.Network_Facility_Capacity.NetworkCapacity.network-id

Context Network, inv Network_Network_Facility_Capacity:

self.network-id = self.Facility.facility-id

Context Network, inv Network_Facility:

self.facility-id = self.ObjectItem.object-item-id

Context Facility, inv Facility_ObjectItem:

oclConstructionSequence

Context Network_Facility_Item

```
let step1ReadPlan1 = Tuple{sourceAttr = self.Network.netwrk_id, targetAttr = self.Network_Facility_Frequency.netwrk_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.Network, target = self.Network_Facility_Frequency, multiplicity = 1..*, rdSeq =
step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.Network.netwrk_id, targetAttr = self.Network_Facility_Capacity.netwrk_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.Network, target = self.Network_Facility_Capacity, multiplicity = 1..*, rdSeq =
step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.Network.netwrk_id, targetAttr = self.Facility.fac_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.Network, target = self.Facility, multiplicity = 1, rdSeq = step3ReadSeq}
```

```
let step4ReadPlan1 = Tuple{sourceAttr = self.Facility.fac_id, targetAttr = self.ObjectItem.obj_item_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.Facility, target = self.ObjectItem, multiplicity = 1, rdSeq = step4ReadSeq}
```

```
let constructionSequence = Sequence{self.Network, step1, step2, step3, step4}
```

Enclosing Transactional: Network_Facility_Item

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier WatchPoint Type: Aggregation	Network («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True isWatchPoint = True
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Facility_Enforced_ObjectItem}: inv: self.ObjectItem.object-item-category-code='FA' Tagged Values:
Name: Type: Aggregation	NetworkCapacity («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Facility («Wrapper»)	Navigation Constraints: Network_Enforced_Facility}: inv: self.Facility.facility-category-code='NETWRK' Tagged Values:
Name: Type: Aggregation	NetworkFrequency («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Network_Facility_Capacity («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Network_Facility_Frequency («Transactional»)	Navigation Constraints: Tagged Values:

C.5.19 Network_Facility_Service

The Network_Facility_Service Transactional Artifact captures information about the specific type of communications service provided by the specific network. This transactional encloses the Network_Facility_Item Transactional Artifact.

self.security-classification-id = self.SecurityClassification.security-classification-id

Context NetworkService, inv NetworkService_SecurityClassification:

self.network-id = self.Network_Facility_Item.Network.network-id

Context NetworkService, inv NetworkService_Network_Facility_Item:

oclConstructionSequence

Context Network_Facility_Service

```
let step1ReadPlan1 = Tuple{sourceAttr = self.NetworkService.netwrk_id, targetAttr =
self.Network_Facility_Item.netwrk_id}
```

```
let step1ReadSeq = Sequence{ step1ReadPlan1}
```

```
let step1 = Tuple{source = self.NetworkService, target = self.Network_Facility_Item, multiplicity = 1, rdSeq =
step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.NetworkService.security_clsfc_id, targetAttr =
self.SecurityClassification.security_clsfc_id}
```

```
let step2ReadSeq = Sequence{ step2ReadPlan1}
```

```
let step2 = Tuple{source = self.NetworkService, target = self.SecurityClassification, multiplicity = 1, rdSeq =
step2ReadSeq}
```

```
let constructionSequence = Sequence{self.NetworkService, step1, step2}
```

Enclosing Transactional: Network_Facility_Service

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Identifier Type: Aggregation	NetworkService («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	SecurityClassification («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Network_Facility_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.5.20 Network_Facility_Service_Status

The Network_Facility_Service_Status Transactional Artifact captures the perceived condition of a specific network service as determined by the reporting organization. The status indicates whether or not the specific network service is active. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the status report is captured.

self.network-id = self.Network_Facility_Item.Network.network-id
Context NetworkService, inv NetworkService_Network_Facility_Item:

self.network-id = self.NetworkService.network-id and self.network-service-index = self.NetworkService.network-service-index
Context NetworkServiceStatus, inv NetworkServiceStatus_NetworkService:

oclConstructionSequence

Context Network_Facility_Service_Status

```
let step1ReadPlan1 = Tuple{sourceAttr = self.NetworkServiceStatus.rptd_id, targetAttr =
self.Absolute_Reporting_Data.rptd_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.NetworkServiceStatus, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq =
step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.NetworkServiceStatus.netwrk_id, targetAttr =
self.NetworkService.netwrk_id}
let step2ReadPlan2 = Tuple{sourceAttr = self.NetworkServiceStatus.netwrk_service_ix, targetAttr =
self.NetworkService.netwrk_service_ix}
let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2}
let step2 = Tuple{source = self.NetworkServiceStatus, target = self.NetworkService, multiplicity = 1, rdSeq =
step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.NetworkService.netwrk_id, targetAttr =
self.Network_Facility_Item.netwrk_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.NetworkService, target = self.Network_Facility_Item, multiplicity = 1, rdSeq =
step3ReadSeq}
```

```
let constructionSequence = Sequence{self.NetworkServiceStatus, step1, step2, step3}
```

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id
Context NetworkServiceStatus, inv NetworkServiceStatus_Absolute_Reporting_Data:

Enclosing Transactional: Network_Facility_Service_Status

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier WatchPoint Type: Aggregation	NetworkServiceStatus («Wrapper»)	Navigation Constraints: Tagged Values: isWatchPoint = TrueisIdentifier = True
Name: Type: Aggregation	NetworkService («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Network_Facility_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:

C.5.21 Runway_Approach_Direction_Assoc

The Runway_Approach_Direction Transactional Artifact captures information about the association between a runway (a facility) and an approach-direction (a control-feature that specifies approach directional details for takeoff and landing).

self.runway-id = self.Facility.facility-id
Context Runway, inv Runway_Facility:

self.feature-id = self.ObjectItem.object-item-id
Context Feature, inv Feature_ObjectItem:

self.facility-id = self.ObjectItem.object-item-id
Context Facility, inv Facility_ObjectItem:

self.control-feature-id = self.Feature.feature-id
Context ControlFeature, inv ControlFeature_Feature:

self.approach-direction-id = self.ControlFeature.control-feature-id
Context ApproachDirection, inv ApproachDirection_ControlFeature:

self.approach-direction-id = self.ApproachDirection.approach-direction-id

Context RunwayApproachDirectionAssociation, inv RunwayApproachDirectionAssociation_ApproachDirection:

oclConstructionSequence

Context Runway_Approach_Direction_Assoc

```

let step1ReadPlan1 = Tuple{sourceAttr = self.RunwayApproachDirectionAssociation.appr_dir_id, targetAttr =
self.ApproachDirection.appr_dir_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.RunwayApproachDirectionAssociation, target = self.ApproachDirection, multiplicity = 1,
rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ApproachDirection.appr_dir_id, targetAttr = self.ControlFeature.ctrl_feat_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ApproachDirection, target = self.ControlFeature, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ControlFeature.ctrl_feat_id, targetAttr = self.Feature.feat_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ControlFeature, target = self.Feature, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.Feature.feat_id, targetAttr = self.ObjectItem.obj_item_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.Feature, target = self.ObjectItem, multiplicity = 1, rdSeq = step4ReadSeq}

let step5ReadPlan1 = Tuple{sourceAttr = self.ObjectItem.obj_item_id, targetAttr = self.Facility.fac_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.ObjectItem, target = self.Facility, multiplicity = 1, rdSeq = step5ReadSeq}

let step6ReadPlan1 = Tuple{sourceAttr = self.Facility.fac_id, targetAttr = self.Runway.runway_id}
let step6ReadSeq = Sequence{ step6ReadPlan1}
let step6 = Tuple{source = self.Facility, target = self.Runway, multiplicity = 1, rdSeq = step6ReadSeq}

let step7ReadPlan1 = Tuple{sourceAttr = self.RunwayApproachDirectionAssociation.runway_id, targetAttr =
self.Runway.runway_id}
let step7ReadSeq = Sequence{ step7ReadPlan1}
let step7 = Tuple{source = self.RunwayApproachDirectionAssociation, target = self.Runway, multiplicity = 1, rdSeq =
step7ReadSeq}

let constructionSequence = Sequence{self.RunwayApproachDirectionAssociation, step1, step2, step3, step4, step5,
step6, step7}

```

self.runway-id = self.Runway.runway-id

Context RunwayApproachDirectionAssociation, inv RunwayApproachDirectionAssociation_Runway:

Enclosing Transactional: Runway_Approach_Direction_Assoc

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier WatchPoint Type: Aggregation	RunwayApproachDirection Association («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Feature_Enforced_ObjectItem}; inv: self.ObjectItem.object-item-category-code='FE' Tagged Values:
Name: Type: Aggregation	Facility («Wrapper»)	Navigation Constraints: Runway_Enforced_Facility}; inv: self.Facility.facility-category-code='RUNWAY' Tagged Values:
Name: Type: Aggregation	Feature («Wrapper»)	Navigation Constraints: ControlFeature_Enforced_Feature}; inv: self.Feature.feature-category-code='CF' Tagged Values:
Name: Type: Aggregation	ControlFeature («Wrapper»)	Navigation Constraints: ApproachDirection_Enforced_ControlFeature}; inv: self.ControlFeature.control-feature-category-code='APPRDR' Tagged Values:
Name: Type: Aggregation	ApproachDirection («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Runway («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Runway_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ApproachDirection_Item («Transactional»)	Navigation Constraints: Tagged Values:

Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Facility_Enforced_ObjectItem}: inv: self.ObjectItem.object-item-category-code='FA' Tagged Values:
--	------------------------	--

C.5.22 Runway_Item

The Runway_Item Transactional Artifact captures information about an individually identified instance of a Runway which can be utilized to assess the capabilities of the individual facility for aircraft landing and take-off.

Runway_Approach_Direction_Assoc is a support transactional of Transactional Artifact Runway_Approach_Direction_Assoc.

Enclosing Transactional: Runway_Item

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier Type: Aggregation	Runway («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	Facility («Wrapper»)	Navigation Constraints: Runway_Enforced_Facility}: inv: self.Facility.facility-category-code='RUNWAY' Tagged Values:
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Facility_Enforced_ObjectItem}: inv: self.ObjectItem.object-item-category-code='FA' Tagged Values:

C.6 GeographicFeature

C.6.1 GeographicFeature_Item

The GeographicFeature_Item Transactional Artifact captures information about an individually identified instance of feature describing terrain characteristics to which military significance is attached. The information maintained in this transactional concerns characteristics of the surface such as its type, hardness, and composition, and terrain characteristics such as the vegetation cover or whether it is hilly or flat.

self.object-item-id = self.ObjectItemAlias.object-item-id

Context ObjectItem, inv ObjectItem_ObjectItemAlias:

self.geographic-feature-id = self.Feature.feature-id

Context GeographicFeature, inv GeographicFeature_Feature:

self.feature-id = self.ObjectItem.object-item-id

Context Feature, inv Feature_ObjectItem:

oclConstructionSequence

Context GeographicFeature_Item

```
let step1ReadPlan1 = Tuple{sourceAttr = self.GeographicFeature.geo_feat_id, targetAttr = self.Feature.feat_id}
```

```
let step1ReadSeq = Sequence{ step1ReadPlan1}
```

```
let step1 = Tuple{source = self.GeographicFeature, target = self.Feature, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.Feature.feat_id, targetAttr = self.ObjectItem.obj_item_id}
```

```
let step2ReadSeq = Sequence{ step2ReadPlan1}
```

```
let step2 = Tuple{source = self.Feature, target = self.ObjectItem, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectItem.obj_item_id, targetAttr = self.ObjectItemAlias.obj_item_id}
```

```
let step3ReadSeq = Sequence{ step3ReadPlan1}
```

```
let step3 = Tuple{source = self.ObjectItem, target = self.ObjectItemAlias, multiplicity = 0..1, rdSeq = step3ReadSeq}
```

```
let constructionSequence = Sequence{self.GeographicFeature, step1, step2, step3}
```

Enclosing Transactional: GeographicFeature_Item

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Feature_Enforced_ObjectItem}: inv: self.ObjectItem.object-item-category-code='FE' Tagged Values:
Name: Type: Aggregation	ObjectItemAlias («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	GeographicFeature («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	Feature («Wrapper»)	Navigation Constraints: GeographicFeature_Enforced_Feature}: inv: self.Feature.feature-category-code='GF' Tagged Values:

C.6.2 GeographicFeature_Item_Type

The GeographicFeature_Item_Type Transactional Artifact captures information about the perceived classification of a specific geographic-feature-item as a specific geographic-feature-type. This transactional encloses the Absolute_Reporting_Data Transactional Artifact in which information about the type classification is captured.

self.feature-id = self.GeographicFeature_Item.GeographicFeature.geographic-feature-id
Context Feature, inv Feature_GeographicFeature_Item:

oclConstructionSequence

Context GeographicFeature_Item_Type

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectItemType.rptd_id, targetAttr = self.Absolute_Reporting_Data.rptd_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ObjectItemType, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectItemType.obj_type_id, targetAttr = self.ObjectType.obj_type_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ObjectItemType, target = self.ObjectType, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectType.obj_type_id, targetAttr = self.FeatureType.feat_type_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
```

```

let step3 = Tuple{source = self.ObjectType, target = self.FeatureType, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.FeatureType.feat_type_id, targetAttr =
self.GeographicFeature_Type.geo_feat_type_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.FeatureType, target = self.GeographicFeature_Type, multiplicity = 1, rdSeq =
step4ReadSeq}

let step5ReadPlan1 = Tuple{sourceAttr = self.ObjectItemType.obj_item_id, targetAttr = self.ObjectItem.obj_item_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.ObjectItemType, target = self.ObjectItem, multiplicity = 1, rdSeq = step5ReadSeq}

let step6ReadPlan1 = Tuple{sourceAttr = self.ObjectItem.obj_item_id, targetAttr = self.Feature.feat_id}
let step6ReadSeq = Sequence{ step6ReadPlan1}
let step6 = Tuple{source = self.ObjectItem, target = self.Feature, multiplicity = 1, rdSeq = step6ReadSeq}

let step7ReadPlan1 = Tuple{sourceAttr = self.Feature.feat_id, targetAttr = self.GeographicFeature_Item.geo_feat_id}
let step7ReadSeq = Sequence{ step7ReadPlan1}
let step7 = Tuple{source = self.Feature, target = self.GeographicFeature_Item, multiplicity = 1, rdSeq = step7ReadSeq}

let constructionSequence = Sequence{self.ObjectItemType, step1, step2, step3, step4, step5, step6, step7}

```

self.object-item-id = self.Feature.feature-id
Context ObjectItem, inv ObjectItem_Feature:

self.object-item-id = self.ObjectItem.object-item-id
Context ObjectItemType, inv ObjectItemType_ObjectItem:

self.feature-type-id = self.GeographicFeature_Type.GeographicFeatureType.geographic-feature-type-id
Context FeatureType, inv FeatureType_GeographicFeature_Type:

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id
Context ObjectItemType, inv ObjectItemType_Absolute_Reporting_Data:

self.object-type-id = self.ObjectType.object-type-id
Context ObjectItemType, inv ObjectItemType_ObjectType:

self.object-type-id = self.FeatureType.feature-type-id
Context ObjectType, inv ObjectType_FeatureType:

Enclosing Transactional: GeographicFeature_Item_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtyped (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	GeographicFeature_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Feature («Wrapper»)	Navigation Constraints: GeographicFeature_Item_Enforced_Feature}: inv: self.Feature.feature-category-code='GF' Tagged Values:
Name: Type: Aggregation	GeographicFeature_Type («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Feature_Enforced_ObjectItem}: inv: self.ObjectItem.object-item-category-code='FE' Tagged Values:
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: FeatureType_Enforced_ObjectType}: inv: self.ObjectType.object-type-category-code='FE' Tagged Values:
Name: Type: Aggregation	FeatureType («Wrapper»)	Navigation Constraints: GeographicFeature_Type_Enforced_FeatureType}: inv: self.FeatureType.feature-type-category-code='GF' Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ObjectItemType («Wrapper»)	Navigation Constraints: Tagged Values: isWatchPoint = TrueisIdentifier = True
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:

C.6.3 GeographicFeature_Position

The GeographicFeature_Position Transactional Artifact captures information about the association of a geographic-feature to a location so that the geographic position of the geographic-feature can be specified. This transactional encloses the Location_Composite Transactional Artifact to support the specification of the location in geometrical terms. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the location association is captured.

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id

Context ObjectItemLocation, inv ObjectItemLocation_Absolute_Reporting_Data:

self.object-item-id = self.ObjectItem.object-item-id

Context ObjectItemLocation, inv ObjectItemLocation_ObjectItem:

self.object-item-id = self.Feature.feature-id

Context ObjectItem, inv ObjectItem_Feature:

self.location-id = self.Location_Composite.Location.location-id

Context ObjectItemLocation, inv ObjectItemLocation_Location_Composite:

self.feature-id = self.GeographicFeature_Item.GeographicFeature.geographic-feature-id

Context Feature, inv Feature_GeographicFeature_Item:

oclConstructionSequence

Context GeographicFeature_Position

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectItemLocation.loc_id, targetAttr = self.Location_Composite.loc_id}
```

```
let step1ReadSeq = Sequence{ step1ReadPlan1}
```

```
let step1 = Tuple{source = self.ObjectItemLocation, target = self.Location_Composite, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectItemLocation.rptd_id, targetAttr =
```

```
self.Absolute_Reporting_Data.rptd_id}
```

```
let step2ReadSeq = Sequence{ step2ReadPlan1}
```

```
let step2 = Tuple{source = self.ObjectItemLocation, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectItemLocation.obj_item_id, targetAttr = self.ObjectItem.obj_item_id}
```

```
let step3ReadSeq = Sequence{ step3ReadPlan1}
```

```
let step3 = Tuple{source = self.ObjectItemLocation, target = self.ObjectItem, multiplicity = 1, rdSeq = step3ReadSeq}
```

```
let step4ReadPlan1 = Tuple{sourceAttr = self.ObjectItem.obj_item_id, targetAttr = self.Feature.feat_id}
```

```
let step4ReadSeq = Sequence{ step4ReadPlan1}
```

```
let step4 = Tuple{source = self.ObjectItem, target = self.Feature, multiplicity = 1, rdSeq = step4ReadSeq}
```

```
let step5ReadPlan1 = Tuple{sourceAttr = self.Feature.feat_id, targetAttr = self.GeographicFeature_Item.geo_feat_id}
```

```
let step5ReadSeq = Sequence{ step5ReadPlan1}
```

```
let step5 = Tuple{source = self.Feature, target = self.GeographicFeature_Item, multiplicity = 1, rdSeq = step5ReadSeq}
```

```
let constructionSequence = Sequence{self.ObjectItemLocation, step1, step2, step3, step4, step5}
```

Enclosing Transactional: GeographicFeature_Position

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	GeographicFeature_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Feature_Enforced_ObjectItem: inv: self.ObjectItem.object-item-category-code='FE' Tagged Values:
Name: Type: Aggregation	Location_Composite («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Feature («Wrapper»)	Navigation Constraints: GeographicFeature_Item_Enforced_Feature: inv: self.Feature.feature-category-code='GF' Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ObjectItemLocation («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:

C.6.4 GeographicFeature_Status

The GeographicFeature_Status Transactional Artifact captures information about the condition or status of a specific geographic feature. The status information captured pertains to the surface of the geographic feature, in terms of whether it is liquid or solid, and whether or not it contains mines. These are captured in three subtypes of geographic-feature status: Liquid_Body_Status, Liquid_Surface_Status and Solid_Surface_Status. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the status report is captured.

self.geographic-feature-status-id = self.LiquidBodyStatus.liquid-body-status-id and self.object-item-status-index = self.LiquidBodyStatus.object-item-status-index

Context GeographicFeatureStatus, inv GeographicFeatureStatus_LiquidBodyStatus:

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id

Context ObjectItemStatus, inv ObjectItemStatus_Absolute_Reporting_Data:

self.object-item-id = self.ObjectItem.object-item-id

Context ObjectItemStatus, inv ObjectItemStatus_ObjectItem:

self.object-item-id = self.GeographicFeatureStatus.geographic-feature-status-id and self.object-item-status-index = self.GeographicFeatureStatus.object-item-status-index

Context ObjectItemStatus, inv ObjectItemStatus_GeographicFeatureStatus:

self.geographic-feature-status-id = self.LiquidSurfaceStatus.liquid-surface-status-id and self.object-item-status-index = self.LiquidSurfaceStatus.object-item-status-index

Context GeographicFeatureStatus, inv GeographicFeatureStatus_LiquidSurfaceStatus:

oclConstructionSequence

Context GeographicFeature_Status

```
let step1ReadPlan1 = Tuple{sourceAttr = self.GeographicFeatureStatus.gfeat_stat_id, targetAttr = self.ObjectItemStatus.obj_item_id}
```

```
let step1ReadPlan2 = Tuple{sourceAttr = self.GeographicFeatureStatus.obj_item_stat_ix, targetAttr = self.ObjectItemStatus.obj_item_stat_ix}
```

```
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2}
```

```
let step1 = Tuple{source = self.GeographicFeatureStatus, target = self.ObjectItemStatus, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectItemStatus.rptd_id, targetAttr = self.Absolute_Reporting_Data.rptd_id}
```

```
let step2ReadSeq = Sequence{ step2ReadPlan1}
```

```
let step2 = Tuple{source = self.ObjectItemStatus, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectItemStatus.obj_item_id, targetAttr = self.ObjectItem.obj_item_id}
```

```
let step3ReadSeq = Sequence{ step3ReadPlan1}
```

```
let step3 = Tuple{source = self.ObjectItemStatus, target = self.ObjectItem, multiplicity = 1, rdSeq = step3ReadSeq}
```

```
let step4ReadPlan1 = Tuple{sourceAttr = self.GeographicFeatureStatus.gfeat_stat_id, targetAttr = self.LiquidSurfaceStatus.lqd_surf_stat_id}
```

```
let step4ReadPlan2 = Tuple{sourceAttr = self.GeographicFeatureStatus.obj_item_stat_ix, targetAttr = self.LiquidSurfaceStatus.obj_item_stat_ix}
```

```
let step4ReadSeq = Sequence{ step4ReadPlan1, step4ReadPlan2}
```

```
let step4 = Tuple{source = self.GeographicFeatureStatus, target = self.LiquidSurfaceStatus, multiplicity = 1, rdSeq = step4ReadSeq}
```

```
let step5ReadPlan1 = Tuple{sourceAttr = self.GeographicFeatureStatus.gfeat_stat_id, targetAttr = self.LiquidBodyStatus.lqd_body_stat_id}
```

```
let step5ReadPlan2 = Tuple{sourceAttr = self.GeographicFeatureStatus.obj_item_stat_ix, targetAttr =
```



```

self.LiquidBodyStatus.obj_item_stat_ix}
let step5ReadSeq = Sequence{ step5ReadPlan1, step5ReadPlan2}
let step5 = Tuple{source = self.GeographicFeatureStatus, target = self.LiquidBodyStatus, multiplicity = 1, rdSeq =
step5ReadSeq}

let step6ReadPlan1 = Tuple{sourceAttr = self.GeographicFeatureStatus.gfeat_stat_id, targetAttr =
self.SolidSurfaceStatus.sld_surf_stat_id}
let step6ReadPlan2 = Tuple{sourceAttr = self.GeographicFeatureStatus.obj_item_stat_ix, targetAttr =
self.SolidSurfaceStatus.obj_item_stat_ix}
let step6ReadSeq = Sequence{ step6ReadPlan1, step6ReadPlan2}
let step6 = Tuple{source = self.GeographicFeatureStatus, target = self.SolidSurfaceStatus, multiplicity = 0..1, rdSeq =
step6ReadSeq}

let constructionSequence = Sequence{self.GeographicFeatureStatus, step1, step2, step3, step4, step5, step6}

```

self.geographic-feature-status-id = self.SolidSurfaceStatus.solid-surface-status-id and self.object-item-status-index = self.SolidSurfaceStatus.object-item-status-index

Context GeographicFeatureStatus, inv GeographicFeatureStatus_SolidSurfaceStatus:

Enclosing Transactional: GeographicFeature_Status

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	SolidSurfaceStatus («Wrapper»)	Navigation Constraints: GeographicFeatureStatus_Discriminator_SolidSurfaceStatus}; inv: self.GeographicFeatureStatus.geographic-feature-status-category-code='SLDSRF' Tagged Values:
Name: WatchPoint Type: Aggregation	ObjectItemStatus («Wrapper»)	Navigation Constraints: Tagged Values: isWatchPoint = True
Name: Identifier Type: Aggregation	GeographicFeatureStatus («Wrapper»)	Navigation Constraints: Tagged Values: isidentifier = True

Name: Type: Aggregation	LiquidBodyStatus («Wrapper»)	Navigation Constraints: GeographicFeatureStatus_Discriminator_LiquidBodyStatus}: inv: self.GeographicFeatureStatus.geographic-feature-status-category-code='LQDBDY' Tagged Values:
Name: Type: Aggregation	LiquidSurfaceStatus («Wrapper»)	Navigation Constraints: GeographicFeatureStatus_Discriminator_LiquidSurfaceStatus }: inv: self.GeographicFeatureStatus.geographic-feature-status-category-code='LQDSRF' Tagged Values:
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: GeographicFeature_Enforced_ObjectItem}: inv: self.ObjectItem.object-item-category-code='FE' Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	GeographicFeature_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.6.5 GeographicFeature_Type

The GeographicFeature_Type Transactional Artifact captures information about a type of permanent and durable natural feature, and describes terrain characteristics to which military significance is attached.

self.geographic-feature-type-id = self.FeatureType.feature-type-id
Context GeographicFeatureType, inv GeographicFeatureType_FeatureType:

self.feature-type-id = self.ObjectType.object-type-id
Context FeatureType, inv FeatureType_ObjectType:

oclConstructionSequence
Context GeographicFeature_Type

```
let step1ReadPlan1 = Tuple{sourceAttr = self.GeographicFeatureType.geo_feat_type_id, targetAttr =
self.FeatureType.feat_type_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
```

```

let step1 = Tuple{source = self.GeographicFeatureType, target = self.FeatureType, multiplicity = 1, rdSeq =
step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.FeatureType.feat_type_id, targetAttr = self.ObjectType.obj_type_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.FeatureType, target = self.ObjectType, multiplicity = 1, rdSeq = step2ReadSeq}

let constructionSequence = Sequence{self.GeographicFeatureType, step1, step2}

```

Enclosing Transactional: GeographicFeature_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier Type: Aggregation	GeographicFeatureType («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: FeatureType_Enforced_ObjectType}; inv: self.ObjectType.object-type-category-code='FE' Tagged Values:
Name: Type: Aggregation	FeatureType («Wrapper»)	Navigation Constraints: GeographicFeatureType_Enforced_FeatureType}; inv: self.FeatureType.feature-type-category-code='GF' Tagged Values:

C.7 Holding

C.7.1 Holding_Transfer

The Holding_Transfer Transactional Artifact captures information about the quantities of each specific object-type that are expected to be added to, or subtracted from, a Holding. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the holding report is captured.

```

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id
Context HoldingTransfer, inv HoldingTransfer_Absolute_Reporting_Data:

```

self.object-item-id = self.Holding.Holding.object-item-id and self.object-type-id = self.Holding.Holding.object-type-id and self.holding-index = self.Holding.Holding.holding-index

Context HoldingTransfer, inv HoldingTransfer_Holding:

self.holding-transfer-corresponding-object-item-id = self.ObjectItem.object-item-id

Context HoldingTransfer, inv HoldingTransfer_ObjectItem:

oclConstructionSequence

Context Holding_Transfer

```

let step1ReadPlan1 = Tuple{sourceAttr = self.HoldingTransfer.obj_item_id, targetAttr = self.Holdings.obj_item_id}
let step1ReadPlan2 = Tuple{sourceAttr = self.HoldingTransfer.obj_type_id, targetAttr = self.Holdings.obj_type_id}
let step1ReadPlan3 = Tuple{sourceAttr = self.HoldingTransfer.holding_ix, targetAttr = self.Holdings.holding_ix}
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2, step1ReadPlan3}
let step1 = Tuple{source = self.HoldingTransfer, target = self.Holdings, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.HoldingTransfer.rptd_id, targetAttr = self.Absolute_Reporting_Data.rptd_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.HoldingTransfer, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.HoldingTransfer.holding_trnsf_crsp_obj_item_id, targetAttr = self.ObjectItem.obj_item_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.HoldingTransfer, target = self.ObjectItem, multiplicity = 0..1, rdSeq = step3ReadSeq}

let constructionSequence = Sequence{self.HoldingTransfer, step1, step2, step3}

```

Enclosing Transactional: Holding_Transfer

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtended (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Holdings («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Tagged Values:

Name: Identifier WatchPoint Type: Aggregation	HoldingTransfer («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True isWatchPoint = True
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:

C.7.2 Holdings

The Holding Transactional Artifact captures information about the quantities of each specific object-type that is held by, installed in, or included with a specific object-item. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the holding report is captured.

self.object-type-id = self.ObjectType.object-type-id

Context Holding, inv Holding_ObjectType:

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id

Context Holding, inv Holding_Absolute_Reporting_Data:

self.object-item-id = self.ObjectItem.object-item-id

Context Holding, inv Holding_ObjectItem:

oclConstructionSequence

Context Holdings

```

let step1ReadPlan1 = Tuple{sourceAttr = self.Holding.rptd_id, targetAttr = self.Absolute_Reporting_Data.rptd_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.Holding, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.Holding.obj_item_id, targetAttr = self.ObjectItem.obj_item_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.Holding, target = self.ObjectItem, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.Holding.obj_type_id, targetAttr = self.ObjectType.obj_type_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.Holding, target = self.ObjectType, multiplicity = 1, rdSeq = step3ReadSeq}

let constructionSequence = Sequence{self.Holding, step1, step2, step3}

```

Enclosing Transactional: Holdings

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier WatchPoint Type: Aggregation	Holding («Wrapper»)	Navigation Constraints: Tagged Values: isWatchPoint = True isIdentifier = True
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:

C.8 Location

C.8.1 Absolute_Point

The Absolute_Point Transactional Artifact captures information about an individual point specified in absolute terms (i.e. specified with respect to either a standard description of the surface of the earth or an earth-centered cartesian coordinate system). The transactional encloses the Cartesian_Point and Geographic_Point Transactional Artifacts that further refine the point in terms of the applicable coordinate system.

oclConstructionSequence

Context Absolute_Point

```

let step1ReadPlan1 = Tuple{sourceAttr = self.AbsolutePoint.abs_point_id, targetAttr =
self.Geographic_Point.geo_point_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.AbsolutePoint, target = self.Geographic_Point, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.AbsolutePoint.abs_point_id, targetAttr = self.Cartesian_Point.crts_point_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.AbsolutePoint, target = self.Cartesian_Point, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.AbsolutePoint.abs_point_id, targetAttr = self.Point.point_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.AbsolutePoint, target = self.Point, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.Point.point_id, targetAttr = self.Location.loc_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}

```

```

let step4 = Tuple{source = self.Point, target = self.Location, multiplicity = 1, rdSeq = step4ReadSeq}

let step5ReadPlan1 = Tuple{sourceAttr = self.AbsolutePoint.abs_point_ver_dist_id, targetAttr =
self.VerticalDistance.ver_dist_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.AbsolutePoint, target = self.VerticalDistance, multiplicity = 0..1, rdSeq = step5ReadSeq}

let constructionSequence = Sequence{self.AbsolutePoint, step1, step2, step3, step4, step5}

```

self.point-id = self.Location.location-id

Context Point, inv Point_Location:

self.absolute-point-vertical-distance-id = self.VerticalDistance.vertical-distance-id

Context AbsolutePoint, inv AbsolutePoint_VerticalDistance:

self.absolute-point-id = self.Point.point-id

Context AbsolutePoint, inv AbsolutePoint_Point:

self.absolute-point-id = self.Geographic_Point.GeographicPoint.geographic-point-id

Context AbsolutePoint, inv AbsolutePoint_Geographic_Point:

self.absolute-point-id = self.Cartesian_Point.CartesianPoint.cartesian-point-id

Context AbsolutePoint, inv AbsolutePoint_Cartesian_Point:

Enclosing Transactional: Absolute_Point

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Cartesian_Point («Transactional»)	Navigation Constraints: AbsolutePoint_Discriminator_Cartesian_Point}; inv:self.AbsolutePoint.absolute-point-category-code='CARTPT' Tagged Values:
Name: Type: Aggregation	Geographic_Point («Transactional»)	Navigation Constraints: AbsolutePoint_Discriminator_Geographic_Point}; inv: self.AbsolutePoint.absolute-point-category-code='GEOGPT' Tagged Values:

Name: Type: Generalization	GeographicPoint («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	VerticalDistance («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Location («Wrapper»)	Navigation Constraints: Point_Enforced_Location}; inv: self.Location.location-category-code='PT' Tagged Values:
Name: Type: Aggregation	Point («Wrapper»)	Navigation Constraints: AbsolutePoint_Enforced_Point}; inv: self.Point.point-category-code='ABS' Tagged Values:
Name: Identifier Type: Aggregation	AbsolutePoint («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True

C.8.2 Cartesian_Point

The Cartesian_Point Transactional Artifact is a support transactional for Absolute_Point and captures information about an absolute point that has its position specified in a three-dimensional earth-centered cartesian coordinate system.

self.point-id = self.Location.location-id

Context Point, inv Point_Location:

self.cartesian-point-id = self.AbsolutePoint.absolute-point-id

Context CartesianPoint, inv CartesianPoint_AbsolutePoint:

self.absolute-point-vertical-distance-id = self.VerticalDistance.vertical-distance-id

Context AbsolutePoint, inv AbsolutePoint_VerticalDistance:

self.absolute-point-id = self.Point.point-id

Context AbsolutePoint, inv AbsolutePoint_Point:

oclConstructionSequence

Context Cartesian_Point


```

let step1ReadPlan1 = Tuple{sourceAttr = self.CartesianPoint.crts_point_id, targetAttr = self.AbsolutePoint.abs_point_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.CartesianPoint, target = self.AbsolutePoint, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.AbsolutePoint.abs_point_id, targetAttr = self.Point.point_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.AbsolutePoint, target = self.Point, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.Point.point_id, targetAttr = self.Location.loc_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.Point, target = self.Location, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.AbsolutePoint.abs_point_ver_dist_id, targetAttr =
self.VerticalDistance.ver_dist_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.AbsolutePoint, target = self.VerticalDistance, multiplicity = 0..1, rdSeq = step4ReadSeq}

let constructionSequence = Sequence{self.CartesianPoint, step1, step2, step3, step4}

```

Enclosing Transaction: Cartesian_Point

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Identifier Type: Aggregation	CartesianPoint («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	AbsolutePoint («Wrapper»)	Navigation Constraints: CartesianPoint_Enforced_AbsolutePoint): inv:self.AbsolutePoint.absolute-point-category-code='CARTPT' Tagged Values:
Name: Type: Aggregation	Point («Wrapper»)	Navigation Constraints: AbsolutePoint_Enforced_Point): inv: self.Point.point-category-code='ABS' Tagged Values:
Name: Type: Aggregation	Location («Wrapper»)	Navigation Constraints: Point_Enforced_Location): inv: self.Location.location-category-code='PT' Tagged Values:

Name: Type: Aggregation	VerticalDistance («Wrapper»)	Navigation Constraints: Tagged Values:
--	---------------------------------	---

C.8.3 Cone_Volume

The Cone_Volume Transactional Artifact captures information about a geometric-volume whose boundary is swept by a line that has one fixed point (called the vertex) and another that moves along the path defined by the boarder of a specific surface (called the projected surface).

self.cone-volume-id = self.GeometricVolume.geometric-volume-id

Context ConeVolume, inv ConeVolume_GeometricVolume:

self.cone-volume-defining-surface-id = self.Surface_Item.Surface.surface-id

Context ConeVolume, inv ConeVolume_Surface_Item:

oclConstructionSequence

Context Cone_Volume

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ConeVolume.vertex_point_id, targetAttr = self.Point_Item.point_id}
```

```
let step1ReadSeq = Sequence{ step1ReadPlan1}
```

```
let step1 = Tuple{source = self.ConeVolume, target = self.Point_Item, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ConeVolume.cone_vol_dfng_surf_id, targetAttr = self.Surface_Item.surf_id}
```

```
let step2ReadSeq = Sequence{ step2ReadPlan1}
```

```
let step2 = Tuple{source = self.ConeVolume, target = self.Surface_Item, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.ConeVolume.cone_vol_id, targetAttr = self.GeometricVolume.geom_vol_id}
```

```
let step3ReadSeq = Sequence{ step3ReadPlan1}
```

```
let step3 = Tuple{source = self.ConeVolume, target = self.GeometricVolume, multiplicity = 1, rdSeq = step3ReadSeq}
```

```
let step4ReadPlan1 = Tuple{sourceAttr = self.GeometricVolume.geom_vol_id, targetAttr = self.Location.loc_id}
```

```
let step4ReadSeq = Sequence{ step4ReadPlan1}
```

```
let step4 = Tuple{source = self.GeometricVolume, target = self.Location, multiplicity = 1, rdSeq = step4ReadSeq}
```

```
let constructionSequence = Sequence{self.ConeVolume, step1, step2, step3, step4}
```

self.geometric-volume-id = self.Location.location-id

Context GeometricVolume, inv GeometricVolume_Location:

self.cone-volume-vertex-point-id = self.Point_Item.Point.point-id

Context ConeVolume, inv ConeVolume_Point_Item:

Enclosing Transactional: Cone_Volume

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier Type: Aggregation	ConeVolume («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	Point_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	GeometricVolume («Wrapper»)	Navigation Constraints: ConeVolume_Enforced_GeometricVolume: inv: self.GeometricVolume.geometric-volume-category-code='CN' Tagged Values:
Name: Type: Aggregation	Location («Wrapper»)	Navigation Constraints: GeometricVolume_Enforced_Location: inv: self.Location.location-category-code='VL' Tagged Values:
Name: Type: Aggregation	Surface_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.8.4 CorridorArea_Surface

The CorridorArea_Surface Transactional Artifact captures information about a specific surface that is defined by its width and a sequence of points. It is a support transactional used in the Surface_Area Transactional Artifact.

```
self.corridor-area-centre-line-id = self.Line_Item.Line.line-id  
Context CorridorArea, inv CorridorArea_Line_Item:
```

oclConstructionSequence

Context CorridorArea_Surface

```
let step1ReadPlan1 = Tuple{sourceAttr = self.CorridorArea.corridor_area_centre_line_id, targetAttr =  
self.Line_Item.line_id}  
let step1ReadSeq = Sequence{ step1ReadPlan1}
```

```

let step1 = Tuple{source = self.CorridorArea, target = self.Line_Item, multiplicity = 1, rdSeq = step1ReadSeq}

let constructionSequence = Sequence{self.CorridorArea, step1}

```

Enclosing Transactional: CorridorArea_Surface

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Line («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	CorridorArea («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	Line_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.8.5 Ellipse_Surface

The Ellipse_Surface Transactional Artifact captures information about a specific planer surface that is defined by three points that establish the origin and the endpoints of the major and minor semi-axis. It is a support transactional used in the Surface_Area Transactional Artifact.

```

self.ellipse-second-conjugate-diameter-point-id = self.Point_Item.Point.point-id
Context Ellipse, inv Ellipse_Point_Item:

```

```

self.ellipse-first-conjugate-diameter-point-id = self.Point_Item.Point.point-id
Context Ellipse, inv Ellipse_Point_Item:

```

```

self.ellipse-centre-point-id = self.Point_Item.Point.point-id
Context Ellipse, inv Ellipse_Point_Item:

```

```

oclConstructionSequence
Context Ellipse_Surface

```

```

let step1ReadPlan1 = Tuple{sourceAttr = self.Ellipse.elps_centre_point_id, targetAttr = self.Point_Item.point_id}

```

```

let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.Ellipse, target = self.Point_Item, multiplicity = 3, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.Ellipse.elps_scnd_cnjg_diam_point_id, targetAttr = self.Point_Item.point_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.Ellipse, target = self.Point_Item, multiplicity = 3, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.Ellipse.elps_first_cnjg_diam_point_id, targetAttr = self.Point_Item.point_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.Ellipse, target = self.Point_Item, multiplicity = 3, rdSeq = step3ReadSeq}

let constructionSequence = Sequence{self.Ellipse, step1, step2, step3}

```

Enclosing Transactional: Ellipse_Surface

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Point_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	Ellipse («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True

C.8.6 FanArea_Surface

The FanArea_Surface Transactional Artifact captures information about a specific surface that is in the form of a truncated ring sector, lying between and bounded by the rays emanating from the center-point of the ring and having a specified central angle. It is a support transactional used in the Surface_Area Transactional Artifact.

```

self.fan-area-vertex-point-id = self.Point_Item.Point.point-id
Context FanArea, inv FanArea_Point_Item:

```

```

oclConstructionSequence
Context FanArea_Surface

```

```

let step1ReadPlan1 = Tuple{sourceAttr = self.FanArea.fan_area_vertex_point_id, targetAttr = self.Point_Item.point_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.FanArea, target = self.Point_Item, multiplicity = 1, rdSeq = step1ReadSeq}

let constructionSequence = Sequence{self.FanArea, step1}

```

Enclosing Transactional: FanArea_Surface

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier Type: Aggregation	FanArea («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	Point_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.8.7 Geographic_Point

The Geographic_Point Transactional Artifact is a support transactional for Absolute_Point and captures information about an absolute point that has its position specified with respect to the 1984 World Geodetic System (WGS 84) ellipsoid.

self.geographic-point-id = self.AbsolutePoint.absolute-point-id
Context GeographicPoint, inv GeographicPoint_AbsolutePoint:

self.absolute-point-vertical-distance-id = self.VerticalDistance.vertical-distance-id
Context AbsolutePoint, inv AbsolutePoint_VerticalDistance:

self.absolute-point-id = self.Point.point-id
Context AbsolutePoint, inv AbsolutePoint_Point:

oclConstructionSequence
Context Geographic_Point

```
let step1ReadPlan1 = Tuple{sourceAttr = self.GeographicPoint.geo_point_id, targetAttr = self.AbsolutePoint.abs_point_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.GeographicPoint, target = self.AbsolutePoint, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.AbsolutePoint.abs_point_id, targetAttr = self.Point.point_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.AbsolutePoint, target = self.Point, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.Point.point_id, targetAttr = self.Location.loc_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.Point, target = self.Location, multiplicity = 1, rdSeq = step3ReadSeq}
```

```

let step4ReadPlan1 = Tuple{sourceAttr = self.AbsolutePoint.abs_point_ver_dist_id, targetAttr =
self.VerticalDistance.ver_dist_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.AbsolutePoint, target = self.VerticalDistance, multiplicity = 0..1, rdSeq = step4ReadSeq}

let constructionSequence = Sequence{self.GeographicPoint, step1, step2, step3, step4}

```

self.point-id = self.Location.location-id

Context Point, inv Point_Location:

Enclosing Transaction: Geographic_Point

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Type: Aggregation	VerticalDistance («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	AbsolutePoint («Wrapper»)	Navigation Constraints: GeographicPoint_Enforced_AbsolutePoint}: inv: self.AbsolutePoint.absolute-point-category-code='GEOGPT' Tagged Values:
Name: Identifier Type: Aggregation	GeographicPoint («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	Point («Wrapper»)	Navigation Constraints: AbsolutePoint_Enforced_Point}: inv: self.Point.point-category-code='ABS' Tagged Values:
Name: Type: Aggregation	Location («Wrapper»)	Navigation Constraints: Point_Enforced_Location}: inv: self.Location.location-category-code='PT' Tagged Values:

C.8.8 Geometric_Volume_Item

The Geometric_Volume_Item Transactional Artifact captures information about a specific location that is a three-dimensional bounded space. It has three subtypes; cone, sphere and cylinder. It is a support transactional used in the Location_Composite Transactional Artifact.

self.geometric-volume-id = self.Sphere_Volume.SphereVolume.sphere-volume-id
Context GeometricVolume, inv GeometricVolume_Sphere_Volume:

self.geometric-volume-id = self.Cone_Volume.ConeVolume.cone-volume-id
Context GeometricVolume, inv GeometricVolume_Cone_Volume:

oclConstructionSequence

Context Geometric_Volume_Item

```
let step1ReadPlan1 = Tuple{sourceAttr = self.GeometricVolume.geom_vol_id, targetAttr =
self.Sphere_Volume.sphere_vol_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.GeometricVolume, target = self.Sphere_Volume, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.GeometricVolume.geom_vol_id, targetAttr =
self.Surface_Volume.surf_vol_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.GeometricVolume, target = self.Surface_Volume, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.GeometricVolume.geom_vol_id, targetAttr =
self.Cone_Volume.cone_vol_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.GeometricVolume, target = self.Cone_Volume, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.GeometricVolume.geom_vol_id, targetAttr = self.Location.loc_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.GeometricVolume, target = self.Location, multiplicity = 1, rdSeq = step4ReadSeq}

let constructionSequence = Sequence{self.GeometricVolume, step1, step2, step3, step4}
```

self.geometric-volume-id = self.Surface_Volume.SurfaceVolume.surface-volume-id
Context GeometricVolume, inv GeometricVolume_Surface_Volume:

self.geometric-volume-id = self.Location.location-id
Context GeometricVolume, inv GeometricVolume_Location:

Enclosing Transactional: Geometric_Volume_Item

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	ConeVolume («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	GeometricVolume («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	SphereVolume («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	SurfaceVolume («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Point_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Surface («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Location («Wrapper»)	Navigation Constraints: GeometricVolume_Enforced_Location}; inv: self.Location.location-category-code='VL' Tagged Values:
Name: Type: Aggregation	Sphere_Volume («Transactional»)	Navigation Constraints: Geometric_Volume_Item_Discriminator_Sphere_Volume}; inv: self.GeometricVolume.geometric-volume-category-code='SPHVOL' Tagged Values:
Name: Type: Aggregation	Cone_Volume («Transactional»)	Navigation Constraints: Geometric_Volume_Item_Discriminator_Cone_Volume}; inv: self.GeometricVolume.geometric-volume-category-code='CN' Tagged Values:

Name: Type: Aggregation	Surface_Volume («Transactional»)	Navigation Constraints: Geometric_Volume_Item_Discriminator_Surface_Volume}; inv: self.GeometricVolume.geometric-volume-category-code='SURVOL' Tagged Values:
--	----------------------------------	--

C.8.9 LinePoint_Item

The LinePoint_Item Transactional Artifact captures information about one of an ordered sequence of points used to define a specific Line. This transactional is a support transactional used in the Line_Item Transactional Artifact.

self.line-point-point-id = self.Point_Item.Point.point-id
Context LinePoint, inv LinePoint_Point_Item:

oclConstructionSequence
Context LinePoint_Item

```
let step1ReadPlan1 = Tuple{sourceAttr = self.LinePoint.point_id, targetAttr = self.Point_Item.point_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.LinePoint, target = self.Point_Item, multiplicity = 1, rdSeq = step1ReadSeq}

let constructionSequence = Sequence{self.LinePoint, step1}
```

Enclosing Transactional: LinePoint_Item

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier Type: Aggregation	LinePoint («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	Point («Wrapper»)	Navigation Constraints: Tagged Values:

Name: Type: Aggregation	GeographicPoint («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	AbsolutePoint («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Location («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Point_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.8.10 Line_Item

The Line_Item Transactional Artifact captures information about a specific location that is defined by two or more points connected by one-dimensional line segments in an ordered sequence. This transactional is a support transactional used in the Location_Composite Transactional Artifact.

self.line-id = self.Location.location-id

Context Line, inv Line_Location:

self.line-id = self.LinePoint_Item.LinePoint.line-id

Context Line, inv Line_LinePoint_Item:

oclConstructionSequence

Context Line_Item

```

let step1ReadPlan1 = Tuple{sourceAttr = self.Line.line_id, targetAttr = self.LinePoint_Item.line_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.Line, target = self.LinePoint_Item, multiplicity = 2..*, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.Line.line_id, targetAttr = self.Location.loc_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.Line, target = self.Location, multiplicity = 1, rdSeq = step2ReadSeq}

let constructionSequence = Sequence{self.Line, step1, step2}

```

Enclosing Transactional: Line_Item

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Type: Aggregation	Location («Wrapper»)	Navigation Constraints: Line_Enforced_Location}; inv: self.Location.location-category-code='LN' Tagged Values:
Name: Identifier Type: Aggregation	Line («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	LinePoint_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.8.11 Location_Composite

The Location_Composite Transactional Artifact captures information about locations with regard to the specification of the geometry that is required to describe operational objects. There are four classes of location: Point, Line, Surface, and Geometric Volume, which are encapsulated in the four Transactional Artifacts (Point_Item, Line_Item, Surface_Item and Geometric_Volume_Item) that are enclosed in this transactional.

```
self.location-id = self.Geometric_Volume_Item.GeometricVolume.geometric-volume-id  
Context Location, inv Location_Geometric_Volume_Item:
```

```
self.location-id = self.Line_Item.Line.line-id  
Context Location, inv Location_Line_Item:
```

oclConstructionSequence

Context Location_Composite

```
let step1ReadPlan1 = Tuple{sourceAttr = self.Location.loc_id, targetAttr = self.Surface_Item.surf_id}  
let step1ReadSeq = Sequence{ step1ReadPlan1}  
let step1 = Tuple{source = self.Location, target = self.Surface_Item, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.Location.loc_id, targetAttr = self.Line_Item.line_id}  
let step2ReadSeq = Sequence{ step2ReadPlan1}  
let step2 = Tuple{source = self.Location, target = self.Line_Item, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.Location.loc_id, targetAttr = self.Geometric_Volume_Item.geom_vol_id}
```

```

let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.Location, target = self.Geometric_Volume_Item, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.Location.loc_id, targetAttr = self.Point_Item.point_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.Location, target = self.Point_Item, multiplicity = 1, rdSeq = step4ReadSeq}

let constructionSequence = Sequence{self.Location, step1, step2, step3, step4}

```

self.location-id = self.Surface_Item.Surface.surface-id

Context Location, inv Location_Surface_Item:

self.location-id = self.Point_Item.Point.point-id

Context Location, inv Location_Point_Item:

Enclosing Transactional: Location_Composite

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Point_Item («Transactional»)	Navigation Constraints: Location_Composite_Discriminator_Point_Item}: inv: self.Location.location-category-code='PT' Tagged Values:
Name: Type: Aggregation	Surface_Item («Transactional»)	Navigation Constraints: Location_Composite_Discriminator_Surface_Item}: inv: self.Location.location-category-code='SURFAC' Tagged Values:
Name: Identifier Type: Aggregation	Location («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	Line_Item («Transactional»)	Navigation Constraints: Location_Composite_Discriminator_Line_Item}: inv: self.Location.location-category-code='LN' Tagged Values:

Name: Type: Aggregation	Geometric_Volume_Item («Transactional»)	Navigation Constraints: Location_Composite_Discriminator_Geometric_Volume_Item}; inv:self.Location.location-category-code='VL' Tagged Values:
--	--	--

C.8.12 OrbitArea_Surface

The OrbitArea_Surface Transactional Artifact captures information about a specific surface that is (a) an open rectangular section defined by its width and the distance between the two specific points, and (b) closed by two half-circles with radii equal to half the width, and is positioned left, right or centered with respect to the line formed by the two defining points. It is a support transactional used in the Surface_Item Transactional Artifact.

self.orbit-area-second-point-id = self.Point_Item.Point.point-id

Context OrbitArea, inv OrbitArea_Point_Item:

self.orbit-area-first-point-id = self.Point_Item.Point.point-id

Context OrbitArea, inv OrbitArea_Point_Item:

oclConstructionSequence

Context OrbitArea_Surface

```

let step1ReadPlan1 = Tuple{sourceAttr = self.OrbitArea.orbit_area_scnd_point_id, targetAttr = self.Point_Item.point_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.OrbitArea, target = self.Point_Item, multiplicity = 2, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.OrbitArea.orbit_area_first_point_id, targetAttr = self.Point_Item.point_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.OrbitArea, target = self.Point_Item, multiplicity = 2, rdSeq = step2ReadSeq}

let constructionSequence = Sequence{self.OrbitArea, step1, step2}

```

Enclosing Transactional: OrbitArea_Surface

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Point_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	OrbitArea («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	Line_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.8.13 Point_Item

The Point_Item Transactional Artifact captures information about a specific location that is defined by a zero-dimensional point. The specification of a Point is either with respect to a frame of reference that is a geodetic system (the model uses the World Geodetic System, 1984) or with respect to another Point. In the first case, the Point is termed an Absolute Point and in the second a relative point. Separate Transactional Artifacts have been defined for both of these cases, and appear on this transactional as support transactionals.

oclConstructionSequence

Context Point_Item

```
let step1ReadPlan1 = Tuple{sourceAttr = self.Point.point_id, targetAttr = self.Absolute_Point.abs_point_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.Point, target = self.Absolute_Point, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.Point.point_id, targetAttr = self.Relative_Point.rel_point_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.Point, target = self.Relative_Point, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.Point.point_id, targetAttr = self.Location.loc_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.Point, target = self.Location, multiplicity = 1, rdSeq = step3ReadSeq}
```

```
let constructionSequence = Sequence{self.Point, step1, step2, step3}
```

self.point-id = self.Relative_Point.RelativePoint.relative-point-id
Context Point, inv Point_Relative_Point:

self.point-id = self.Absolute_Point.AbsolutePoint.absolute-point-id
Context Point, inv Point_Absolute_Point:

self.point-id = self.Location.location-id
Context Point, inv Point_Location:

Enclosing Transactional: Point_Item

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Type: Aggregation	Location («Wrapper»)	Navigation Constraints: Point_Enforced_Location}; inv: self.Location.location-category-code='PT' Tagged Values:
Name: Type: Aggregation	GeographicPoint («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	CartesianPoint («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	Point («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	RelativePoint («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	AbsolutePoint («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Relative_Point («Transactional»)	Navigation Constraints: Point_Item_Discriminator_Relative_Point}; inv: self.Point.point-category-code='REL' Tagged Values:

Name: Type: Aggregation	Absolute_Point («Transactional»)	Navigation Constraints: Point_Item_Discriminator_Absolute_Point}: inv: self.Point.point-category-code='ABS' Tagged Values:
--	----------------------------------	---

C.8.14 Point_Reference

The Point_Reference Transactional Artifact captures information about a specific local frame of reference or Relative Coordinate System specified with respect to the location of three specific Points. A Point Reference is one of two ways (the other is an Object Reference) that a Relative Coordinate System can be defined. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the status report is captured.

self.relative-coordinate-system-id = self.RelativeCoordinateSystem.relative-coordinate-system-id

Context PointReference, inv PointReference_RelativeCoordinateSystem:

self.point-reference-y-vector-point-id = self.Point_Item.Point.point-id

Context PointReference, inv PointReference_Point_Item:

self.point-reference-x-vector-point-id = self.Point_Item.Point.point-id

Context PointReference, inv PointReference_Point_Item:

self.point-reference-origin-point-id = self.Point_Item.Point.point-id

Context PointReference, inv PointReference_Point_Item:

oclConstructionSequence

Context Point_Reference

```
let step1ReadPlan1 = Tuple{sourceAttr = self.PointReference.point_ref_y_vector_point_id, targetAttr = self.Point.point_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.PointReference, target = self.Point, multiplicity = 3, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.PointReference.point_ref_x_vector_point_id, targetAttr = self.Point.point_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.PointReference, target = self.Point, multiplicity = 3, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.PointReference.point_ref_orgn_point_id, targetAttr = self.Point.point_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.PointReference, target = self.Point, multiplicity = 3, rdSeq = step3ReadSeq}
```

```
let step4ReadPlan1 = Tuple{sourceAttr = self.PointReference.rel_coord_sys_id, targetAttr =
self.RelativeCoordinateSystem.rel_coord_sys_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.PointReference, target = self.RelativeCoordinateSystem, multiplicity = 1, rdSeq =
step4ReadSeq}
```

```
let constructionSequence = Sequence{self.PointReference, step1, step2, step3, step4}
```

Enclosing Transactional: Point_Reference

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	RelativeCoordinateSystem («Wrapper»)	Navigation Constraints: PointReference_Enforced_RelativeCoordinateSystem: inv: self.RelativeCoordinateSystem.relative-coordinate-system-reference-category-code='PNTREF' Tagged Values:
Name: Identifier Type: Aggregation	PointReference («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	Point («Wrapper»)	Navigation Constraints: Tagged Values:

C.8.15 PolyarcArea_Surface

The PolyarcArea_Surface Transactional Artifact captures information about a specific planar surface that has its boundaries defined by a circular arc and a polygonal segment defined by a specific line whose beginning coincides with the initial point of the arc and whose end coincides with the last point of the arc. It is a support transactional used in the Surface_Item Transactional Artifact.

oclConstructionSequence

Context PolyarcArea_Surface

```
let step1ReadPlan1 = Tuple{sourceAttr = self.PolyarcArea.plyrc_area_brng_orgn_point_id, targetAttr = self.Point_Item.point_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.PolyarcArea, target = self.Point_Item, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.PolyarcArea.plyrc_area_dfng_line_id, targetAttr = self.Line_Item.line_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.PolyarcArea, target = self.Line_Item, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let constructionSequence = Sequence{self.PolyarcArea, step1, step2}
```

self.polyarc-area-defining-line-id = self.Line_Item.Line.line-id

Context PolyarcArea, inv PolyarcArea_Line_Item:

self.polyarc-area-bearing-origin-point-id = self.Point_Item.Point.point-id

Context PolyarcArea, inv PolyarcArea_Point_Item:

Enclosing Transactional: PolyarcArea_Surface

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Point_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	PolyarcArea («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	Line_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.8.16 PolygonArea_Surface

The PolygonArea_Surface Transactional Artifact captures information about a specific planar surface that has its boundaries defined by a specific line forming a closed polygonal path. It is a support transactional used in the Surface_Item Transactional Artifact.

self.polygon-area-bounding-line-id = self.Line_Item.Line.line-id

Context PolygonArea, inv PolygonArea_Line_Item:

oclConstructionSequence

Context PolygonArea_Surface

```
let step1ReadPlan1 = Tuple{sourceAttr = self.PolygonArea.polygon_area_bndg_line_id, targetAttr = self.Line_Item.line_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.PolygonArea, target = self.Line_Item, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let constructionSequence = Sequence{self.PolygonArea, step1}
```

Enclosing Transactional: PolygonArea_Surface

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Line («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	PolygonArea («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	Line_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.8.17 Relative_Coordinate_System

The Relative_Coordinate_System Transactional Artifact captures information about a rectangular frame of reference defined by an origin and an x and y axis in the horizontal plane and a z-axis. A relative coordinate system enables the use of a local frame of reference, and may be specified with respect to an arbitrary point, or with respect to the location of an object.

oclConstructionSequence

Context Relative_Coordinate_System

```
let step1ReadPlan1 = Tuple{sourceAttr = self.RelativeCoordinateSystem.rel_coord_sys_id, targetAttr = self.Point_Reference.rel_coord_sys_id}
```

```
let step1ReadSeq = Sequence{ step1ReadPlan1}
```

```
let step1 = Tuple{source = self.RelativeCoordinateSystem, target = self.Point_Reference, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.RelativeCoordinateSystem.rel_coord_sys_id, targetAttr = self.Object_Reference.rel_coord_sys_id}
```

```
let step2ReadSeq = Sequence{ step2ReadPlan1}
```

```
let step2 = Tuple{source = self.RelativeCoordinateSystem, target = self.Object_Reference, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let constructionSequence = Sequence{self.RelativeCoordinateSystem, step1, step2}
```

self.relative-coordinate-system-id = self.Object_Reference.ObjectReference.relative-coordinate-system-id
 Context RelativeCoordinateSystem, inv RelativeCoordinateSystem_Object_Reference:

self.relative-coordinate-system-id = self.Point_Reference.PointReference.relative-coordinate-system-id
 Context RelativeCoordinateSystem, inv RelativeCoordinateSystem_Point_Reference:

Enclosing Transactional: Relative_Coordinate_System

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Point_Reference («Transactional»)	Navigation Constraints: RelativeCoordinateSystem_Discriminator_Point_Reference}; inv: self.RelativeCoordinateSystem.relative-coordinate-system-reference-category-code='PNTREF' Tagged Values:
Name: Identifier Type: Aggregation	RelativeCoordinateSystem («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	Object_Reference («Transactional»)	Navigation Constraints: RelativeCoordinateSystem_Discriminator_Object_Reference}; inv: self.RelativeCoordinateSystem.relative-coordinate-system-reference-category-code='OBJREF' Tagged Values:

C.8.18 Relative_Point

The Relative_Point Transactional Artifact captures information about a Point whose position is specified with respect to a relative coordinate system. This permits a specification of geometry in relation to a single point on the Earth. Relative geometry can simplify the specification of local geometry through the use of Cartesian offsets from the known point.

oclConstructionSequence

Context Relative_Point

```
let step1ReadPlan1 = Tuple{sourceAttr = self.RelativePoint.rel_coord_sys_id, targetAttr = self.Relative_Coordinate_System.rel_coord_sys_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.RelativePoint, target = self.Relative_Coordinate_System, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.RelativePoint.rel_point_id, targetAttr = self.Point.point_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.RelativePoint, target = self.Point, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.Point.point_id, targetAttr = self.Location.loc_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.Point, target = self.Location, multiplicity = 1, rdSeq = step3ReadSeq}
```

```
let constructionSequence = Sequence{self.RelativePoint, step1, step2, step3}
```

self.relative-point-id = self.Point.point-id

Context RelativePoint, inv RelativePoint_Point:

self.relative-coordinate-system-id = self.Relative_Coordinate_System.RelativeCoordinateSystem.relative-coordinate-system-id

Context RelativePoint, inv RelativePoint_Relative_Coordinate_System:

self.point-id = self.Location.location-id

Context Point, inv Point_Location:

Enclosing Transactional: Relative_Point

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Relative_Coordinate_System («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Location («Wrapper»)	Navigation Constraints: Point_Enforced_Location}: inv: self.Location.location-category-code='PT' Tagged Values:

Name: Type: Aggregation	Point («Wrapper»)	Navigation Constraints: RelativePoint_Enforced_Point}: inv: self.Point.point-category-code='REL' Tagged Values:
Name: Type: Aggregation	Point_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	RelativeCoordinateSystem («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	RelativePoint («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True

C.8.19 Sphere_Volume

The Sphere_Volume Transactional Artifact captures information about a geometric-volume that has horizontal boundaries defined by the spherical surface determined by the radius and a specific point.

self.sphere-volume-id = self.GeometricVolume.geometric-volume-id
Context SphereVolume, inv SphereVolume_GeometricVolume:

self.sphere-volume-centre-point-id = self.Point_Item.Point.point-id
Context SphereVolume, inv SphereVolume_Point_Item:

self.geometric-volume-id = self.Location.location-id
Context GeometricVolume, inv GeometricVolume_Location:

oclConstructionSequence
Context Sphere_Volume

```
let step1ReadPlan1 = Tuple{sourceAttr = self.SphereVolume.sphere_vol_centre_point_id, targetAttr =
self.Point_Item.point_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.SphereVolume, target = self.Point_Item, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.SphereVolume.sphere_vol_id, targetAttr =
self.GeometricVolume.geom_vol_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.SphereVolume, target = self.GeometricVolume, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.GeometricVolume.geom_vol_id, targetAttr = self.Location.loc_id}
```

```

let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.GeometricVolume, target = self.Location, multiplicity = 1, rdSeq = step3ReadSeq}

let constructionSequence = Sequence{self.SphereVolume, step1, step2, step3}

```

Enclosing Transactional: Sphere_Volume

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Point_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	SphereVolume («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	GeometricVolume («Wrapper»)	Navigation Constraints: SphereVolume_Enforced_GeometricVolume: inv: self.GeometricVolume.geometric-volume-category-code='SPHVOL' Tagged Values:
Name: Type: Aggregation	Location («Wrapper»)	Navigation Constraints: GeometricVolume_Enforced_Location: inv: self.Location.location-category-code='VL' Tagged Values:

C.8.20 Surface_Item

The Surface_Item Transactional Artifact captures information about any of the seven distinct geometric constructs that are surfaces (two-dimensional locations). Separate Transactional Artifacts have been defined for each of these surface constructs and are enclosed in this transactional as support transactionals. They include the Transactional Artifacts: CorridorArea_Surface, Ellipse_Surface, FanArea_Surface, OrbitArea_Surface, PolyarcArea_Surface, PolygonArea_Surface, and TrackArea_Surface.

oclConstructionSequence

Context Surface_Item

```
let step1ReadPlan1 = Tuple{sourceAttr = self.Surface.surf_id, targetAttr = self.TrackArea_Surface.track_area_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.Surface, target = self.TrackArea_Surface, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.Surface.surf_id, targetAttr = self.PolyarcArea_Surface.plyrc_area_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.Surface, target = self.PolyarcArea_Surface, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.Surface.surf_id, targetAttr = self.PolygonArea_Surface.polygon_area_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.Surface, target = self.PolygonArea_Surface, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.Surface.surf_id, targetAttr = self.OrbitArea_Surface.orbit_area_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.Surface, target = self.OrbitArea_Surface, multiplicity = 1, rdSeq = step4ReadSeq}

let step5ReadPlan1 = Tuple{sourceAttr = self.Surface.surf_id, targetAttr = self.FanArea_Surface.fan_area_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.Surface, target = self.FanArea_Surface, multiplicity = 1, rdSeq = step5ReadSeq}

let step6ReadPlan1 = Tuple{sourceAttr = self.Surface.surf_id, targetAttr = self.Ellipse_Surface.elps_id}
let step6ReadSeq = Sequence{ step6ReadPlan1}
let step6 = Tuple{source = self.Surface, target = self.Ellipse_Surface, multiplicity = 1, rdSeq = step6ReadSeq}

let step7ReadPlan1 = Tuple{sourceAttr = self.Surface.surf_id, targetAttr = self.CorridorArea_Surface.corridor_area_id}
let step7ReadSeq = Sequence{ step7ReadPlan1}
let step7 = Tuple{source = self.Surface, target = self.CorridorArea_Surface, multiplicity = 1, rdSeq = step7ReadSeq}

let step8ReadPlan1 = Tuple{sourceAttr = self.Surface.surf_id, targetAttr = self.Location.loc_id}
let step8ReadSeq = Sequence{ step8ReadPlan1}
let step8 = Tuple{source = self.Surface, target = self.Location, multiplicity = 1, rdSeq = step8ReadSeq}

let constructionSequence = Sequence{self.Surface, step1, step2, step3, step4, step5, step6, step7, step8}
```

self.surface-id = self.CorridorArea_Surface.CorridorArea.corridor-area-id

Context Surface, inv Surface_CorridorArea_Surface:

self.surface-id = self.TrackArea_Surface.TrackArea.track-area-id

Context Surface, inv Surface_TrackArea_Surface:

self.surface-id = self.PolygonArea_Surface.PolygonArea.polygon-area-id

Context Surface, inv Surface_PolygonArea_Surface:

self.surface-id = self.PolyarcArea_Surface.PolyarcArea.polyarc-area-id

Context Surface, inv Surface_PolyarcArea_Surface:

self.surface-id = self.OrbitArea_Surface.OrbitArea.orbit-area-id

Context Surface, inv Surface_OrbitArea_Surface:

self.surface-id = self.Location.location-id

Context Surface, inv Surface_Location:

self.surface-id = self.FanArea_Surface.FanArea.fan-area-id

Context Surface, inv Surface_FanArea_Surface:

self.surface-id = self.Ellipse_Surface.Ellipse.ellipse-id

Context Surface, inv Surface_Ellipse_Surface:

Enclosing Transactional: Surface_Item

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	OrbitArea_Surface («Transactional»)	Navigation Constraints: Surface_Discriminator_OrbitArea_Surface}: inv: self.Surface.surface-category-code='ORBTAR' Tagged Values:
Name: Type: Aggregation	PolygonArea_Surface («Transactional»)	Navigation Constraints: Surface_Discriminator_PolygonArea_Surface}: inv: self.Surface.surface-category-code='PLYGAR' Tagged Values:
Name: Type: Aggregation	PolyarcArea_Surface («Transactional»)	Navigation Constraints: Surface_Discriminator_PolyarcArea_Surface}: inv: self.Surface.surface-category-code='PLYAAR' Tagged Values:
Name: Type: Aggregation	FanArea («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	TrackArea_Surface («Transactional»)	Navigation Constraints: Surface_Discriminator_TrackArea_Surface}: inv: self.Surface.surface-category-code='TRCKAR' Tagged Values:

Name: Type: Aggregation	PolygonArea («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	CorridorArea («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Location («Wrapper»)	Navigation Constraints: Surface_Enforced_Location}; inv: self.Location.location-category-code='SURFAC' Tagged Values:
Name: Type: Aggregation	OrbitArea («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	PolyarcArea («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	Surface («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	TrackArea («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Ellipse («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	FanArea_Surface («Transactional»)	Navigation Constraints: Surface_Discriminator_FanArea_Surface}; inv: self.Surface.surface-category-code='FA' Tagged Values:
Name: Type: Aggregation	Ellipse_Surface («Transactional»)	Navigation Constraints: Surface_Discriminator_Ellipse_Surface}; inv: self.Surface.surface-category-code='ELLPSE' Tagged Values:
Name: Type: Aggregation	CorridorArea_Surface («Transactional»)	Navigation Constraints: Surface_Discriminator_CorridorArea_Surface}; inv: self.Surface.surface-category-code='CORDAR' Tagged Values:

C.8.21 Surface_Volume

The Surface_Volume Transactional Artifact captures information about a geometric-volume that has horizontal boundaries specified by a specific surface.

oclConstructionSequence

Context Surface_Volume

```

let step1ReadPlan1 = Tuple{sourceAttr = self.SurfaceVolume.surf_vol_dfng_surf_id, targetAttr =
self.Surface_Item.surf_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.SurfaceVolume, target = self.Surface_Item, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.SurfaceVolume.surf_vol_id, targetAttr =
self.GeometricVolume.geom_vol_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.SurfaceVolume, target = self.GeometricVolume, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.GeometricVolume.geom_vol_id, targetAttr = self.Location.loc_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.GeometricVolume, target = self.Location, multiplicity = 1, rdSeq = step3ReadSeq}

let constructionSequence = Sequence{self.SurfaceVolume, step1, step2, step3}

```

self.surface-volume-id = self.GeometricVolume.geometric-volume-id

Context SurfaceVolume, inv SurfaceVolume_GeometricVolume:

self.surface-volume-defining-surface-id = self.Surface_Item.Surface.surface-id

Context SurfaceVolume, inv SurfaceVolume_Surface_Item:

self.geometric-volume-id = self.Location.location-id

Context GeometricVolume, inv GeometricVolume_Location:

Enclosing Transactional: Surface_Volume

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

\

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Location («Wrapper»)	Navigation Constraints: GeometricVolume_Enforced_Location}; inv:self.Location.location-category-code='VL' Tagged Values:

Name: Type: Aggregation	GeometricVolume («Wrapper»)	Navigation Constraints: SurfaceVolume_Enforced_GeometricVolume: inv: self.GeometricVolume.geometric-volume-category-code='SURVOL' Tagged Values:
Name: Identifier Type: Aggregation	SurfaceVolume («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	Surface_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.8.22 TrackArea_Surface

The TrackArea_Surface Transactional Artifact captures information about a specific planar surface that is rectangular with its length defined by two specific Points, and its width by the sum of the widths to the left and right of the line between the two Points. It is a support transactional used in the Surface_Item Transactional Artifact.

self.track-area-end-point-id = self.Point_Item.Point.point-id
Context TrackArea, inv TrackArea_Point_Item:

self.track-area-begin-point-id = self.Point_Item.Point.point-id
Context TrackArea, inv TrackArea_Point_Item:

oclConstructionSequence

Context TrackArea_Surface

```

let step1ReadPlan1 = Tuple{sourceAttr = self.TrackArea.track_area_end_point_id, targetAttr = self.Point_Item.point_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.TrackArea, target = self.Point_Item, multiplicity = 2, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.TrackArea.track_area_begin_point_id, targetAttr = self.Point_Item.point_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.TrackArea, target = self.Point_Item, multiplicity = 2, rdSeq = step2ReadSeq}

let constructionSequence = Sequence{self.TrackArea, step1, step2}

```

Enclosing Transactional: TrackArea_Surface

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Point_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	TrackArea («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True

C.9 Materiel

C.9.1 Consumable_Materiel_Type

The Consumable_Materiel_Type Transactional Artifact captures information about those materiel-types that are expendable classes of supply, such as types of ammunition or types of chemical materials. The information captured in this transactional relates primarily to the packaging and issue of these consumables, but also includes information about the perishability and hazards posed by the type of materiel.

self.consumable-materiel-type-id = self.ChemicalMaterielType.chemical-materiel-type-id
Context ConsumableMaterielType, inv ConsumableMaterielType_ChemicalMaterielType:

self.materiel-type-id = self.ObjectType.object-type-id
Context MaterielType, inv MaterielType_ObjectType:

self.consumable-materiel-type-id = self.MaterielType.materiel-type-id
Context ConsumableMaterielType, inv ConsumableMaterielType_MaterielType:

self.consumable-materiel-type-id = self.BiologicalMaterielType.biological-materiel-type-id
Context ConsumableMaterielType, inv ConsumableMaterielType_BiologicalMaterielType:

self.consumable-materiel-type-id = self.AmmunitionType.ammunition-type-id
Context ConsumableMaterielType, inv ConsumableMaterielType_AmmunitionType:

oclConstructionSequence

Context Consumable_Materiel_Type

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ConsumableMaterielType.cons_mat_type_id, targetAttr =
self.MaterielType.mat_type_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ConsumableMaterielType, target = self.MaterielType, multiplicity = 1, rdSeq =
step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.MaterielType.mat_type_id, targetAttr = self.ObjectType.obj_type_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.MaterielType, target = self.ObjectType, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ConsumableMaterielType.cons_mat_type_id, targetAttr =
self.ChemicalMaterielType.chm_mat_type_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ConsumableMaterielType, target = self.ChemicalMaterielType, multiplicity = 1, rdSeq =
step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.ConsumableMaterielType.cons_mat_type_id, targetAttr =
self.BiologicalMaterielType.bio_mat_type_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.ConsumableMaterielType, target = self.BiologicalMaterielType, multiplicity = 1, rdSeq =
step4ReadSeq}

let step5ReadPlan1 = Tuple{sourceAttr = self.ConsumableMaterielType.cons_mat_type_id, targetAttr =
self.AmmunitionType.ammo_type_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.ConsumableMaterielType, target = self.AmmunitionType, multiplicity = 1, rdSeq =
step5ReadSeq}

let step6ReadPlan1 = Tuple{sourceAttr = self.ConsumableMaterielType.cons_mat_type_id, targetAttr =
self.RadioactiveMaterielType.radact_mat_type_id}
let step6ReadSeq = Sequence{ step6ReadPlan1}
let step6 = Tuple{source = self.ConsumableMaterielType, target = self.RadioactiveMaterielType, multiplicity = 1, rdSeq =
step6ReadSeq}

let constructionSequence = Sequence{self.ConsumableMaterielType, step1, step2, step3, step4, step5, step6}
```

self.consumable-materiel-type-id = self.RadioactiveMaterielType.radioactive-materiel-type-id

Context ConsumableMaterielType, inv ConsumableMaterielType_RadioactiveMaterielType:

Enclosing Transactional: Consumable_Materiel_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: MaterielType_Enforced_ObjectType}: inv:self.ObjectType.object-type-category-code='MA' Tagged Values:
Name: Identifier Type: Aggregation	ConsumableMaterielType («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	MaterielType («Wrapper»)	Navigation Constraints: ConsumableMaterielType_Enforced_MaterielType}: inv: self.MaterielType.materiel-type-category-code='CM' Tagged Values:
Name: Type: Aggregation	ChemicalMaterielType («Wrapper»)	Navigation Constraints: ConsumableMaterielType_Discriminator_ChemicalMaterielType}: inv: self.ConsumableMaterielType.consumable-materiel-type-category-code='CHMMAT' Tagged Values:
Name: Type: Aggregation	AmmunitionType («Wrapper»)	Navigation Constraints: ConsumableMaterielType_Discriminator_AmmunitionType} : inv: self.ConsumableMaterielType.consumable-materiel-type-category-code='AMMO' Tagged Values:
Name: Type: Aggregation	BiologicalMaterielType («Wrapper»)	Navigation Constraints: ConsumableMaterielType_Discriminator_BiologicalMaterielType}: inv: self.ConsumableMaterielType.consumable-materiel-type-category-code='BIOMAT' Tagged Values:

Name: Type: Aggregation	RadioactiveMaterielType («Wrapper»)	Navigation Constraints: ConsumableMaterielType_Discriminator_RadioactiveMaterielType}: inv: self.ConsumableMaterielType.consumable-materiel-type-category-code='RADMAT' Tagged Values:
--	--	---

C.9.2 Equipment_Type

The Equipment_Type Transactional Artifact captures information about a Materiel Type that is not intended for consumption.

self.equipment-type-id = self.ElectronicEquipmentType.electronic-equipment-type-id
Context EquipmentType, inv EquipmentType_ElectronicEquipmentType:

self.transmission-capability-id = self.Capability.capability-id
Context TransmissionCapability, inv TransmissionCapability_Capability:

self.materiel-type-id = self.ObjectType.object-type-id
Context MaterielType, inv MaterielType_ObjectType:

self.equipment-type-id = self.WeaponType.weapon-type-id
Context EquipmentType, inv EquipmentType_WeaponType:

self.equipment-type-id = self.Vessel_Type.VesselType.vessel-type-id
Context EquipmentType, inv EquipmentType_Vessel_Type:

self.equipment-type-id = self.VehicleType.vehicle-type-id
Context EquipmentType, inv EquipmentType_VehicleType:

self.equipment-type-id = self.RailcarType.railcar-type-id
Context EquipmentType, inv EquipmentType_RailcarType:

self.equipment-type-id = self.MiscellaneousEquipmentType.miscellaneous-equipment-type-id
Context EquipmentType, inv EquipmentType_MiscellaneousEquipmentType:

self.equipment-type-id = self.MaterielType.materiel-type-id
Context EquipmentType, inv EquipmentType_MaterielType:

self.equipment-type-id = self.EngineeringEquipmentType.engineering-equipment-type-id
Context EquipmentType, inv EquipmentType_EngineeringEquipmentType:

self.equipment-type-id = self.CbrnEquipmentType.cbrn-equipment-type-id
Context EquipmentType, inv EquipmentType_CbrnEquipmentType:

self.equipment-type-id = self.AircraftType.aircraft-type-id
Context EquipmentType, inv EquipmentType_AircraftType:

self.electronic-equipment-type-id = self.TransmissionCapability.electronic-equipment-type-id
Context ElectronicEquipmentType, inv ElectronicEquipmentType_TransmissionCapability:

oclConstructionSequence

Context Equipment_Type

```
let step1ReadPlan1 = Tuple{sourceAttr = self.EquipmentType.eqpt_type_id, targetAttr = self.Vessel_Type.vessel_type_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.EquipmentType, target = self.Vessel_Type, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.EquipmentType.eqpt_type_id, targetAttr = self.MaterielType.mat_type_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.EquipmentType, target = self.MaterielType, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.MaterielType.mat_type_id, targetAttr = self.ObjectType.obj_type_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.MaterielType, target = self.ObjectType, multiplicity = 1, rdSeq = step3ReadSeq}
```

```
let step4ReadPlan1 = Tuple{sourceAttr = self.EquipmentType.eqpt_type_id, targetAttr =
self.EngineeringEquipmentType.eng_eqpt_type_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.EquipmentType, target = self.EngineeringEquipmentType, multiplicity = 1, rdSeq =
step4ReadSeq}
```

```
let step5ReadPlan1 = Tuple{sourceAttr = self.EquipmentType.eqpt_type_id, targetAttr =
self.ElectronicEquipmentType.elctrc_eqpt_type_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.EquipmentType, target = self.ElectronicEquipmentType, multiplicity = 1, rdSeq =
step5ReadSeq}
```

```
let step6ReadPlan1 = Tuple{sourceAttr = self.ElectronicEquipmentType.elctrc_eqpt_type_id, targetAttr =
self.TransmissionCapability.elctrc_eqpt_type_id}
let step6ReadSeq = Sequence{ step6ReadPlan1}
let step6 = Tuple{source = self.ElectronicEquipmentType, target = self.TransmissionCapability, multiplicity = 1, rdSeq =
step6ReadSeq}
```

```
let step7ReadPlan1 = Tuple{sourceAttr = self.TransmissionCapability.trnsm_capab_id, targetAttr =
self.Capability.capab_id}
let step7ReadSeq = Sequence{ step7ReadPlan1}
let step7 = Tuple{source = self.TransmissionCapability, target = self.Capability, multiplicity = 1, rdSeq = step7ReadSeq}
```

```
let step8ReadPlan1 = Tuple{sourceAttr = self.EquipmentType.eqpt_type_id, targetAttr =
self.CbrnEquipmentType.cbrn_eqpt_type_id}
```

```

let step8ReadSeq = Sequence{ step8ReadPlan1}
let step8 = Tuple{source = self.EquipmentType, target = self.CbrnEquipmentType, multiplicity = 1, rdSeq =
step8ReadSeq}

let step9ReadPlan1 = Tuple{sourceAttr = self.EquipmentType.eqpt_type_id, targetAttr = self.AircraftType.acft_type_id}
let step9ReadSeq = Sequence{ step9ReadPlan1}
let step9 = Tuple{source = self.EquipmentType, target = self.AircraftType, multiplicity = 1, rdSeq = step9ReadSeq}

let step10ReadPlan1 = Tuple{sourceAttr = self.EquipmentType.eqpt_type_id, targetAttr =
self.WeaponType.weapon_type_id}
let step10ReadSeq = Sequence{ step10ReadPlan1}
let step10 = Tuple{source = self.EquipmentType, target = self.WeaponType, multiplicity = 1, rdSeq = step10ReadSeq}

let step11ReadPlan1 = Tuple{sourceAttr = self.EquipmentType.eqpt_type_id, targetAttr = self.RailcarType.railcar_type_id}
let step11ReadSeq = Sequence{ step11ReadPlan1}
let step11 = Tuple{source = self.EquipmentType, target = self.RailcarType, multiplicity = 1, rdSeq = step11ReadSeq}

let step12ReadPlan1 = Tuple{sourceAttr = self.EquipmentType.eqpt_type_id, targetAttr =
self.VehicleType.vehicle_type_id}
let step12ReadSeq = Sequence{ step12ReadPlan1}
let step12 = Tuple{source = self.EquipmentType, target = self.VehicleType, multiplicity = 1, rdSeq = step12ReadSeq}

let step13ReadPlan1 = Tuple{sourceAttr = self.EquipmentType.eqpt_type_id, targetAttr =
self.MiscellaneousEquipmentType.misc_eqpt_type_id}
let step13ReadSeq = Sequence{ step13ReadPlan1}
let step13 = Tuple{source = self.EquipmentType, target = self.MiscellaneousEquipmentType, multiplicity = 1, rdSeq =
step13ReadSeq}

let step14ReadPlan1 = Tuple{sourceAttr = self.EquipmentType.eqpt_type_id, targetAttr =
self.MaritimeEquipmentType.mrt_eqpt_type_id}
let step14ReadSeq = Sequence{ step14ReadPlan1}
let step14 = Tuple{source = self.EquipmentType, target = self.MaritimeEquipmentType, multiplicity = 1, rdSeq =
step14ReadSeq}

let constructionSequence = Sequence{self.EquipmentType, step1, step2, step3, step4, step5, step6, step7, step8,
step9, step10, step11, step12, step13, step14}

```

self.equipment-type-id = self.MaritimeEquipmentType.maritime-equipment-type-id

Context EquipmentType, inv EquipmentType_MaritimeEquipmentType:

Enclosing Transaction: Equipment_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtyped (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	MiscellaneousEquipmentType («Wrapper»)	Navigation Constraints: EquipmentType_Discriminator_MiscellaneousEquipmentType}: inv: self.EquipmentType.equipment-type-category-code='MISCEQ' Tagged Values:
Name: Type: Aggregation	AircraftType («Wrapper»)	Navigation Constraints: EquipmentType_Discriminator_AircraftType}: inv: self.EquipmentType.equipment-type-category-code='AIRCFT' Tagged Values:
Name: Type: Aggregation	RailcarType («Wrapper»)	Navigation Constraints: EquipmentType_Discriminator_RailcarType}: inv: self.EquipmentType.equipment-type-category-code='RAIL' Tagged Values:
Name: Type: Aggregation	Vessel_Type («Transactional»)	Navigation Constraints: EquipmentType_Discriminator_Vessel_Type}: inv: self.EquipmentType.equipment-type-category-code='VESSEL' Tagged Values:
Name: Type: Aggregation	ElectronicEquipmentType («Wrapper»)	Navigation Constraints: EquipmentType_Discriminator_ElectronicEquipmentType}: inv: self.EquipmentType.equipment-type-category-code='ELCTRN' Tagged Values:
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: MaterielType_Enforced_ObjectType}: inv: self.ObjectType.object-type-category-code='MA' Tagged Values:

Name: Type: Aggregation	TransmissionCapability («Wrapper»)	Navigation Constraints: EquipmentType_Discriminator_TransmissionCapability}: inv: self.EquipmentType.equipment-type-category-code='ELCTRN' Tagged Values:
Name: Type: Aggregation	EngineeringEquipmentType («Wrapper»)	Navigation Constraints: EquipmentType_Discriminator_EngineeringEquipmentType}: inv: self.EquipmentType.equipment-type-category-code='ENGEQ' Tagged Values:
Name: Type: Aggregation	MaritimeEquipmentType («Wrapper»)	Navigation Constraints: EquipmentType_Discriminator_MaritimeEquipmentType}: inv: self.EquipmentType.equipment-type-category-code='MRTMEQ' Tagged Values:
Name: Type: Aggregation	WeaponType («Wrapper»)	Navigation Constraints: EquipmentType_Discriminator_WeaponType_Discriminator}: inv: self.EquipmentType.equipment-type-category-code='WEPTYP' Tagged Values:
Name: Type: Aggregation	CbrnEquipmentType («Wrapper»)	Navigation Constraints: EquipmentType_Discriminator_CbrnEquipmentType}: inv: self.EquipmentType.equipment-type-category-code='CBRNEQ' Tagged Values:
Name: Type: Aggregation	MaterielType («Wrapper»)	Navigation Constraints: EquipmentType_Enforced_MaterielType}: inv: self.MaterielType.materiel-type-category-code='EQ' Tagged Values:
Name: Type: Aggregation	VehicleType («Wrapper»)	Navigation Constraints: EquipmentType_Discriminator_VehicleType}: inv: self.EquipmentType.equipment-type-category-code='VEHCLE' Tagged Values:

Name: Type: Aggregation	Capability («Wrapper»)	Navigation Constraints: EquipmentType_Discriminator_Capability): inv: self.EquipmentType.equipment-type-category-code='ELCTRN' Tagged Values:
Name: Identifier Type: Aggregation	EquipmentType («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True

C.9.3 Materiel_Item

The Materiel_Item Transactional Artifact captures information about an individually identified instance of equipment, apparatus or supplies of military interest without distinction as to its application for administrative or combat purposes. There is only one subtype of material, an Instrument Landing System.

self.materiel-id = self.ObjectItem.object-item-id

Context Materiel, inv Materiel_ObjectItem:

self.object-item-id = self.ObjectItemAlias.object-item-id

Context ObjectItem, inv ObjectItem_ObjectItemAlias:

self.materiel-id = self.InstrumentLandingSystem.instrument-landing-system-id

Context Materiel, inv Materiel_InstrumentLandingSystem:

oclConstructionSequence

Context Materiel_Item

```
let step1ReadPlan1 = Tuple{sourceAttr = self.Materiel.mat_id, targetAttr = self.ObjectItem.obj_item_id}
```

```
let step1ReadSeq = Sequence{ step1ReadPlan1}
```

```
let step1 = Tuple{source = self.Materiel, target = self.ObjectItem, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectItem.obj_item_id, targetAttr = self.ObjectItemAlias.obj_item_id}
```

```
let step2ReadSeq = Sequence{ step2ReadPlan1}
```

```
let step2 = Tuple{source = self.ObjectItem, target = self.ObjectItemAlias, multiplicity = 0..1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.Materiel.mat_id, targetAttr =
```

```
self.InstrumentLandingSystem.inst_indg_sys_id}
```

```
let step3ReadSeq = Sequence{ step3ReadPlan1}
```

```
let step3 = Tuple{source = self.Materiel, target = self.InstrumentLandingSystem, multiplicity = 0..1, rdSeq = step3ReadSeq}
```

```
let constructionSequence = Sequence{self.Materiel, step1, step2, step3}
```

Enclosing Transactional: Materiel_Item

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Identifier Type: Aggregation	Materiel («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Materiel_Enforced_ObjectItem: inv:self.ObjectItem.object-item-category-code='MA' Tagged Values:
Name: Type: Aggregation	ObjectItemAlias («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	InstrumentLandingSystem («Wrapper»)	Navigation Constraints: Materiel_Discriminator_InstrumentLandingSystem: inv: self.Materiel.materiel-category-code='ILS' Tagged Values:

C.9.4 Materiel_Item_Type

The Material_Item_Type Transactional Artifact captures information about the perceived classification of a specific material-item as a specific material-type. This transactional encloses the Absolute_Reporting_Data Transactional Artifact in which information about the type classification is captured.

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id
Context ObjectItemType, inv ObjectItemType_Absolute_Reporting_Data:

self.object-type-id = self.ObjectType.object-type-id
Context ObjectItemType, inv ObjectItemType_ObjectType:

self.object-type-id = self.Materiel_Type.MaterielType.materiel-type-id
Context ObjectType, inv ObjectType_Materiel_Type:

self.object-item-id = self.ObjectItem.object-item-id
Context ObjectItemType, inv ObjectItemType_ObjectItem:

self.object-item-id = self.Materiel_Item.Materiel.materiel-id

Context ObjectItem, inv ObjectItem_Materiel_Item:

oclConstructionSequence

Context Materiel_Item_Type

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectItemType.rptd_id, targetAttr = self.Absolute_Reporting_Data.rptd_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ObjectItemType, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectItemType.obj_type_id, targetAttr = self.ObjectType.obj_type_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ObjectItemType, target = self.ObjectType, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectType.obj_type_id, targetAttr = self.Materiel_Type.mat_type_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ObjectType, target = self.Materiel_Type, multiplicity = 1, rdSeq = step3ReadSeq}
```

```
let step4ReadPlan1 = Tuple{sourceAttr = self.ObjectItemType.obj_item_id, targetAttr = self.ObjectItem.obj_item_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.ObjectItemType, target = self.ObjectItem, multiplicity = 1, rdSeq = step4ReadSeq}
```

```
let step5ReadPlan1 = Tuple{sourceAttr = self.ObjectItem.obj_item_id, targetAttr = self.Materiel_Item.mat_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.ObjectItem, target = self.Materiel_Item, multiplicity = 1, rdSeq = step5ReadSeq}
```

```
let constructionSequence = Sequence{self.ObjectItemType, step1, step2, step3, step4, step5}
```

Enclosing Transactional: Materiel_Item_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Materiel_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Materiel_Type («Transactional»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ObjectItemType («Wrapper»)	Navigation Constraints: Tagged Values: isWatchPoint = TrueisIdentifier = True

Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Materiel_Item_Enforced_ObjectItem: inv: self.ObjectType.object-type-category-code='MA' Tagged Values:
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: Materiel_Type_Enforced_ObjectType: inv: self.ObjectType.object-type-category-code='MA' Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:

C.9.5 Materiel_Position

The Material_Position Transactional Artifact captures information about the association of a material to a location so that the geographic position of the material can be specified. This transactional encloses the Location_Composite Transactional Artifact to support the specification of the location in geometrical terms. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the location association is captured.

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id

Context ObjectItemLocation, inv ObjectItemLocation_Absolute_Reporting_Data:

self.object-item-id = self.ObjectItem.object-item-id

Context ObjectItemLocation, inv ObjectItemLocation_ObjectItem:

self.object-item-id = self.Materiel_Item.Materiel.materiel-id

Context ObjectItem, inv ObjectItem_Materiel_Item:

self.location-id = self.Location_Composite.Location.location-id

Context ObjectItemLocation, inv ObjectItemLocation_Location_Composite:

oclConstructionSequence

Context Materiel_Position

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectItemLocation.loc_id, targetAttr = self.Location_Composite.loc_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ObjectItemLocation, target = self.Location_Composite, multiplicity = 1, rdSeq =
step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectItemLocation.rptd_id, targetAttr =
self.Absolute_Reporting_Data.rptd_id}
```

```

let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ObjectItemLocation, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq =
step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectItemLocation.obj_item_id, targetAttr = self.ObjectItem.obj_item_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ObjectItemLocation, target = self.ObjectItem, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.ObjectItem.obj_item_id, targetAttr = self.Materiel_Item.mat_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.ObjectItem, target = self.Materiel_Item, multiplicity = 1, rdSeq = step4ReadSeq}

let constructionSequence = Sequence{self.ObjectItemLocation, step1, step2, step3, step4}

```

Enclosing Transactional: Materiel_Position

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Materiel_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Location_Composite («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Materiel_Item_Enforced_ObjectItem: inv: self.ObjectItem.object-item-category-code='MA' Tagged Values:
Name: Type: Aggregation	Materiel («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ObjectItemLocation («Wrapper»)	Navigation Constraints: Tagged Values: isWatchPoint = TrueisIdentifier = True
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:

C.9.6 Materiel_Status

The Materiel_Status Transactional Artifact captures information about the condition or status of a specific Material. The status information captured pertains primarily to the operational status and usage of the material, although it also conveys the status of its appearance in terms of colour and markings. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the status report is captured.

oclConstructionSequence

Context Materiel_Status

```
let step1ReadPlan1 = Tuple{sourceAttr = self.MaterielStatus.mat_stat_id, targetAttr = self.UxoStatus.uxo_stat_id}
let step1ReadPlan2 = Tuple{sourceAttr = self.MaterielStatus.obj_item_stat_ix, targetAttr =
self.UxoStatus.obj_item_stat_ix}
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2}
let step1 = Tuple{source = self.MaterielStatus, target = self.UxoStatus, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.MaterielStatus.mat_stat_id, targetAttr = self.MineStatus.mine_stat_id}
let step2ReadPlan2 = Tuple{sourceAttr = self.MaterielStatus.obj_item_stat_ix, targetAttr =
self.MineStatus.obj_item_stat_ix}
let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2}
let step2 = Tuple{source = self.MaterielStatus, target = self.MineStatus, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.MaterielStatus.mat_stat_id, targetAttr = self.ObjectItemStatus.obj_item_id}
let step3ReadPlan2 = Tuple{sourceAttr = self.MaterielStatus.obj_item_stat_ix, targetAttr =
self.ObjectItemStatus.obj_item_stat_ix}
let step3ReadSeq = Sequence{ step3ReadPlan1, step3ReadPlan2}
let step3 = Tuple{source = self.MaterielStatus, target = self.ObjectItemStatus, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.ObjectItemStatus.rptd_id, targetAttr = self.Absolute_Reporting_Data.rptd_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.ObjectItemStatus, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq =
step4ReadSeq}

let step5ReadPlan1 = Tuple{sourceAttr = self.ObjectItemStatus.obj_item_id, targetAttr = self.ObjectItem.obj_item_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.ObjectItemStatus, target = self.ObjectItem, multiplicity = 1, rdSeq = step5ReadSeq}

let step6ReadPlan1 = Tuple{sourceAttr = self.ObjectItem.obj_item_id, targetAttr = self.Materiel_Item.mat_id}
let step6ReadSeq = Sequence{ step6ReadPlan1}
let step6 = Tuple{source = self.ObjectItem, target = self.Materiel_Item, multiplicity = 1, rdSeq = step6ReadSeq}

let constructionSequence = Sequence{self.MaterielStatus, step1, step2, step3, step4, step5, step6}
```

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id

Context ObjectItemStatus, inv ObjectItemStatus_Absolute_Reporting_Data:

self.object-item-id = self.ObjectItem.object-item-id

Context ObjectItemStatus, inv ObjectItemStatus_ObjectItem:

self.object-item-id = self.MaterielStatus.materiel-status-id and self.object-item-status-index =

self.MaterielStatus.object-item-status-index

Context ObjectItemStatus, inv ObjectItemStatus_MaterielStatus:

self.materiel-status-id = self.UxoStatus.uxo-status-id and self.object-item-status-index = self.UxoStatus.object-item-status-index

Context MaterielStatus, inv MaterielStatus_UxoStatus:

self.materiel-status-id = self.MineStatus.mine-status-id and self.object-item-status-index = self.MineStatus.object-item-status-index

Context MaterielStatus, inv MaterielStatus_MineStatus:

Enclosing Transactional: Materiel_Status

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier Type: Aggregation	MaterielStatus («Wrapper»)	Navigation Constraints: ObjectItemStatus_Discriminator_MaterielStatus}: inv: self.ObjectItemStatus.object-item-status-category-code='MA' Tagged Values: isIdentifier = True
Name: Type: Aggregation	MineStatus («Wrapper»)	Navigation Constraints: MaterielStatus_Discriminator_MineStatus}: inv: self.MaterielStatus.materiel-status-category-code='MNESTA' Tagged Values:
Name: WatchPoint Type: Aggregation	ObjectItemStatus («Wrapper»)	Navigation Constraints: Tagged Values: isWatchPoint = True
Name: Type: Aggregation	UxoStatus («Wrapper»)	Navigation Constraints: MaterielStatus_Discriminator_UxoStatus}: inv: self.MaterielStatus.materiel-status-category-code='UXOSTA' Tagged Values:

Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Materiel_Item_Enforced_ObjectItem}; inv: self.ObjectItem.object-item-category-code='MA' Tagged Values:
Name: Type: Aggregation	PersonStatus («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Materiel_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.9.7 Materiel_Type

The Materiel_Type Transactional Artifact captures information about a specific type of Material that is equipment, apparatus or supplies of military interest without distinction as to its application for administrative or combat purposes. There are many types of Material, and three broad hierarchies of these types have been used to capture the additional information characteristics. Each of these hierarchies: Material Type itself, Equipment Type, and Consumable Material Type are themselves expressed as Transactional Artifacts.

self.materiel-type-id = self.Organisation_Materiel_Type_Assoc.OrganisationMaterielTypeAssociation.materiel-type-id
Context MaterielType, inv MaterielType_Organisation_Materiel_Type_Assoc:

self.materiel-type-id = self.ObjectType.object-type-id
Context MaterielType, inv MaterielType_ObjectType:

self.materiel-type-id = self.Equipment_Type.EquipmentType.equipment-type-id
Context MaterielType, inv MaterielType_Equipment_Type:

self.materiel-type-id = self.Consumable_Materiel_Type.ConsumableMaterielType.consumable-materiel-type-id
Context MaterielType, inv MaterielType_Consumable_Materiel_Type:

oclConstructionSequence
Context Materiel_Type

```
let step1ReadPlan1 = Tuple{sourceAttr = self.MaterielType.mat_type_id, targetAttr = self.Equipment_Type.eqpt_type_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.MaterielType, target = self.Equipment_Type, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.MaterielType.mat_type_id, targetAttr =
```

```

self.Consumable_Materiel_Type.cons_mat_type_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.MaterielType, target = self.Consumable_Materiel_Type, multiplicity = 1, rdSeq =
step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.MaterielType.mat_type_id, targetAttr = self.ObjectType.obj_type_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.MaterielType, target = self.ObjectType, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.MaterielType.mat_type_id, targetAttr =
self.Organisation_Materiel_Type_Assoc.mat_type_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.MaterielType, target = self.Organisation_Materiel_Type_Assoc, multiplicity = 0..1, rdSeq =
step4ReadSeq}

let constructionSequence = Sequence{self.MaterielType, step1, step2, step3, step4}

```

Enclosing Transactional: Materiel_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtended (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: MaterielType_Enforced_ObjectType): inv: self.ObjectType.object-type-category-code='MA' Tagged Values:
Name: Identifier Type: Aggregation	MaterielType («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	Organisation_Materiel_Type_Assoc («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Equipment_Type («Transactional»)	Navigation Constraints: MaterielType_Discriminator_Equipment_Type): inv: self.MaterielType.materiel-type-category-code='EQ' Tagged Values:

Name: Type: Aggregation	Consumable_Materiel_Type («Transactional»)	Navigation Constraints: MaterielType_Discriminator_Consumable_Materiel_Type}; inv: self.MaterielType.materiel-type-category-code='CM' Tagged Values:
--	---	---

C.9.8 Principal_Equipment_Type

The Principal_Equipment_Type Transactional Artifact captures the minimum acceptable equipment type information which is predominately associated with a specific type of Unit.

Principal_Equipment_Type is a support transactional of Transactional Artifact Unit_Type.

Enclosing Transactional: Principal_Equipment_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	MaterielType («Wrapper»)	Navigation Constraints: EquipmentType_Enforced_MaterialType}; inv: self.MaterielType.materiel-type-category-code='EQ' Tagged Values:
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: MaterielType_Enforced_ObjectType}; inv: self.ObjectType.object-type-category-code='MA' Tagged Values:
Name: Identifier Type: Aggregation	EquipmentType («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True

C.9.9 Vessel_Type

The Vessel_Type captures information about a type of material that is designed to operate on or under the water surface.

oclConstructionSequence

Context Vessel_Type

```
let step1ReadPlan1 = Tuple{sourceAttr = self.VesselType.vessel_type_id, targetAttr =
self.SurfaceVesselType.surf_vessel_type_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.VesselType, target = self.SurfaceVesselType, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.VesselType.vessel_type_id, targetAttr =
self.SubsurfaceVesselType.subsurf_vessel_type_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.VesselType, target = self.SubsurfaceVesselType, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.VesselType.vessel_type_id, targetAttr = self.EquipmentType.eqpt_type_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.VesselType, target = self.EquipmentType, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.EquipmentType.eqpt_type_id, targetAttr = self.MaterielType.mat_type_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.EquipmentType, target = self.MaterielType, multiplicity = 1, rdSeq = step4ReadSeq}

let step5ReadPlan1 = Tuple{sourceAttr = self.MaterielType.mat_type_id, targetAttr = self.ObjectType.obj_type_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.MaterielType, target = self.ObjectType, multiplicity = 1, rdSeq = step5ReadSeq}

let constructionSequence = Sequence{self.VesselType, step1, step2, step3, step4, step5}
```

self.vessel-type-id = self.SurfaceVesselType.surface-vessel-type-id

Context VesselType, inv VesselType_SurfaceVesselType:

self.vessel-type-id = self.SubsurfaceVesselType.subsurface-vessel-type-id

Context VesselType, inv VesselType_SubsurfaceVesselType:

self.vessel-type-id = self.EquipmentType.equipment-type-id

Context VesselType, inv VesselType_EquipmentType:

self.equipment-type-id = self.MaterielType.materiel-type-id

Context EquipmentType, inv EquipmentType_MaterielType:

self.materiel-type-id = self.ObjectType.object-type-id

Context MaterielType, inv MaterielType_ObjectType:

Enclosing Transactional: Vessel_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier Type: Aggregation	VesselType («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	EquipmentType («Wrapper»)	Navigation Constraints: VesselType_Enforced_EquipmentType: inv: self.EquipmentType.equipment-type-category-code='VESSEL' Tagged Values:
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: MaterielType_Enforced_ObjectType: inv: self.ObjectType.object-type-category-code='MA' Tagged Values:
Name: Type: Aggregation	MaterielType («Wrapper»)	Navigation Constraints: EquipmentType_Enforced_MaterielType: inv:self.MaterielType.materiel-type-category-code='EQ' Tagged Values:
Name: Type: Aggregation	SurfaceVesselType («Wrapper»)	Navigation Constraints: VesselType_Discriminator_SurfaceVesselType: inv: self.VesselType.vessel-type-category-code='SURFAC' Tagged Values:
Name: Type: Aggregation	SubsurfaceVesselType («Wrapper»)	Navigation Constraints: VesselType_Discriminator_SubsurfaceVesselType: inv:self.VesselType.vessel-type-category-code='SUBSRF' Tagged Values:

C.10 MeteorologicalFeature

C.10.1 MeteorologicalFeature_Item

The MeteorologicalFeature_Item Transactional Artifact captures information about a specific instance of weather and light conditions at a specific location at a specific time that has been reported or forecast. A number of child transactionals contribute to the assembly of a complete meteorological picture: including Atmosphere, Cloud_Cover, Icing, Precipitation, Wind, Light, and Visibility.

self.meteorologic-feature-id = self.Light.light-id

Context MeteorologicFeature, inv MeteorologicFeature_Light:

self.meteorologic-feature-id = self.Icing.icing-id

Context MeteorologicFeature, inv MeteorologicFeature_Icing:

self.meteorologic-feature-id = self.Feature.feature-id

Context MeteorologicFeature, inv MeteorologicFeature_Feature:

self.meteorologic-feature-id = self.CloudCover.cloud-cover-id

Context MeteorologicFeature, inv MeteorologicFeature_CloudCover:

self.meteorologic-feature-id = self.Atmosphere.atmosphere-id

Context MeteorologicFeature, inv MeteorologicFeature_Atmosphere:

self.feature-id = self.ObjectItem.object-item-id

Context Feature, inv Feature_ObjectItem:

oclConstructionSequence

Context MeteorologicalFeature_Item

```
let step1ReadPlan1 = Tuple{sourceAttr = self.MeteorologicFeature.met_feat_id, targetAttr =
self.CloudCover.cloud_cover_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.MeteorologicFeature, target = self.CloudCover, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.MeteorologicFeature.met_feat_id, targetAttr =
self.Atmosphere.atmosphere_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.MeteorologicFeature, target = self.Atmosphere, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.MeteorologicFeature.met_feat_id, targetAttr = self.Visibility.visibility_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.MeteorologicFeature, target = self.Visibility, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.MeteorologicFeature.met_feat_id, targetAttr =
self.Precipitation.precipitation_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
```

```

let step4 = Tuple{source = self.MeteorologicFeature, target = self.Precipitation, multiplicity = 1, rdSeq = step4ReadSeq}

let step5ReadPlan1 = Tuple{sourceAttr = self.MeteorologicFeature.met_feat_id, targetAttr = self.Feature.feat_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.MeteorologicFeature, target = self.Feature, multiplicity = 1, rdSeq = step5ReadSeq}

let step6ReadPlan1 = Tuple{sourceAttr = self.Feature.feat_id, targetAttr = self.ObjectItem.obj_item_id}
let step6ReadSeq = Sequence{ step6ReadPlan1}
let step6 = Tuple{source = self.Feature, target = self.ObjectItem, multiplicity = 1, rdSeq = step6ReadSeq}

let step7ReadPlan1 = Tuple{sourceAttr = self.ObjectItem.obj_item_id, targetAttr = self.ObjectItemAlias.obj_item_id}
let step7ReadSeq = Sequence{ step7ReadPlan1}
let step7 = Tuple{source = self.ObjectItem, target = self.ObjectItemAlias, multiplicity = 1, rdSeq = step7ReadSeq}

let step8ReadPlan1 = Tuple{sourceAttr = self.MeteorologicFeature.met_feat_id, targetAttr = self.Wind.wind_id}
let step8ReadSeq = Sequence{ step8ReadPlan1}
let step8 = Tuple{source = self.MeteorologicFeature, target = self.Wind, multiplicity = 1, rdSeq = step8ReadSeq}

let step9ReadPlan1 = Tuple{sourceAttr = self.MeteorologicFeature.met_feat_id, targetAttr = self.Light.light_id}
let step9ReadSeq = Sequence{ step9ReadPlan1}
let step9 = Tuple{source = self.MeteorologicFeature, target = self.Light, multiplicity = 1, rdSeq = step9ReadSeq}

let step10ReadPlan1 = Tuple{sourceAttr = self.MeteorologicFeature.met_feat_id, targetAttr = self.Icing.icing_id}
let step10ReadSeq = Sequence{ step10ReadPlan1}
let step10 = Tuple{source = self.MeteorologicFeature, target = self.Icing, multiplicity = 1, rdSeq = step10ReadSeq}

let constructionSequence = Sequence{self.MeteorologicFeature, step1, step2, step3, step4, step5, step6, step7,
step8, step9, step10}

```

self.meteorologic-feature-id = self.Visibility.visibility-id
Context MeteorologicFeature, inv MeteorologicFeature_Visibility:

self.meteorologic-feature-id = self.Wind.wind-id
Context MeteorologicFeature, inv MeteorologicFeature_Wind:

self.meteorologic-feature-id = self.Precipitation.precipitation-id
Context MeteorologicFeature, inv MeteorologicFeature_Precipitation:

self.object-item-id = self.ObjectItemAlias.object-item-id
Context ObjectItem, inv ObjectItem_ObjectItemAlias:

Enclosing Transactional: MeteorologicalFeature_Item

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	CloudCover («Wrapper»)	Navigation Constraints: MeteorologicFeature_Discriminator_CloudCover}: inv: self.MeteorologicFeature.meteorologic-feature-category-code='COVER' Tagged Values:
Name: Identifier Type: Aggregation	MeteorologicFeature («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	Wind («Wrapper»)	Navigation Constraints: MeteorologicFeature_Discriminator_Wind}: inv: self.MeteorologicFeature.meteorologic-feature-category-code='WIND' Tagged Values:
Name: Type: Aggregation	Icing («Wrapper»)	Navigation Constraints: MeteorologicFeature_Discriminator_Icing}: inv: self.MeteorologicFeature.meteorologic-feature-category-code='ICING' Tagged Values:
Name: Type: Aggregation	Visibility («Wrapper»)	Navigation Constraints: MeteorologicFeature_Discriminator_Visibility}: inv: self.MeteorologicFeature.meteorologic-feature-category-code='VISIB' Tagged Values:
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Feature_Enforced_ObjectItem}: inv: self.ObjectItem.object-item-category-code='FE' Tagged Values:
Name: Type: Aggregation	Precipitation («Wrapper»)	Navigation Constraints: MeteorologicFeature_Discriminator_Precipitation}: inv: self.MeteorologicFeature.meteorologic-feature-category-code='PRECIP' Tagged Values:

Name: Type: Aggregation	Atmosphere («Wrapper»)	Navigation Constraints: MeteorologicFeature_Discriminator_Atmosphere}; inv: self.MeteorologicFeature.meteorologic-feature-category-code='ATMOS' Tagged Values:
Name: Type: Aggregation	Feature («Wrapper»)	Navigation Constraints: MeteorologicFeature_Enforced_Feature}; inv: self.Feature.feature-category-code='MF' Tagged Values:
Name: Type: Aggregation	ObjectItemAlias («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Light («Wrapper»)	Navigation Constraints: MeteorologicFeature_Discriminator_Light}; inv: self.MeteorologicFeature.meteorologic-feature-category-code='LIGHT' Tagged Values:

C.10.2 MeteorologicalFeature_Position

The MeteorologicalFeature_Position Transactional Artifact captures information about the association of a meteorological-feature to a location so that the geographic position of the meteorological-feature can be specified. This transactional encloses the Location_Composite Transactional Artifact to support the specification of the location in geometrical terms. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the location association is captured.

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id
Context ObjectItemLocation, inv ObjectItemLocation_Absolute_Reporting_Data:

self.object-item-id = self.ObjectItem.object-item-id
Context ObjectItemLocation, inv ObjectItemLocation_ObjectItem:

self.object-item-id = self.Feature.feature-id
Context ObjectItem, inv ObjectItem_Feature:

self.location-id = self.Location_Composite.Location.location-id
Context ObjectItemLocation, inv ObjectItemLocation_Location_Composite:

self.feature-id = self.MeteorologicalFeature_Item.MeteorologicFeature.meteorologic-feature-id
 Context Feature, inv Feature_MeteorologicalFeature_Item:

oclConstructionSequence

Context MeteorologicalFeature_Position

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectItemLocation.loc_id, targetAttr = self.Location_Composite.loc_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ObjectItemLocation, target = self.Location_Composite, multiplicity = 1, rdSeq =
step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectItemLocation.rptd_id, targetAttr =
self.Absolute_Reporting_Data.rptd_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ObjectItemLocation, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq =
step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectItemLocation.obj_item_id, targetAttr = self.ObjectItem.obj_item_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ObjectItemLocation, target = self.ObjectItem, multiplicity = 1, rdSeq = step3ReadSeq}
```

```
let step4ReadPlan1 = Tuple{sourceAttr = self.ObjectItem.obj_item_id, targetAttr = self.Feature.feat_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.ObjectItem, target = self.Feature, multiplicity = 1, rdSeq = step4ReadSeq}
```

```
let step5ReadPlan1 = Tuple{sourceAttr = self.Feature.feat_id, targetAttr = self.MeteorologicalFeature_Item.met_feat_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.Feature, target = self.MeteorologicalFeature_Item, multiplicity = 1, rdSeq = step5ReadSeq}
```

```
let constructionSequence = Sequence{self.ObjectItemLocation, step1, step2, step3, step4, step5}
```

Enclosing Transactional: MeteorologicalFeature_Position

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Location_Composite («Transactional»)	Navigation Constraints: Tagged Values:

Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Feature_Enforced_ObjectItem}: inv: self.ObjectItem.object-item-category-code='FE' Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ObjectItemLocation («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True
Name: Type: Aggregation	Feature («Wrapper»)	Navigation Constraints: MeteorologicalFeature_Item_Enforced_Feature}: inv:self.Feature.feature-category-code='MF' Tagged Values:
Name: Type: Aggregation	MeteorologicalFeature_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.11 ObjectItem

C.11.1 Object_Item_Address

The Object_Item_Address Transactional Artifact captures information about the association between an object-item and an address to specify the means by which a Facility, Person or Organization can be accessed. This transactional encloses the Absolute_Reporting_Data Transactional Artifact in which information about the association report is captured.

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id
Context ObjectItemAddress, inv ObjectItemAddress_Absolute_Reporting_Data:

self.object-item-id = self.ObjectItem.object-item-id
Context ObjectItemAddress, inv ObjectItemAddress_ObjectItem:

self.network-id = self.NetworkFrequency.network-id and self.network-frequency-index = self.NetworkFrequency.network-frequency-index
Context ObjectItemAddress, inv ObjectItemAddress_NetworkFrequency:

self.network-id = self.Network_Facility_Service.NetworkService.network-id and self.network-service-index = self.Network_Facility_Service.NetworkService.network-service-index
Context ElectronicAddress, inv ElectronicAddress_Network_Facility_Service:

self.address-id = self.PhysicalAddress.address-id

Context Address, inv Address_PhysicalAddress:

self.address-id = self.ElectronicAddress.address-id

Context Address, inv Address_ElectronicAddress:

self.address-id = self.Address.address-id

Context ObjectItemAddress, inv ObjectItemAddress_Address:

oclConstructionSequence

Context Object_Item_Address

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectItemAddress.addr_id, targetAttr = self.Address.addr_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ObjectItemAddress, target = self.Address, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.Address.addr_id, targetAttr = self.ElectronicAddress.addr_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.Address, target = self.ElectronicAddress, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.ElectronicAddress.netwrk_id, targetAttr =
self.Network_Facility_Service.netwrk_id}
let step3ReadPlan2 = Tuple{sourceAttr = self.ElectronicAddress.netwrk_service_ix, targetAttr =
self.Network_Facility_Service.netwrk_service_ix}
let step3ReadSeq = Sequence{ step3ReadPlan1, step3ReadPlan2}
let step3 = Tuple{source = self.ElectronicAddress, target = self.Network_Facility_Service, multiplicity = 0..1, rdSeq =
step3ReadSeq}
```

```
let step4ReadPlan1 = Tuple{sourceAttr = self.Address.addr_id, targetAttr = self.PhysicalAddress.addr_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.Address, target = self.PhysicalAddress, multiplicity = 1, rdSeq = step4ReadSeq}
```

```
let step5ReadPlan1 = Tuple{sourceAttr = self.ObjectItemAddress.rptd_id, targetAttr =
self.Absolute_Reporting_Data.rptd_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.ObjectItemAddress, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq =
step5ReadSeq}
```

```
let step6ReadPlan1 = Tuple{sourceAttr = self.ObjectItemAddress.obj_item_id, targetAttr = self.ObjectItem.obj_item_id}
let step6ReadSeq = Sequence{ step6ReadPlan1}
let step6 = Tuple{source = self.ObjectItemAddress, target = self.ObjectItem, multiplicity = 1, rdSeq = step6ReadSeq}
```

```
let step7ReadPlan1 = Tuple{sourceAttr = self.ObjectItemAddress.netwrk_id, targetAttr =
self.NetworkFrequency.netwrk_id}
let step7ReadPlan2 = Tuple{sourceAttr = self.ObjectItemAddress.netwrk_freq_ix, targetAttr =
self.NetworkFrequency.netwrk_freq_ix}
let step7ReadSeq = Sequence{ step7ReadPlan1, step7ReadPlan2}
let step7 = Tuple{source = self.ObjectItemAddress, target = self.NetworkFrequency, multiplicity = 0..1, rdSeq =
step7ReadSeq}
```

```
let constructionSequence = Sequence{self.ObjectItemAddress, step1, step2, step3, step4, step5, step6, step7}
```


Enclosing Transactional: Object_Item_Address

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Address («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Network_Facility_Service («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	NetworkFrequency («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	PhysicalAddress («Wrapper»)	Navigation Constraints: Address_Discriminator_PhysicalAddress: inv: self.Address.address-category-code='PHYADR' Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ObjectItemAddress («Wrapper»)	Navigation Constraints: Tagged Values: isWatchPoint = TrueisIdentifier = True
Name: Type: Aggregation	ElectronicAddress («Wrapper»)	Navigation Constraints: Address_Discriminator_ElectronicAddress: inv: self.Address.address-category-code='ELCADR' Tagged Values:
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:

C.11.2 Object_Item_Affiliation

The Object_Item_Affiliation Transactional Artifact captures information about the allegiances or affiliations to which an object-item may ascribe. Four classes of affiliations (geopolitical, religion, ethnic group, and functional group) provide a rationally organized set of values to enable the capture of multiple affiliations. This transactional encloses the Absolute_Reporting_Data Transactional Artifact in which information about the affiliation report is captured.

self.affiliation-id = self.Affiliation.affiliation-id

Context ObjectItemAffiliation, inv ObjectItemAffiliation_Affiliation:

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id

Context ObjectItemAffiliation, inv ObjectItemAffiliation_Absolute_Reporting_Data:

self.affiliation-id = self.Object_Type_Affiliation.ObjectTypeAffiliation.affiliation-id

Context Affiliation, inv Affiliation_Object_Type_Affiliation:

oclConstructionSequence

Context Object_Item_Affiliation

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectItemAffiliation.affl_id, targetAttr = self.Affiliation.affl_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ObjectItemAffiliation, target = self.Affiliation, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.Affiliation.affl_id, targetAttr = self.Object_Type_Affiliation.affl_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.Affiliation, target = self.Object_Type_Affiliation, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectItemAffiliation.rptd_id, targetAttr =
self.Absolute_Reporting_Data.rptd_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ObjectItemAffiliation, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq =
step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.ObjectItemAffiliation.obj_item_id, targetAttr = self.ObjectItem.obj_item_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.ObjectItemAffiliation, target = self.ObjectItem, multiplicity = 1, rdSeq = step4ReadSeq}

let constructionSequence = Sequence{self.ObjectItemAffiliation, step1, step2, step3, step4}
```

self.object-item-id = self.ObjectItem.object-item-id

Context ObjectItemAffiliation, inv ObjectItemAffiliation_ObjectItem:

Enclosing Transactional: Object_Item_Affiliation

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier WatchPoint Type: Aggregation	ObjectItemAffiliation («Wrapper»)	Navigation Constraints: Tagged Values: isWatchPoint = TrueisIdentifier = True
Name: Type: Aggregation	Affiliation («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Object_Type_Affiliation («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:

C.11.3 Object_Item_Assoc

The Object_Item_Association Transactional Artifact captures information about the associations between specific pairs of object-items.

self.object-item-association-subject-object-item-id = self.ObjectItem.object-item-id
Context ObjectItemAssociation, inv ObjectItemAssociation_ObjectItem:

self.object-item-association-object-object-item-id = self.ObjectItem.object-item-id
Context ObjectItemAssociation, inv ObjectItemAssociation_ObjectItem:

self.action-task-id = self.ActionTask.action-task-id
Context ObjectItemAssociation, inv ObjectItemAssociation_ActionTask:

oclConstructionSequence

Context Object_Item_Assoc

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectItemAssociation.obj_obj_item_id, targetAttr =
self.ObjectItem.obj_item_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ObjectItemAssociation, target = self.ObjectItem, multiplicity = 2, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectItemAssociation.subj_obj_item_id, targetAttr =
self.ObjectItem.obj_item_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ObjectItemAssociation, target = self.ObjectItem, multiplicity = 2, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectItemAssociation.act_task_id, targetAttr = self.ActionTask.act_task_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ObjectItemAssociation, target = self.ActionTask, multiplicity = 0..1, rdSeq =
step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.ObjectItemAssociation.subj_obj_item_id, targetAttr =
self.Organisation_Structure_Detail.subj_obj_item_id}
let step4ReadPlan2 = Tuple{sourceAttr = self.ObjectItemAssociation.obj_obj_item_id, targetAttr =
self.Organisation_Structure_Detail.obj_obj_item_id}
let step4ReadPlan3 = Tuple{sourceAttr = self.ObjectItemAssociation.obj_item_assoc_ix, targetAttr =
self.Organisation_Structure_Detail.obj_item_assoc_ix}
let step4ReadSeq = Sequence{ step4ReadPlan1, step4ReadPlan2, step4ReadPlan3}
let step4 = Tuple{source = self.ObjectItemAssociation, target = self.Organisation_Structure_Detail, multiplicity = 0..1,
rdSeq = step4ReadSeq}

let constructionSequence = Sequence{self.ObjectItemAssociation, step1, step2, step3, step4}
```

Enclosing Transaction: Object_Item_Assoc

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier WatchPoint Type: Aggregation	ObjectItemAssociation («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True
Name: Type: Aggregation	Organisation_Structure_Detail («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ActionTask («Wrapper»)	Navigation Constraints: Tagged Values:

Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Tagged Values:
--	------------------------	---

C.11.4 Object_Item_Assoc_Status

The Object_Item_Association_Status Transactional Artifact captures information about the status of the associations between specific pairs of object-items. Its primary purpose is to mark the beginning and termination of the association. This transactional encloses the Absolute_Reporting_Data Transactional Artifact in which information about the association status report is captured.

self.object-item-association-subject-object-item-id = self.ObjectItem.object-item-id
Context ObjectItemAssociation, inv ObjectItemAssociation_ObjectItem:

self.object-item-association-object-object-item-id = self.ObjectItem.object-item-id
Context ObjectItemAssociation, inv ObjectItemAssociation_ObjectItem:

oclConstructionSequence

Context Object_Item_Assoc_Status

```

let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectItemAssociationStatus.rptd_id, targetAttr =
self.Absolute_Reporting_Data.rptd_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ObjectItemAssociationStatus, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq
= step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectItemAssociationStatus.subj_obj_item_id, targetAttr =
self.ObjectItemAssociation.subj_obj_item_id}
let step2ReadPlan2 = Tuple{sourceAttr = self.ObjectItemAssociationStatus.obj_obj_item_id, targetAttr =
self.ObjectItemAssociation.obj_obj_item_id}
let step2ReadPlan3 = Tuple{sourceAttr = self.ObjectItemAssociationStatus.obj_item_assoc_ix, targetAttr =
self.ObjectItemAssociation.obj_item_assoc_ix}
let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2, step2ReadPlan3}
let step2 = Tuple{source = self.ObjectItemAssociationStatus, target = self.ObjectItemAssociation, multiplicity = 1, rdSeq =
step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectItemAssociation.obj_obj_item_id, targetAttr =
self.ObjectItem.obj_item_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ObjectItemAssociation, target = self.ObjectItem, multiplicity = 2, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.ObjectItemAssociation.subj_obj_item_id, targetAttr =
self.ObjectItem.obj_item_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.ObjectItemAssociation, target = self.ObjectItem, multiplicity = 2, rdSeq = step4ReadSeq}

let constructionSequence = Sequence{self.ObjectItemAssociationStatus, step1, step2, step3, step4}

```

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id
Context ObjectItemAssociationStatus, inv ObjectItemAssociationStatus_Absolute_Reporting_Data:

Enclosing Transactional: Object_Item_Assoc_Status

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	ObjectItemAssociation («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ObjectItemAssociationStatus («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:

C.11.5 Object_Item_Capability

The Object_Item_Capability Transactional Artifact captures information about the perceived capabilities of a specific object-item. This transactional encloses the Capability_Composite Transactional Artifact in which the normal capabilities of the object-types are kept.

oclConstructionSequence

Context Object_Item_Capability

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectItemCapability.capab_id, targetAttr =
self.Capability_Composite.capab_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ObjectItemCapability, target = self.Capability_Composite, multiplicity = 1, rdSeq =
step1ReadSeq}

let constructionSequence = Sequence{self.ObjectItemCapability, step1}
```

self.capability-id = self.Capability_Composite.Capability.capability-id
 Context ObjectItemCapability, inv ObjectItemCapability_Capability_Composite:

Enclosing Transactional: Object_Item_Capability

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtended (Enclosed) Element	Constraints and Tagged Values
Name: Identifier WatchPoint Type: Aggregation	ObjectItemCapability («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True
Name: Type: Aggregation	Capability_Composite («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Tagged Values:

C.11.6 Object_Item_Group_Account

The Object_Item_Group_Account Transactional Artifact captures information about the accounting for a set of groups (person-types) that are associated to object-items normally as the result of an action (e.g. the number killed or injured in a bomb blast, by person-type). This transactional encloses the Object_Item_Group_Account_Detail Transactional Artifact in which the detailed statistics are kept. It also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the group-account association report is captured.

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id
 Context ObjectItemGroupAccount, inv ObjectItemGroupAccount_Absolute_Reporting_Data:

self.object-item-id = self.ObjectItem.object-item-id
 Context ObjectItemGroupAccount, inv ObjectItemGroupAccount_ObjectItem:

self.object-item-id = self.Object_Item_Group_Account_Detail.ObjectItemGroupAccountDetail.object-item-id and self.object-item-group-account-index =

self.Object_Item_Group_Account_Detail.ObjectItemGroupAccountDetail.object-item-group-account-index
Context ObjectItemGroupAccount, inv ObjectItemGroupAccount_Object_Item_Group_Account_Detail:

self.action-id = self.Action.action-id

Context ObjectItemGroupAccount, inv ObjectItemGroupAccount_Action:

oclConstructionSequence

Context Object_Item_Group_Account

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectItemGroupAccount.act_id, targetAttr = self.Action.act_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ObjectItemGroupAccount, target = self.Action, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectItemGroupAccount.obj_item_id, targetAttr =
self.Object_Item_Group_Account_Detail.obj_item_id}
let step2ReadPlan2 = Tuple{sourceAttr = self.ObjectItemGroupAccount.obj_item_group_acct_ix, targetAttr =
self.Object_Item_Group_Account_Detail.obj_item_group_acct_ix}
let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2}
let step2 = Tuple{source = self.ObjectItemGroupAccount, target = self.Object_Item_Group_Account_Detail, multiplicity =
1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectItemGroupAccount.rptd_id, targetAttr =
self.Absolute_Reporting_Data.rptd_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ObjectItemGroupAccount, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq =
step3ReadSeq}
```

```
let step4ReadPlan1 = Tuple{sourceAttr = self.ObjectItemGroupAccount.obj_item_id, targetAttr =
self.ObjectItem.obj_item_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.ObjectItemGroupAccount, target = self.ObjectItem, multiplicity = 1, rdSeq =
step4ReadSeq}
```

```
let constructionSequence = Sequence{self.ObjectItemGroupAccount, step1, step2, step3, step4}
```

Enclosing Transactional: Object_Item_Group_Account

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier WatchPoint Type: Aggregation	ObjectItemGroupAccount («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True isWatchPoint = True

Name: Type: Aggregation	Object_Item_Group_Account_Detail («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Action («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:

C.11.7 Object_Item_Group_Account_Detail

The Object_Item_Group_Account_Detail Transactional Artifact captures information about the total count and condition of a specific group (person-types) that is included in a specific Object Item Group Account, and categorized by a specific Group Characteristic.

self.person-type-id = self.PersonType.person-type-id

Context ObjectItemGroupAccountDetail, inv ObjectItemGroupAccountDetail_PersonType:

self.group-characteristic-id = self.GroupCharacteristic.group-characteristic-id

Context ObjectItemGroupAccountDetail, inv ObjectItemGroupAccountDetail_GroupCharacteristic:

oclConstructionSequence

Context Object_Item_Group_Account_Detail

```

let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectItemGroupAccountDetail.group_chrct_id, targetAttr =
self.GroupCharacteristic.group_chrct_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ObjectItemGroupAccountDetail, target = self.GroupCharacteristic, multiplicity = 1, rdSeq =
step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectItemGroupAccountDetail.pers_type_id, targetAttr =
self.PersonType.pers_type_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ObjectItemGroupAccountDetail, target = self.PersonType, multiplicity = 1, rdSeq =
step2ReadSeq}

let constructionSequence = Sequence{self.ObjectItemGroupAccountDetail, step1, step2}

```

Enclosing Transactional: Object_Item_Group_Account_Detail

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	PersonType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	GroupCharacteristic («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	ObjectItemGroupAccountDetail («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True

C.11.8 Object_Item_Hostility_Status

The Object_Item_Hostility_Status Transactional Artifact captures information about the perceived hostility classification of an Object_Item as determined by the classifying / reporting organization. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the status report is captured.

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id
Context ObjectItemHostilityStatus, inv ObjectItemHostilityStatus_Absolute_Reporting_Data:

self.object-item-id = self.ObjectItem.object-item-id
Context ObjectItemHostilityStatus, inv ObjectItemHostilityStatus_ObjectItem:

oclConstructionSequence

Context Object_Item_Hostility_Status

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectItemHostilityStatus.rptd_id, targetAttr = self.Absolute_Reporting_Data.rptd_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ObjectItemHostilityStatus, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectItemHostilityStatus.obj_item_id, targetAttr = self.ObjectItem.obj_item_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ObjectItemHostilityStatus, target = self.ObjectItem, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let constructionSequence = Sequence{self.ObjectItemHostilityStatus, step1, step2}
```

Enclosing Transactional: Object_Item_Hostility_Status

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier WatchPoint Type: Aggregation	ObjectItemHostilityStatus («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True isWatchPoint = True
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:

C.11.9 Object_Item_Reference_Assoc

The Object_Item_Reference_Association Transactional Artifact captures information about the nature of the relationship between a specific object-item and a specific reference.

self.security-classification-id = self.SecurityClassification.security-classification-id
 Context Reference, inv Reference_SecurityClassification:

self.reference-id = self.Reference.reference-id
 Context ObjectItemReferenceAssociation, inv ObjectItemReferenceAssociation_Reference:

self.object-item-id = self.ObjectItem.object-item-id
 Context ObjectItemReferenceAssociation, inv ObjectItemReferenceAssociation_ObjectItem:

oclConstructionSequence
 Context Object_Item_Reference_Assoc

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectItemReferenceAssociation.ref_id, targetAttr = self.Reference.ref_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ObjectItemReferenceAssociation, target = self.Reference, multiplicity = 1, rdSeq =
```

```

step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.Reference.security_clsfc_id, targetAttr =
self.SecurityClassification.security_clsfc_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.Reference, target = self.SecurityClassification, multiplicity = 0..1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectItemReferenceAssociation.obj_item_id, targetAttr =
self.ObjectItem.obj_item_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ObjectItemReferenceAssociation, target = self.ObjectItem, multiplicity = 1, rdSeq =
step3ReadSeq}

let constructionSequence = Sequence{self.ObjectItemReferenceAssociation, step1, step2, step3}

```

Enclosing Transactional: Object_Item_Reference_Assoc

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtended (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Reference («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ObjectItemReferenceAssociation («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	SecurityClassification («Wrapper»)	Navigation Constraints: Tagged Values:

C.11.10Object_Item_Type

The Object_Item_Type Transactional Artifact captures information about the association of a specific object-item to a specific object_type. This transactional encloses the Absolute_Reporting_Data Transactional Artifact in which information about the association assignment report is captured.

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id
 Context ObjectItemType, inv ObjectItemType_Absolute_Reporting_Data:

self.object-type-id = self.ObjectType.object-type-id
 Context ObjectItemType, inv ObjectItemType_ObjectType:

self.object-item-id = self.ObjectItem.object-item-id
 Context ObjectItemType, inv ObjectItemType_ObjectItem:

oclConstructionSequence

Context Object_Item_Type

```

let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectItemType.rptd_id, targetAttr = self.Absolute_Reporting_Data.rptd_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ObjectItemType, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq =
step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectItemType.obj_type_id, targetAttr = self.ObjectType.obj_type_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ObjectItemType, target = self.ObjectType, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectItemType.obj_item_id, targetAttr = self.ObjectItem.obj_item_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ObjectItemType, target = self.ObjectItem, multiplicity = 1, rdSeq = step3ReadSeq}

let constructionSequence = Sequence{self.ObjectItemType, step1, step2, step3}
  
```

Enclosing Transactional: Object_Item_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier WatchPoint Type: Aggregation	ObjectItemType («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True isWatchPoint = True
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Tagged Values:

Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:
--	--	---

C.11.11 Object_Reference

The Object Reference Transactional Artifact captures information about a specific local frame of reference or Relative Coordinate System specified with respect to the location of a specific object-item. An Object Reference is one of two ways (the other is a Point Reference) that a Relative Coordinate System can be defined. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the status report is captured.

self.location-id = self.Location.location-id

Context ObjectItemLocation, inv ObjectItemLocation_Location:

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id

Context ObjectItemLocation, inv ObjectItemLocation_Absolute_Reporting_Data:

self.relative-coordinate-system-id = self.RelativeCoordinateSystem.relative-coordinate-system-id

Context ObjectReference, inv ObjectReference_RelativeCoordinateSystem:

oclConstructionSequence

Context Object_Reference

```

let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectReference.obj_ref_obj_item_id, targetAttr =
self.ObjectItemLocation.obj_item_id}
let step1ReadPlan2 = Tuple{sourceAttr = self.ObjectReference.obj_ref_loc_id, targetAttr = self.ObjectItemLocation.loc_id}
let step1ReadPlan3 = Tuple{sourceAttr = self.ObjectReference.obj_ref_obj_item_loc_ix, targetAttr =
self.ObjectItemLocation.obj_item_loc_ix}
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2, step1ReadPlan3}
let step1 = Tuple{source = self.ObjectReference, target = self.ObjectItemLocation, multiplicity = 1, rdSeq =
step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectItemLocation.rptd_id, targetAttr =
self.Absolute_Reporting_Data.rptd_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ObjectItemLocation, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq =
step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectItemLocation.obj_item_id, targetAttr = self.ObjectItem.obj_item_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ObjectItemLocation, target = self.ObjectItem, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.ObjectItemLocation.loc_id, targetAttr = self.Location.loc_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.ObjectItemLocation, target = self.Location, multiplicity = 1, rdSeq = step4ReadSeq}

let step5ReadPlan1 = Tuple{sourceAttr = self.ObjectReference.rel_coord_sys_id, targetAttr =

```

```

self.RelativeCoordinateSystem.rel_coord_sys_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.ObjectReference, target = self.RelativeCoordinateSystem, multiplicity = 1, rdSeq =
step5ReadSeq}

```

```

let constructionSequence = Sequence{self.ObjectReference, step1, step2, step3, step4, step5}

```

self.object-item-id = self.ObjectItem.object-item-id

Context ObjectItemLocation, inv ObjectItemLocation_ObjectItem:

Enclosing Transactional: Object_Reference

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	RelativeCoordinateSystem («Wrapper»)	Navigation Constraints: ObjectReference_Enforced_RelativeCoordinateSystem}: inv: self.RelativeCoordinateSystem.relative-coordinate-system-reference-category-code='OBJREF' Tagged Values:
Name: Type: Aggregation	Location («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectItemLocation («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ObjectReference («Wrapper»)	Navigation Constraints: Tagged Values: isWatchPoint = TrueisIdentifier = True
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:

C.12 ObjectType

C.12.1 Object_Item_Object_Type_Establishment

The Object_Item_Object_Type_Establishment Transactional Artifact captures information about the object-items in an establishment.

self.object-item-id = self.ObjectItem.object-item-id

Context ObjectItemObjectTypeEstablishment, inv ObjectItemObjectTypeEstablishment_ObjectItem:

oclConstructionSequence

Context Object_Item_Object_Type_Establishment

```

let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectItemObjectTypeEstablishment.estabd_obj_type_id, targetAttr =
self.ObjectTypeEstablishment.estabd_obj_type_id}
let step1ReadPlan2 = Tuple{sourceAttr = self.ObjectItemObjectTypeEstablishment.obj_type_estab_ix, targetAttr =
self.ObjectTypeEstablishment.obj_type_estab_ix}
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2}
let step1 = Tuple{source = self.ObjectItemObjectTypeEstablishment, target = self.ObjectTypeEstablishment, multiplicity =
1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectItemObjectTypeEstablishment.obj_item_id, targetAttr =
self.ObjectItem.obj_item_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ObjectItemObjectTypeEstablishment, target = self.ObjectItem, multiplicity = 1, rdSeq =
step2ReadSeq}

let constructionSequence = Sequence{self.ObjectItemObjectTypeEstablishment, step1, step2}

```

self.established-object-type-id = self.ObjectTypeEstablishment.established-object-type-id and self.object-type-establishment-index = self.ObjectTypeEstablishment.object-type-establishment-index

Context ObjectItemObjectTypeEstablishment, inv ObjectItemObjectTypeEstablishment_ObjectTypeEstablishment:

Enclosing Transactional: Object_Item_Object_Type_Establishment

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier WatchPoint Type: Aggregation	ObjectItemObjectTypeEstablishment («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True; isWatchPoint = True

Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectTypeEstablishment («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Object_Type_Establishment («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: Tagged Values:

C.12.2 Object_Type

The Object_Type Transactional Artifact captures information about an individually identified class of objects that have military significance.

self.object-type-id = self.Person_Type.PersonType.person-type-id
Context ObjectType, inv ObjectType_Person_Type:

self.object-type-id = self.Organisation_Type.OrganisationType.organisation-type-id
Context ObjectType, inv ObjectType_Organisation_Type:

self.object-type-id = self.Materiel_Type.MaterielType.materiel-type-id
Context ObjectType, inv ObjectType_Materiel_Type:

self.object-type-id = self.FeatureType.feature-type-id
Context ObjectType, inv ObjectType_FeatureType:

self.object-type-id = self.Facility_Type.FacilityType.facility-type-id
Context ObjectType, inv ObjectType_Facility_Type:

self.feature-type-id = self.GeographicFeature_Type.GeographicFeatureType.geographic-feature-type-id
Context FeatureType, inv FeatureType_GeographicFeature_Type:

self.feature-type-id = self.ControlFeature_Type.ControlFeatureType.control-feature-type-id
Context FeatureType, inv FeatureType_ControlFeature_Type:

oclConstructionSequence
Context Object_Type

```

let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectType.obj_type_id, targetAttr = self.Person_Type.pers_type_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ObjectType, target = self.Person_Type, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectType.obj_type_id, targetAttr = self.Materiel_Type.mat_type_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ObjectType, target = self.Materiel_Type, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectType.obj_type_id, targetAttr = self.Facility_Type.fac_type_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ObjectType, target = self.Facility_Type, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.ObjectType.obj_type_id, targetAttr = self.Organisation_Type.org_type_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.ObjectType, target = self.Organisation_Type, multiplicity = 1, rdSeq = step4ReadSeq}

let step5ReadPlan1 = Tuple{sourceAttr = self.ObjectType.obj_type_id, targetAttr = self.FeatureType.feats_type_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.ObjectType, target = self.FeatureType, multiplicity = 1, rdSeq = step5ReadSeq}

let step6ReadPlan1 = Tuple{sourceAttr = self.FeatureType.feats_type_id, targetAttr =
self.ControlFeature_Type.ctrl_feats_type_id}
let step6ReadSeq = Sequence{ step6ReadPlan1}
let step6 = Tuple{source = self.FeatureType, target = self.ControlFeature_Type, multiplicity = 1, rdSeq = step6ReadSeq}

let step7ReadPlan1 = Tuple{sourceAttr = self.FeatureType.feats_type_id, targetAttr =
self.GeographicFeature_Type.geo_feats_type_id}
let step7ReadSeq = Sequence{ step7ReadPlan1}
let step7 = Tuple{source = self.FeatureType, target = self.GeographicFeature_Type, multiplicity = 1, rdSeq =
step7ReadSeq}

let constructionSequence = Sequence{self.ObjectType, step1, step2, step3, step4, step5, step6, step7}

```

Enclosing Transactional: Object_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Identifier Type: Aggregation	Object_Type («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	Person_Type («Transactional»)	Navigation Constraints: Object_Type_Discriminator_Person_Type: inv: self.Object_Type.object-type-category-code='PE' Tagged Values:

Name: Type: Aggregation	Materiel_Type («Transactional»)	Navigation Constraints: ObjectType_Discriminator_Materiel_Type}: inv: self.ObjectType.object-type-category-code='MA' Tagged Values:
Name: Type: Aggregation	Organisation_Type («Transactional»)	Navigation Constraints: ObjectType_Discriminator_Organisation_Type}: inv: self.ObjectType.object-type-category-code='OR' Tagged Values:
Name: Type: Aggregation	GeographicFeature_Type («Transactional»)	Navigation Constraints: FeatureType_Discriminator_GeographicFeature_Type}: inv: self.FeatureType.feature-type-category-code='GF' Tagged Values:
Name: Type: Aggregation	Facility_Type («Transactional»)	Navigation Constraints: ObjectType_Discriminator_Facility_Type}: inv:self.ObjectType.object-type-category-code='FA' Tagged Values:
Name: Type: Aggregation	FeatureType («Wrapper»)	Navigation Constraints: ObjectType_Discriminator_FeatureType}: inv: self.ObjectType.object-type-category-code='FE' Tagged Values:
Name: Type: Aggregation	ControlFeature_Type («Transactional»)	Navigation Constraints: FeatureType_Discriminator_ControlFeature_Type}: inv: self.FeatureType.feature-type-category-code='CF' Tagged Values:

C.12.3 Object_Type_Affiliation

The Object_Type_Affiliation Transactional Artifact captures information about the allegiances or affiliations to which an object-type may be assigned. Four classes of affiliations (geopolitical, religion, ethnic group, and functional group) provide a rationally organized set of values to enable the capture of multiple affiliations.

self.object-type-id = self.Object_Type.ObjectType.object-type-id
Context ObjectTypeAffiliation, inv ObjectTypeAffiliation_Object_Type:

self.affiliation-id = self.AffiliationReligion.affiliation-id
Context Affiliation, inv Affiliation_AffiliationReligion:

self.affiliation-id = self.AffiliationGeopolitical.affiliation-id

Context Affiliation, inv Affiliation_AffiliationGeopolitical:

self.affiliation-id = self.AffiliationFunctionalGroup.affiliation-id

Context Affiliation, inv Affiliation_AffiliationFunctionalGroup:

self.affiliation-id = self.AffiliationEthnicGroup.affiliation-id

Context Affiliation, inv Affiliation_AffiliationEthnicGroup:

self.affiliation-id = self.Affiliation.affiliation-id

Context ObjectTypeAffiliation, inv ObjectTypeAffiliation_Affiliation:

oclConstructionSequence

Context Object_Type_Affiliation

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectTypeAffiliation.obj_type_id, targetAttr = self.Object_Type.obj_type_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ObjectTypeAffiliation, target = self.Object_Type, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectTypeAffiliation.affl_id, targetAttr = self.Affiliation.affl_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ObjectTypeAffiliation, target = self.Affiliation, multiplicity = 0..1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.Affiliation.affl_id, targetAttr = self.AffiliationReligion.affl_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.Affiliation, target = self.AffiliationReligion, multiplicity = 1, rdSeq = step3ReadSeq}
```

```
let step4ReadPlan1 = Tuple{sourceAttr = self.Affiliation.affl_id, targetAttr = self.AffiliationGeopolitical.affl_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.Affiliation, target = self.AffiliationGeopolitical, multiplicity = 1, rdSeq = step4ReadSeq}
```

```
let step5ReadPlan1 = Tuple{sourceAttr = self.Affiliation.affl_id, targetAttr = self.AffiliationFunctionalGroup.affl_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.Affiliation, target = self.AffiliationFunctionalGroup, multiplicity = 1, rdSeq = step5ReadSeq}
```

```
let step6ReadPlan1 = Tuple{sourceAttr = self.Affiliation.affl_id, targetAttr = self.AffiliationEthnicGroup.affl_id}
let step6ReadSeq = Sequence{ step6ReadPlan1}
let step6 = Tuple{source = self.Affiliation, target = self.AffiliationEthnicGroup, multiplicity = 1, rdSeq = step6ReadSeq}
```

```
let constructionSequence = Sequence{self.ObjectTypeAffiliation, step1, step2, step3, step4, step5, step6}
```

Enclosing Transactional: Object_Type_Affiliation

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	AffiliationFunctionalGroup («Wrapper»)	Navigation Constraints: Affiliation_Discriminator_AffiliationFunctionalGroup}: inv: self.Affiliation.affiliation-category-code='AFLFNC' Tagged Values:
Name: Type: Aggregation	AffiliationGeopolitical («Wrapper»)	Navigation Constraints: Affiliation_Discriminator_AffiliationGeopolitical}: inv: self.Affiliation.affiliation-category-code='AFLGEO' Tagged Values:
Name: Type: Aggregation	AffiliationEthnicGroup («Wrapper»)	Navigation Constraints: Affiliation_Discriminator_AffiliationEthnicGroup}: inv: self.Affiliation.affiliation-category-code='AFLETH' Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ObjectTypeAffiliation («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True
Name: Type: Aggregation	AffiliationReligion («Wrapper»)	Navigation Constraints: Affiliation_Discriminator_AffiliationReligion}: inv: self.Affiliation.affiliation-category-code='AFLREL' Tagged Values:
Name: Type: Aggregation	Affiliation («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Object_Type («Transactional»)	Navigation Constraints: Tagged Values:

C.12.4 Object_Type_Capability_Norm

The Object_Type_Capability_Norm Transactional Artifact captures information about the standard value of a specific capability of a specific object-type. This transactional encloses the Capability_Composite Transactional Artifact in which the normal capabilities of the object-types are kept.

oclConstructionSequence

Context Object_Type_Capability_Norm

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectTypeCapabilityNorm.capab_id, targetAttr = self.Capability_Composite.capab_id}
```

```
let step1ReadSeq = Sequence{ step1ReadPlan1}
```

```
let step1 = Tuple{source = self.ObjectTypeCapabilityNorm, target = self.Capability_Composite, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectTypeCapabilityNorm.obj_type_id, targetAttr = self.ObjectType.obj_type_id}
```

```
let step2ReadSeq = Sequence{ step2ReadPlan1}
```

```
let step2 = Tuple{source = self.ObjectTypeCapabilityNorm, target = self.ObjectType, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let constructionSequence = Sequence{self.ObjectTypeCapabilityNorm, step1, step2}
```

self.capability-id = self.Capability_Composite.Capability.capability-id

Context ObjectTypeCapabilityNorm, inv ObjectTypeCapabilityNorm_Capability_Composite:

self.object-type-id = self.ObjectType.object-type-id

Context ObjectTypeCapabilityNorm, inv ObjectTypeCapabilityNorm_ObjectType:

Enclosing Transactional: Object_Type_Capability_Norm

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier WatchPoint Type: Aggregation	ObjectTypeCapabilityNorm («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True isWatchPoint = True
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Capability_Composite («Transactional»)	Navigation Constraints: Tagged Values:

C.12.5 Object_Type_Establishment

The Object_Type_Establishment Transactional Artifact captures the instances of authorisation or other form of specification which associates with the established object type under specified conditions.

Object_Type_Establishment is a support transactional of Transactional Artifacts Object_Item_Object_Type_Establishment and Object_Type_Establishment_Detail.

Enclosing Transactional: Object_Type_Establishment

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	ObjectTypeEstablishment («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True

C.12.6 Object_Type_Establishment_Detail

The Object_Type_Establishment_Detail Transactional Artifact captures information about the number of a specific object-type that is authorized in a specific composition or object-type-establishment. It encloses the Transactional Artifact Object_Type_Establishment.

self.object-type-establishment-object-type-detail-object-type-id = self.ObjectType.object-type-id
 Context ObjectTypeEstablishmentObjectTypeDetail, inv ObjectTypeEstablishmentObjectTypeDetail_ObjectType:

self.established-object-type-id = self.ObjectTypeEstablishment.established-object-type-id and self.object-type-establishment-index = self.ObjectTypeEstablishment.object-type-establishment-index
 Context ObjectTypeEstablishmentObjectTypeDetail, inv
 ObjectTypeEstablishmentObjectTypeDetail_ObjectTypeEstablishment:

self.established-object-type-id = self.ObjectType.object-type-id
 Context ObjectTypeEstablishment, inv ObjectTypeEstablishment_ObjectType:

oclConstructionSequence
 Context Object_Type_Establishment_Detail

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectTypeEstablishmentObjectTypeDetail.estabd_obj_type_id, targetAttr = self.ObjectTypeEstablishment.estabd_obj_type_id}
let step1ReadPlan2 = Tuple{sourceAttr = self.ObjectTypeEstablishmentObjectTypeDetail.obj_type_estab_ix, targetAttr =
```

```

self.ObjectTypeEstablishment.obj_type_estab_ix}
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2}
let step1 = Tuple{source = self.ObjectTypeEstablishmentObjectTypeDetail, target = self.ObjectTypeEstablishment,
multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectTypeEstablishment.estabd_obj_type_id, targetAttr =
self.ObjectType.obj_type_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ObjectTypeEstablishment, target = self.ObjectType, multiplicity = 2, rdSeq =
step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectTypeEstablishmentObjectTypeDetail.det_obj_type_id, targetAttr =
self.ObjectTypeEstablishment.estabd_obj_type_id}
let step3ReadPlan2 = Tuple{sourceAttr = self.ObjectTypeEstablishmentObjectTypeDetail.det_obj_type_estab_ix,
targetAttr = self.ObjectTypeEstablishment.obj_type_estab_ix}
let step3ReadSeq = Sequence{ step3ReadPlan1, step3ReadPlan2}
let step3 = Tuple{source = self.ObjectTypeEstablishmentObjectTypeDetail, target = self.ObjectTypeEstablishment,
multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.ObjectTypeEstablishmentObjectTypeDetail.det_obj_type_id, targetAttr =
self.ObjectType.obj_type_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.ObjectTypeEstablishmentObjectTypeDetail, target = self.ObjectType, multiplicity = 2, rdSeq
= step4ReadSeq}

let constructionSequence = Sequence{self.ObjectTypeEstablishmentObjectTypeDetail, step1, step2, step3, step4}

```

Enclosing Transactional: Object_Type_Establishment_Detail

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier WatchPoint Type: Aggregation	ObjectTypeEstablishmentObjectTypeDetail («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Object_Type_Establishment («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectTypeEstablishment («Wrapper»)	Navigation Constraints: Tagged Values:

Name: Type: Aggregation	ObjectItemObjectTypeEstablishment («Wrapper»)	Navigation Constraints: Tagged Values:
--	--	---

C.12.7 Object_Type_Reference_Assoc

The Object_Type_Reference_Association Transactional Artifact captures information about the nature of the relationship between a specific object-type and a specific reference. This transactional encloses the Absolute_Reporting_Data Transactional Artifact in which information about the association status report is captured.

self.security-classification-id = self.SecurityClassification.security-classification-id

Context Reference, inv Reference_SecurityClassification:

self.reference-id = self.Reference.reference-id

Context ObjectTypeReferenceAssociation, inv ObjectTypeReferenceAssociation_Reference:

self.object-type-id = self.ObjectType.object-type-id

Context ObjectTypeReferenceAssociation, inv ObjectTypeReferenceAssociation_ObjectType:

oclConstructionSequence

Context Object_Type_Reference_Assoc

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectTypeReferenceAssociation.ref_id, targetAttr = self.Reference.ref_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ObjectTypeReferenceAssociation, target = self.Reference, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.Reference.security_clsfc_id, targetAttr = self.SecurityClassification.security_clsfc_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.Reference, target = self.SecurityClassification, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectTypeReferenceAssociation.obj_type_id, targetAttr = self.ObjectType.obj_type_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ObjectTypeReferenceAssociation, target = self.ObjectType, multiplicity = 1, rdSeq = step3ReadSeq}
```

```
let constructionSequence = Sequence{self.ObjectTypeReferenceAssociation, step1, step2, step3}
```

Enclosing Transactional: Object_Type_Reference_Assoc

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	SecurityClassification («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ObjectTypeReferenceAssociation («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True isWatchPoint = True
Name: Type: Aggregation	Reference («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: Tagged Values:

C.13 Organisation

C.13.1 Executive_Military_Organisation_Type

The Executive_Military_Organisation_Type Transactional Artifact captures information about a military-organisation-type whose function is to manage and direct the military establishment.

self.military-organisation-type-id = self.GovernmentOrganisationType.government-organisation-type-id
Context MilitaryOrganisationType, inv MilitaryOrganisationType_GovernmentOrganisationType:

self.organisation-type-id = self.ObjectType.object-type-id
Context OrganisationType, inv OrganisationType_ObjectType:

self.government-organisation-type-id = self.OrganisationType.organisation-type-id
Context GovernmentOrganisationType, inv GovernmentOrganisationType_OrganisationType:

self.executive-military-organisation-type-id = self.MilitaryOrganisationType.military-organisation-type-id
Context ExecutiveMilitaryOrganisationType, inv ExecutiveMilitaryOrganisationType_MilitaryOrganisationType:

oclConstructionSequence
Context Executive_Military_Organisation_Type

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ExecutiveMilitaryOrganisationType.exctv_mil_org_type_id, targetAttr = self.MilitaryOrganisationType.mil_org_type_id}
```

```

let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ExecutiveMilitaryOrganisationType, target = self.MilitaryOrganisationType, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.MilitaryOrganisationType.mil_org_type_id, targetAttr = self.GovernmentOrganisationType.govt_org_type_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.MilitaryOrganisationType, target = self.GovernmentOrganisationType, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.GovernmentOrganisationType.govt_org_type_id, targetAttr = self.OrganisationType.org_type_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.GovernmentOrganisationType, target = self.OrganisationType, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.OrganisationType.org_type_id, targetAttr = self.ObjectType.obj_type_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.OrganisationType, target = self.ObjectType, multiplicity = 1, rdSeq = step4ReadSeq}

let constructionSequence = Sequence{self.ExecutiveMilitaryOrganisationType, step1, step2, step3, step4}

```

Enclosing Transactional: Executive_Military_Organisation_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: OrganisationType_Enforced_ObjectType): inv: self.ObjectType.object-type-category-code='OR' Tagged Values:
Name: Type: Aggregation	MilitaryOrganisationType («Wrapper»)	Navigation Constraints: ExecutiveMilitaryOrganisationType_Enforced_MilitaryOrganisationType): inv: self.MilitaryOrganisationType.military-organisation-type-category-code='EXCMIL' Tagged Values:

Name: Type: Aggregation	GovernmentOrganisationType («Wrapper»)	Navigation Constraints: MilitaryOrganisationType_Enforced_GovernmentOrganisationType}; inv: self.GovernmentOrganisationType.government-organisation-type-category-code='MILORG' Tagged Values:
Name: Type: Aggregation	OrganisationType («Wrapper»)	Navigation Constraints: GovernmentOrganisationType_Enforced_OrganisationType}; inv: self.OrganisationType.organisation-type-category-code='GVTORG' Tagged Values:
Name: Identifier Type: Aggregation	ExecutiveMilitaryOrganisationType («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True

C.13.2 Government_Organisation_Type

The Government Organisation Type Transactional Artifact captures information about type of organization that controls and administers public policy under either a national or international mandate. It has one Subtype, Military Organisation Type.

self.government-organisation-type-id = self.Military_Organisation_Type.MilitaryOrganisationType.military-organisation-type-id

Context GovernmentOrganisationType, inv GovernmentOrganisationType_Military_Organisation_Type:

self.government-organisation-type-id = self.OrganisationType.organisation-type-id

Context GovernmentOrganisationType, inv GovernmentOrganisationType_OrganisationType:

oclConstructionSequence

Context Government_Organisation_Type

```

let step1ReadPlan1 = Tuple{sourceAttr = self.GovernmentOrganisationType.govt_org_type_id, targetAttr =
self.Military_Organisation_Type.mil_org_type_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.GovernmentOrganisationType, target = self.Military_Organisation_Type, multiplicity = 1,
rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.GovernmentOrganisationType.govt_org_type_id, targetAttr =
self.OrganisationType.org_type_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.GovernmentOrganisationType, target = self.OrganisationType, multiplicity = 1, rdSeq =
step2ReadSeq}

```

```

let step3ReadPlan1 = Tuple{sourceAttr = self.OrganisationType.org_type_id, targetAttr = self.ObjectType.obj_type_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.OrganisationType, target = self.ObjectType, multiplicity = 1, rdSeq = step3ReadSeq}

let constructionSequence = Sequence{self.GovernmentOrganisationType, step1, step2, step3}

```

self.organisation-type-id = self.ObjectType.object-type-id
Context OrganisationType, inv OrganisationType_ObjectType:

Enclosing Transactional: Government_Organisation_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Type: Aggregation	Organisation_Type («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	OrganisationType («Wrapper»)	Navigation Constraints: GovernmentOrganisationType_Enforced_OrganisationType}: inv:self.OrganisationType.organisation-type-category-code='GVTORG' Tagged Values:
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: OrganisationType_Enforced_ObjectType}: inv:self.ObjectType.object-type-category-code='OR' Tagged Values:
Name: Type: Aggregation	Military_Organisation_Type («Transactional»)	Navigation Constraints: GovernmentOrganisationType_Discriminator_Military_Organisation_Type}: inv: self.GovernmentOrganisationType.government-organisation-type-category-code='MILORG' Tagged Values:
Name: Identifier Type: Aggregation	GovernmentOrganisationType («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True

C.13.3 Military_Organisation_Type

The Military_Organisation_Type Transactional Artifact captures information about a government-organisation-type that is officially sanctioned and is trained and equipped to exert force.

self.organisation-type-id = self.ObjectType.object-type-id

Context OrganisationType, inv OrganisationType_ObjectType:

self.military-organisation-type-id = self.Unit_Type.UnitType.unit-type-id

Context MilitaryOrganisationType, inv MilitaryOrganisationType_Unit_Type:

self.military-organisation-type-id = self.Task_Formation_Type.TaskFormationType.task-formation-type-id

Context MilitaryOrganisationType, inv MilitaryOrganisationType_Task_Formation_Type:

self.military-organisation-type-id = self.Military_Post_Type.MilitaryPostType.military-post-type-id

Context MilitaryOrganisationType, inv MilitaryOrganisationType_Military_Post_Type:

self.military-organisation-type-id = self.GovernmentOrganisationType.government-organisation-type-id

Context MilitaryOrganisationType, inv MilitaryOrganisationType_GovernmentOrganisationType:

self.military-organisation-type-id =

self.Executive_Military_Organisation_Type.ExecutiveMilitaryOrganisationType.executive-military-organisation-type-id

Context MilitaryOrganisationType, inv MilitaryOrganisationType_Executive_Military_Organisation_Type:

self.government-organisation-type-id = self.OrganisationType.organisation-type-id

Context GovernmentOrganisationType, inv GovernmentOrganisationType_OrganisationType:

oclConstructionSequence

Context Military_Organisation_Type

```
let step1ReadPlan1 = Tuple{sourceAttr = self.MilitaryOrganisationType.mil_org_type_id, targetAttr = self.Unit_Type.unit_type_id}
```

```
let step1ReadSeq = Sequence{ step1ReadPlan1}
```

```
let step1 = Tuple{source = self.MilitaryOrganisationType, target = self.Unit_Type, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.MilitaryOrganisationType.mil_org_type_id, targetAttr = self.Military_Post_Type.mil_post_type_id}
```

```
let step2ReadSeq = Sequence{ step2ReadPlan1}
```

```
let step2 = Tuple{source = self.MilitaryOrganisationType, target = self.Military_Post_Type, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.MilitaryOrganisationType.mil_org_type_id, targetAttr = self.Executive_Military_Organisation_Type.exctv_mil_org_type_id}
```

```
let step3ReadSeq = Sequence{ step3ReadPlan1}
```

```
let step3 = Tuple{source = self.MilitaryOrganisationType, target = self.Executive_Military_Organisation_Type, multiplicity = 1, rdSeq = step3ReadSeq}
```

```
let step4ReadPlan1 = Tuple{sourceAttr = self.MilitaryOrganisationType.mil_org_type_id, targetAttr =
```

```

self.Task_Formation_Type.task_frmtn_type_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.MilitaryOrganisationType, target = self.Task_Formation_Type, multiplicity = 1, rdSeq =
step4ReadSeq}

let step5ReadPlan1 = Tuple{sourceAttr = self.MilitaryOrganisationType.mil_org_type_id, targetAttr =
self.GovernmentOrganisationType.govt_org_type_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.MilitaryOrganisationType, target = self.GovernmentOrganisationType, multiplicity = 1,
rdSeq = step5ReadSeq}

let step6ReadPlan1 = Tuple{sourceAttr = self.GovernmentOrganisationType.govt_org_type_id, targetAttr =
self.OrganisationType.org_type_id}
let step6ReadSeq = Sequence{ step6ReadPlan1}
let step6 = Tuple{source = self.GovernmentOrganisationType, target = self.OrganisationType, multiplicity = 1, rdSeq =
step6ReadSeq}

let step7ReadPlan1 = Tuple{sourceAttr = self.OrganisationType.org_type_id, targetAttr = self.ObjectType.obj_type_id}
let step7ReadSeq = Sequence{ step7ReadPlan1}
let step7 = Tuple{source = self.OrganisationType, target = self.ObjectType, multiplicity = 1, rdSeq = step7ReadSeq}

let constructionSequence = Sequence{self.MilitaryOrganisationType, step1, step2, step3, step4, step5, step6, step7}

```

Enclosing Transactional: Military_Organisation_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	EquipmentType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: OrganisationType_Enforced_ObjectType: inv: self.ObjectType.object-type-category-code='OR' Tagged Values:
Name: Type: Aggregation	Military_Post_Type («Transactional»)	Navigation Constraints: MilitaryOrganisationType_Discriminator_Military_Post_Type: inv: self.MilitaryOrganisationType.military-organisation-type-category-code='MILPST' Tagged Values:

Name: Type: Aggregation	Executive_Military_Organisation_Type («Transactional»)	Navigation Constraints: MilitaryOrganisationType_Discriminator_Executive_Military_Organisation_Type}; inv: self.MilitaryOrganisationType.military-organisation-type-category-code='EXCMIL' Tagged Values:
Name: Type: Aggregation	OrganisationType («Wrapper»)	Navigation Constraints: GovernmentOrganisationType_Enforced_OrganisationType}; inv: self.OrganisationType.organisation-type-category-code='GVTORG' Tagged Values:
Name: Identifier Type: Aggregation	MilitaryOrganisationType («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	MaterielType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	GovernmentOrganisationType («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	UnitType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Task_Formation_Type («Transactional»)	Navigation Constraints: MilitaryOrganisationType_Discriminator_Task_Formation_Type}; inv: self.MilitaryOrganisationType.military-organisation-type-category-code='TASK' Tagged Values:
Name: Type: Aggregation	Unit_Type («Transactional»)	Navigation Constraints: MilitaryOrganisationType_Discriminator_Unit_Type}; inv: self.MilitaryOrganisationType.military-organisation-type-category-code='UNIT' Tagged Values:

Name: Type: Aggregation	GovernmentOrganisationType («Wrapper»)	Navigation Constraints: MilitaryOrganisationType_Enforced_GovernmentOrganisationType}: inv: self.GovernmentOrganisationType.government-organisation-type-category-code='MILORG' Tagged Values:
Name: Type: Aggregation	Government_Organisation_Type («Transactional»)	Navigation Constraints: Tagged Values:

C.13.4 Military_Post_Type

The Military_Post_Type Transactional Artifact captures information about a military-organisation-type with a set of duties that can be filled by one person.

self.government-organisation-type-id = self.OrganisationType.organisation-type-id

Context GovernmentOrganisationType, inv GovernmentOrganisationType_OrganisationType:

self.military-organisation-type-id = self.GovernmentOrganisationType.government-organisation-type-id

Context MilitaryOrganisationType, inv MilitaryOrganisationType_GovernmentOrganisationType:

oclConstructionSequence

Context Military_Post_Type

```
let step1ReadPlan1 = Tuple{sourceAttr = self.MilitaryPostType.mil_post_type_id, targetAttr =
self.MilitaryOrganisationType.mil_org_type_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.MilitaryPostType, target = self.MilitaryOrganisationType, multiplicity = 1, rdSeq =
step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.MilitaryOrganisationType.mil_org_type_id, targetAttr =
self.GovernmentOrganisationType.govt_org_type_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.MilitaryOrganisationType, target = self.GovernmentOrganisationType, multiplicity = 1,
rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.GovernmentOrganisationType.govt_org_type_id, targetAttr =
self.OrganisationType.org_type_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.GovernmentOrganisationType, target = self.OrganisationType, multiplicity = 1, rdSeq =
step3ReadSeq}
```

```
let step4ReadPlan1 = Tuple{sourceAttr = self.OrganisationType.org_type_id, targetAttr = self.ObjectType.obj_type_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.OrganisationType, target = self.ObjectType, multiplicity = 1, rdSeq = step4ReadSeq}
```

let constructionSequence = Sequence{self.MilitaryPostType, step1, step2, step3, step4}

self.organisation-type-id = self.ObjectType.object-type-id
Context OrganisationType, inv OrganisationType_ObjectType:

self.military-post-type-id = self.MilitaryOrganisationType.military-organisation-type-id
Context MilitaryPostType, inv MilitaryPostType_MilitaryOrganisationType:

Enclosing Transaction: Military_Post_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Identifier Type: Aggregation	MilitaryPostType («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	MilitaryOrganisationType («Wrapper»)	Navigation Constraints: MilitaryPostType_Enforced_MilitaryOrganisationType}: inv: self.MilitaryOrganisationType.military-organisation-type-category-code='MILPST' Tagged Values:
Name: Type: Aggregation	GovernmentOrganisationType («Wrapper»)	Navigation Constraints: MilitaryOrganisationType_Enforced_GovernmentOrganisationType}: inv: self.GovernmentOrganisationType.government-organisation-type-category-code='MILORG' Tagged Values:
Name: Type: Aggregation	OrganisationType («Wrapper»)	Navigation Constraints: GovernmentOrganisationType_Enforced_OrganisationType}: inv: self.OrganisationType.organisation-type-category-code='GVTORG' Tagged Values:
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: OrganisationType_Enforced_ObjectType}: inv: self.ObjectType.object-type-category-code='OR' Tagged Values:

C.13.5 Organisation_ActionTask_ROE

The Organisation_ActionTask_ROE Transactional Artifact captures information about the status relationship between a specific organization and a specific Action-Task-Rule-of-Engagement with respect to a request for cancellation authorization, etc. This transactional encloses the ActionTask_ROE Transactional Artifact.

self.organisation-action-task-rule-of-engagement-status-organisation-id = self.Organisation.organisation-id

Context OrganisationActionTaskRuleOfEngagementStatus, inv
 OrganisationActionTaskRuleOfEngagementStatus_Organisation:

self.action-task-id = self.ActionTask_ROE.ActionTaskRuleOfEngagement.action-task-id and self.rule-of-engagement-id = self.ActionTask_ROE.ActionTaskRuleOfEngagement.rule-of-engagement-id

Context OrganisationActionTaskRuleOfEngagementStatus, inv
 OrganisationActionTaskRuleOfEngagementStatus_ActionTask_ROE:

oclConstructionSequence

Context Organisation_ActionTask_ROE

```
let step1ReadPlan1 = Tuple{sourceAttr = self.OrganisationActionTaskRuleOfEngagementStatus.act_task_id, targetAttr = self.ActionTask_ROE.act_task_id}
let step1ReadPlan2 = Tuple{sourceAttr = self.OrganisationActionTaskRuleOfEngagementStatus.roe_id, targetAttr = self.ActionTask_ROE.roe_id}
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2}
let step1 = Tuple{source = self.OrganisationActionTaskRuleOfEngagementStatus, target = self.ActionTask_ROE, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.OrganisationActionTaskRuleOfEngagementStatus.org_act_task_roe_stat_org_id, targetAttr = self.Organisation.org_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.OrganisationActionTaskRuleOfEngagementStatus, target = self.Organisation, multiplicity = 1, rdSeq = step2ReadSeq}

let constructionSequence = Sequence{self.OrganisationActionTaskRuleOfEngagementStatus, step1, step2}
```

Enclosing Transactional: Organisation_ActionTask_ROE

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier WatchPoint Type: Aggregation	OrganisationActionTaskRuleOfEngagementStatus («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True isWatchPoint = True

Name: Type: Aggregation	Organisation («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ActionTask_ROE («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Organisation_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.13.6 Organisation_Action_Assoc

The Organisation_Action_Assoc Transactional Artifact captures information about the relationship indicating the role (such as initiates, plans, oversees the execution of, etc.) of a specific organization with respect to a specific action.

self.organisation-id = self.Organisation.organisation-id

Context OrganisationActionAssociation, inv OrganisationActionAssociation_Organisation:

oclConstructionSequence

Context Organisation_Action_Assoc

```
let step1ReadPlan1 = Tuple{sourceAttr = self.OrganisationActionAssociation.act_id, targetAttr = self.Action.act_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.OrganisationActionAssociation, target = self.Action, multiplicity = 1, rdSeq =
step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.OrganisationActionAssociation.org_id, targetAttr = self.Organisation.org_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.OrganisationActionAssociation, target = self.Organisation, multiplicity = 1, rdSeq =
step2ReadSeq}
```

```
let constructionSequence = Sequence{self.OrganisationActionAssociation, step1, step2}
```

self.action-id = self.Action.action-id

Context OrganisationActionAssociation, inv OrganisationActionAssociation_Action:

Enclosing Transactional: Organisation_Action_Assoc

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Action («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	OrganisationActionAssociation («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True isWatchPoint = True
Name: Type: Aggregation	Organisation («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Organisation_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.13.7 Organisation_Item

The Organisation_Item Transactional Artifact captures information about an individually identified instance of an Organisation, to which military or civilian significance is attached. Organisations subtype into Units and Convoys.

self.organisation-id = self.Unit.unit-id

Context Organisation, inv Organisation_Unit:

self.organisation-id = self.ObjectItem.object-item-id

Context Organisation, inv Organisation_ObjectItem:

self.organisation-id = self.Convoy.convoy-id

Context Organisation, inv Organisation_Convoy:

self.object-item-id = self.ObjectItemAlias.object-item-id

Context ObjectItem, inv ObjectItem_ObjectItemAlias:

oclConstructionSequence

Context Organisation_Item

```
let step1ReadPlan1 = Tuple{sourceAttr = self.Organisation.org_id, targetAttr = self.Convoy.convoy_id}
```

```
let step1ReadSeq = Sequence{ step1ReadPlan1}
```

```
let step1 = Tuple{source = self.Organisation, target = self.Convoy, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.Organisation.org_id, targetAttr = self.ObjectItem.obj_item_id}
```

```
let step2ReadSeq = Sequence{ step2ReadPlan1}
```

```
let step2 = Tuple{source = self.Organisation, target = self.ObjectItem, multiplicity = 1, rdSeq = step2ReadSeq}
```

```

let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectItem.obj_item_id, targetAttr = self.ObjectItemAlias.obj_item_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ObjectItem, target = self.ObjectItemAlias, multiplicity = 0..*, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.Organisation.org_id, targetAttr = self.Unit.unit_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.Organisation, target = self.Unit, multiplicity = 1, rdSeq = step4ReadSeq}

let constructionSequence = Sequence{self.Organisation, step1, step2, step3, step4}

```

Enclosing Transaction: Organisation_Item

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Identifier Type: Aggregation	Organisation («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	ObjectItemAlias («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Organisation_Enforced_ObjectItem}: inv: self.ObjectItem.object-item-category-code='OR' Tagged Values:
Name: Type: Aggregation	Unit («Wrapper»)	Navigation Constraints: Organisation_Discriminator_Unit}: inv: self.Organisation.organisation-category-code='UN' Tagged Values:
Name: Type: Aggregation	Convoy («Wrapper»)	Navigation Constraints: Organisation_Discriminator_Convoy}: inv: self.Organisation.organisation-category-code='CO' Tagged Values:

C.13.8 Organisation_Item_Type

The Organisation_Item_Type Transactional Artifact captures information about the perceived classification of a specific organisation-item as a specific organisation -type. This transactional encloses the Absolute_Reporting_Data Transactional Artifact in which information about the type classification is captured.

self.object-item-id = self.Organisation_Item.Organisation.organisation-id

Context ObjectItem, inv ObjectItem_Organisation_Item:

self.object-item-id = self.ObjectItem.object-item-id

Context ObjectItemType, inv ObjectItemType_ObjectItem:

oclConstructionSequence

Context Organisation_Item_Type

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectItemType.rptd_id, targetAttr = self.Absolute_Reporting_Data.rptd_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ObjectItemType, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq =
step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectItemType.obj_type_id, targetAttr = self.ObjectType.obj_type_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ObjectItemType, target = self.ObjectType, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectType.obj_type_id, targetAttr = self.Organisation_Type.org_type_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ObjectType, target = self.Organisation_Type, multiplicity = 1, rdSeq = step3ReadSeq}
```

```
let step4ReadPlan1 = Tuple{sourceAttr = self.ObjectItemType.obj_item_id, targetAttr = self.ObjectItem.obj_item_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.ObjectItemType, target = self.ObjectItem, multiplicity = 1, rdSeq = step4ReadSeq}
```

```
let step5ReadPlan1 = Tuple{sourceAttr = self.ObjectItem.obj_item_id, targetAttr = self.Organisation_Item.org_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.ObjectItem, target = self.Organisation_Item, multiplicity = 1, rdSeq = step5ReadSeq}
```

```
let constructionSequence = Sequence{self.ObjectItemType, step1, step2, step3, step4, step5}
```

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id

Context ObjectItemType, inv ObjectItemType_Absolute_Reporting_Data:

self.object-type-id = self.ObjectType.object-type-id

Context ObjectItemType, inv ObjectItemType_ObjectType:

self.object-type-id = self.Organisation_Type.OrganisationType.organisation-type-id

Context ObjectType, inv ObjectType_Organisation_Type:

Enclosing Transactional: Organisation_Item_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Organisation_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Organisation_Item_Enforced_ObjectItem}; inv: self.ObjectItem.object-item-category-code='OR' Tagged Values:
Name: Type: Aggregation	Organisation_Type («Transactional»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ObjectItemType («Wrapper»)	Navigation Constraints: Tagged Values: isWatchPoint = TrueisIdentifier = True
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: Organisation_Type_Enforced_ObjectType}; inv: self.ObjectType.object-type-category-code='OR' Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:

C.13.9 Organisation_Materiel_Type_Assoc

The Organisation_Material_Type_Assoc Transactional Artifact captures information about the relationship between a specific organisation and a specific material-type, which is normally established for local reporting requirements.

self.organisation-id = self.Organisation.organisation-id

Context OrganisationMaterielTypeAssociation, inv OrganisationMaterielTypeAssociation_Organisation:

self.organisation-id = self.ObjectItem.object-item-id
Context Organisation, inv Organisation_ObjectItem:

self.materiel-type-id = self.ObjectType.object-type-id
Context MaterielType, inv MaterielType_ObjectType:

self.materiel-type-id = self.MaterielType.materiel-type-id
Context OrganisationMaterielTypeAssociation, inv OrganisationMaterielTypeAssociation_MaterielType:

oclConstructionSequence

Context Organisation_Materiel_Type_Assoc

```
let step1ReadPlan1 = Tuple{sourceAttr = self.OrganisationMaterielTypeAssociation.org_id, targetAttr = self.Organisation.org_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.OrganisationMaterielTypeAssociation, target = self.Organisation, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.Organisation.org_id, targetAttr = self.ObjectItem.obj_item_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.Organisation, target = self.ObjectItem, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.OrganisationMaterielTypeAssociation.mat_type_id, targetAttr = self.MaterielType.mat_type_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.OrganisationMaterielTypeAssociation, target = self.MaterielType, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.MaterielType.mat_type_id, targetAttr = self.ObjectType.obj_type_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.MaterielType, target = self.ObjectType, multiplicity = 1, rdSeq = step4ReadSeq}

let constructionSequence = Sequence{self.OrganisationMaterielTypeAssociation, step1, step2, step3, step4}
```

Enclosing Transactional: Organisation_Materiel_Type_Assoc

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Organisation_Enforced_ObjectItem}; inv: self.ObjectItem.object-item-category-code='OR' Tagged Values:

Name: Identifier WatchPoint Type: Aggregation	OrganisationMaterielTypeAssociation («Wrapper»)	Navigation Constraints: Tagged Values: isWatchPoint = TrueisIdentifier = True
Name: Type: Aggregation	Organisation («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: MaterielType_Enforced_ObjectType}; inv: self.ObjectType.object-type-category-code='MA' Tagged Values:
Name: Type: Aggregation	MaterielType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Materiel_Type («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Organisation_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.13.10 Organisation_Plan_Order_Assoc

The Organisation_Plan_Order_Assoc Transactional Artifact captures information about the association of a specific organization to a specific plan-order, specifying the role of the organization with respect to the plan-order. The types of roles include: is approving authority for, is responsible for the preparation of, is responsible for the distribution of, has execution oversight for, and, is the issuing headquarters for.

self.plan-order-id = self.PlanOrder.plan-order-id

Context OrganisationPlanOrderAssociation, inv OrganisationPlanOrderAssociation_PlanOrder:

self.organisation-id = self.Organisation.organisation-id

Context OrganisationPlanOrderAssociation, inv OrganisationPlanOrderAssociation_Organisation:

oclConstructionSequence

Context Organisation_Plan_Order_Assoc

```
let step1ReadPlan1 = Tuple{sourceAttr = self.OrganisationPlanOrderAssociation.pln_ordr_id, targetAttr = self.PlanOrder.pln_ordr_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.OrganisationPlanOrderAssociation, target = self.PlanOrder, multiplicity = 1, rdSeq = step1ReadSeq}
```

```

let step2ReadPlan1 = Tuple{sourceAttr = self.OrganisationPlanOrderAssociation.org_id, targetAttr =
self.Organisation.org_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.OrganisationPlanOrderAssociation, target = self.Organisation, multiplicity = 1, rdSeq =
step2ReadSeq}

let constructionSequence = Sequence{self.OrganisationPlanOrderAssociation, step1, step2}

```

Enclosing Transactional: Organisation_Plan_Order_Assoc

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Organisation («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	PlanOrder («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	OrganisationPlanOrderAssociation («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True
Name: Type: Aggregation	Plan_Order_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Organisation_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	OrganisationPlanOrderAssociation Status («Wrapper»)	Navigation Constraints: Tagged Values:

C.13.11 Organisation_Plan_Order_Assoc_Status

The Organisation_Plan_Order_Assoc Transactional Artifact captures information about the condition or state of a specific association of a specific organization to a specific plan-order. The status refers to the beginning or termination of the association. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the status report is captured.

self.plan-order-id = self.PlanOrder.plan-order-id

Context OrganisationPlanOrderAssociation, inv OrganisationPlanOrderAssociation_PlanOrder:

self.establishing-organisation-id = self.Organisation.organisation-id

Context OrganisationPlanOrderAssociationStatus, inv OrganisationPlanOrderAssociationStatus_Organisation:

oclConstructionSequence

Context Organisation_Plan_Order_Assoc_Status

```
let step1ReadPlan1 = Tuple{sourceAttr = self.OrganisationPlanOrderAssociationStatus.org_id, targetAttr =
self.OrganisationPlanOrderAssociation.org_id}
let step1ReadPlan2 = Tuple{sourceAttr = self.OrganisationPlanOrderAssociationStatus.pln_ordr_id, targetAttr =
self.OrganisationPlanOrderAssociation.pln_ordr_id}
let step1ReadPlan3 = Tuple{sourceAttr = self.OrganisationPlanOrderAssociationStatus.org_poa_ix, targetAttr =
self.OrganisationPlanOrderAssociation.org_poa_ix}
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2, step1ReadPlan3}
let step1 = Tuple{source = self.OrganisationPlanOrderAssociationStatus, target = self.OrganisationPlanOrderAssociation,
multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.OrganisationPlanOrderAssociation.pln_ordr_id, targetAttr =
self.PlanOrder.pln_ordr_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.OrganisationPlanOrderAssociation, target = self.PlanOrder, multiplicity = 1, rdSeq =
step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.OrganisationPlanOrderAssociationStatus.estblng_org_id, targetAttr =
self.Organisation.org_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.OrganisationPlanOrderAssociationStatus, target = self.Organisation, multiplicity = 0..1,
rdSeq = step3ReadSeq}

let constructionSequence = Sequence{self.OrganisationPlanOrderAssociationStatus, step1, step2, step3}
```

Enclosing Transactional: Organisation_Plan_Order_Assoc_Status

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Organisation («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	OrganisationPlanOrderAssociationStatus («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True
Name: Type: Aggregation	OrganisationPlanOrderAssociation («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Organisation_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Organisation_Plan_Order_Assoc («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	PlanOrder («Wrapper»)	Navigation Constraints: Tagged Values:

C.13.12 Organisation_Position

The Organisation_Position Transactional Artifact captures information about the association of an organisation to a location so that the geographic position of the organisation can be specified. This transactional encloses the Location_Composite Transactional Artifact to support the specification of the location in geometrical terms. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the location association is captured.

self.object-item-id = self.Organisation.organisation-id

Context ObjectItem, inv ObjectItem_Organisation:

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id

Context ObjectItemLocation, inv ObjectItemLocation_Absolute_Reporting_Data:

self.object-item-id = self.ObjectItem.object-item-id

Context ObjectItemLocation, inv ObjectItemLocation_ObjectItem:

self.location-id = self.Location_Composite.Location.location-id

Context ObjectItemLocation, inv ObjectItemLocation_Location_Composite:

oclConstructionSequence

Context Organisation_Position

```

let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectItemLocation.loc_id, targetAttr = self.Location_Composite.loc_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ObjectItemLocation, target = self.Location_Composite, multiplicity = 1, rdSeq =
step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectItemLocation.rptd_id, targetAttr =
self.Absolute_Reporting_Data.rptd_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ObjectItemLocation, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq =
step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectItemLocation.obj_item_id, targetAttr = self.ObjectItem.obj_item_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ObjectItemLocation, target = self.ObjectItem, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.ObjectItem.obj_item_id, targetAttr = self.Organisation_Item.org_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.ObjectItem, target = self.Organisation_Item, multiplicity = 1, rdSeq = step4ReadSeq}

let constructionSequence = Sequence{self.ObjectItemLocation, step1, step2, step3, step4}

```

Enclosing Transactional: Organisation_Position

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Location_Composite («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Organisation_Item_Enforced_ObjectItem: inv: self.ObjectItem.object-item-category-code='OR' Tagged Values:
Name: Type: Aggregation	Organisation_Item («Transactional»)	Navigation Constraints: Tagged Values:

Name: Type: Aggregation	Surface_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Point_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Location («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ObjectItemLocation («Wrapper»)	Navigation Constraints: Tagged Values: isWatchPoint = TrueisIdentifier = True
Name: Type: Aggregation	Line_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:

C.13.13 Organisation_Reference_Assoc

The Organisation_Reference_Assoc Transactional Artifact captures information about the nature of the relationship between a specific organisation and a specific reference, such as, is approval authority for or is planner of, etc.

self.security-classification-id = self.SecurityClassification.security-classification-id
Context Reference, inv Reference_SecurityClassification:

self.reference-id = self.Reference.reference-id
Context OrganisationReferenceAssociation, inv OrganisationReferenceAssociation_Reference:

self.organisation-id = self.Organisation.organisation-id
Context OrganisationReferenceAssociation, inv OrganisationReferenceAssociation_Organisation:

oclConstructionSequence

Context Organisation_Reference_Assoc

```
let step1ReadPlan1 = Tuple{sourceAttr = self.OrganisationReferenceAssociation.ref_id, targetAttr = self.Reference.ref_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.OrganisationReferenceAssociation, target = self.Reference, multiplicity = 1, rdSeq =
step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.Reference.security_clsfc_id, targetAttr =
```

```

self.SecurityClassification.security_clsfc_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.Reference, target = self.SecurityClassification, multiplicity = 0..1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.OrganisationReferenceAssociation.org_id, targetAttr =
self.Organisation.org_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.OrganisationReferenceAssociation, target = self.Organisation, multiplicity = 1, rdSeq =
step3ReadSeq}

let constructionSequence = Sequence{self.OrganisationReferenceAssociation, step1, step2, step3}

```

Enclosing Transactional: Organisation_Reference_Assoc

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier WatchPoint Type: Aggregation	OrganisationReferenceAssociation («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True is WatchPoint = True
Name: Type: Aggregation	Reference («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Organisation («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	SecurityClassification («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Organisation_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.13.14 Organisation_Status

The Organisation_Status Transactional Artifact captures information about the condition or status of a specific organisation. The status information captured pertains primarily to the operational status of the organization. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the status report is captured.

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id
 Context ObjectItemStatus, inv ObjectItemStatus_Absolute_Reporting_Data:

self.object-item-id = self.OrganisationStatus.organisation-status-id and self.object-item-status-index = self.OrganisationStatus.object-item-status-index
 Context ObjectItemStatus, inv ObjectItemStatus_OrganisationStatus:

self.object-item-id = self.ObjectItem.object-item-id
 Context ObjectItemStatus, inv ObjectItemStatus_ObjectItem:

oclConstructionSequence

Context Organisation_Status

```
let step1ReadPlan1 = Tuple{sourceAttr = self.OrganisationStatus.org_stat_id, targetAttr = self.ObjectItemStatus.obj_item_id}
let step1ReadPlan2 = Tuple{sourceAttr = self.OrganisationStatus.obj_item_stat_ix, targetAttr = self.ObjectItemStatus.obj_item_stat_ix}
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2}
let step1 = Tuple{source = self.OrganisationStatus, target = self.ObjectItemStatus, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectItemStatus.rptd_id, targetAttr = self.Absolute_Reporting_Data.rptd_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ObjectItemStatus, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectItemStatus.obj_item_id, targetAttr = self.ObjectItem.obj_item_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ObjectItemStatus, target = self.ObjectItem, multiplicity = 1, rdSeq = step3ReadSeq}

let constructionSequence = Sequence{self.OrganisationStatus, step1, step2, step3}
```

Enclosing Transactional: Organisation_Status

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: WatchPoint Type: Aggregation	ObjectItemStatus («Wrapper»)	Navigation Constraints: Tagged Values: isWatchPoint = True

Name: Identifier Type: Aggregation	OrganisationStatus («Wrapper»)	Navigation Constraints: ObjectItemStatus_Discriminator_OrganisationStatus): inv: self.ObjectItemStatus.object-item-status-category-code='OR' Tagged Values: isIdentifier = True
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Organisation_Item_Enforced_ObjectItem): inv: self.ObjectItem.object-item-category-code='OR' Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Organisation_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.13.15 Organisation_Structure

The Organisation_Structure Transactional Artifact captures information about the hierarchical configuration of a root organization, in which the configuration is specified by reference to a set of associations between instances of object-item. These instances are captured in an enclosed Transactional Artifact Organisation_Structure_Detail. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the association report is captured.

self.organisation-structure-root-organisation-id = self.Organisation.organisation-id

Context OrganisationStructure, inv OrganisationStructure_Organisation:

oclConstructionSequence

Context Organisation_Structure

```

let step1ReadPlan1 = Tuple{sourceAttr = self.OrganisationStructure.org_struct_root_org_id, targetAttr =
self.Organisation_Structure_Detail.org_struct_root_org_id}
let step1ReadPlan2 = Tuple{sourceAttr = self.OrganisationStructure.org_struct_ix, targetAttr =
self.Organisation_Structure_Detail.org_struct_ix}
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2}
let step1 = Tuple{source = self.OrganisationStructure, target = self.Organisation_Structure_Detail, multiplicity = 1..*, rdSeq
= step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.OrganisationStructure.rptd_id, targetAttr =
self.Absolute_Reporting_Data.rptd_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}

```

```

let step2 = Tuple{source = self.OrganisationStructure, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq =
step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.OrganisationStructure.org_struct_root_org_id, targetAttr =
self.Organisation.org_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.OrganisationStructure, target = self.Organisation, multiplicity = 1, rdSeq = step3ReadSeq}

let constructionSequence = Sequence{self.OrganisationStructure, step1, step2, step3}

```

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id
Context OrganisationStructure, inv OrganisationStructure_Absolute_Reporting_Data:

Enclosing Transactional: Organisation_Structure

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Object_Item_Assoc («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	OrganisationStructureDetail («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	OrganisationStructure («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True
Name: Type: Aggregation	Organisation_Structure_Detail («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Organisation («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Organisation_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.13.16 Organisation_Structure_Detail

The Organisation_Structure_Detail Transactional Artifact captures information about the specific object-item-associations that are elements of (and together define) the organization-structure.

oclConstructionSequence

Context Organisation_Structure_Detail

```
let constructionSequence = Sequence{self.OrganisationStructureDetail}
```

Enclosing Transactional: Organisation_Structure_Detail

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Identifier Type: Aggregation	OrganisationStructureDetail («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
---	--	--

C.13.17 Organisation_Type

The Organisation_Type Transactional Artifact captures information about a specific type of Organisation that is of military interest. An Organisation_Type represents an administrative or functional structure constituted to accomplish an aim, purpose or mission. An important class of the Organization-Type pertains to governmental organizations, which include military organizations. A Government_Organisation_Type, Transactional Artifact has been specified and is enclosed in this Organisation_Type Transactional Artifact.

oclConstructionSequence

Context Organisation_Type

```
let step1ReadPlan1 = Tuple{sourceAttr = self.OrganisationType.org_type_id, targetAttr = self.GroupOrganisationType.group_org_type_id}
```

```
let step1ReadSeq = Sequence{ step1ReadPlan1}
```

```
let step1 = Tuple{source = self.OrganisationType, target = self.GroupOrganisationType, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.OrganisationType.org_type_id, targetAttr = self.CivilianPostType.civ_post_type_id}
```

```
let step2ReadSeq = Sequence{ step2ReadPlan1}
```

```
let step2 = Tuple{source = self.OrganisationType, target = self.CivilianPostType, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.OrganisationType.org_type_id, targetAttr = self.PrivateSectorOrganisationType.prv_sctr_org_type_id}
```

```
let step3ReadSeq = Sequence{ step3ReadPlan1}
```

```

let step3 = Tuple{source = self.OrganisationType, target = self.PrivateSectorOrganisationType, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.OrganisationType.org_type_id, targetAttr = self.ObjectType.obj_type_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.OrganisationType, target = self.ObjectType, multiplicity = 1, rdSeq = step4ReadSeq}

let step5ReadPlan1 = Tuple{sourceAttr = self.OrganisationType.org_type_id, targetAttr = self.Government_Organisation_Type.govt_org_type_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.OrganisationType, target = self.Government_Organisation_Type, multiplicity = 0..1, rdSeq = step5ReadSeq}

let constructionSequence = Sequence{self.OrganisationType, step1, step2, step3, step4, step5}

```

self.organisation-type-id = self.PrivateSectorOrganisationType.private-sector-organisation-type-id
Context OrganisationType, inv OrganisationType_PrivateSectorOrganisationType:

self.organisation-type-id = self.ObjectType.object-type-id
Context OrganisationType, inv OrganisationType_ObjectType:

self.organisation-type-id = self.GroupOrganisationType.group-organisation-type-id
Context OrganisationType, inv OrganisationType_GroupOrganisationType:

self.organisation-type-id = self.Government_Organisation_Type.GovernmentOrganisationType.government-organisation-type-id
Context OrganisationType, inv OrganisationType_Government_Organisation_Type:

self.organisation-type-id = self.CivilianPostType.civilian-post-type-id
Context OrganisationType, inv OrganisationType_CivilianPostType:

Enclosing Transactional: Organisation_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: OrganisationType_Enforced_ObjectType}; inv: self.ObjectType.object-type-category-code='OR' Tagged Values:

Name: Type: Aggregation	CivilianPostType («Wrapper»)	Navigation Constraints: OrganisationType_Discriminator_CivilianPostType}: inv: self.OrganisationType.organisation-type-category-code='CIVPST' Tagged Values:
Name: Identifier Type: Aggregation	OrganisationType («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	GroupOrganisationType («Wrapper»)	Navigation Constraints: OrganisationType_Discriminator_GroupOrganisationType}: inv: self.OrganisationType.organisation-type-category-code='GRPORG' Tagged Values:
Name: Type: Aggregation	PrivateSectorOrganisationType («Wrapper»)	Navigation Constraints: OrganisationType_Discriminator_PrivateSectorOrganisationType}: inv: self.OrganisationType.organisation-type-category-code='PVSORG' Tagged Values:
Name: Type: Aggregation	Government_Organisation_Type («Transactional»)	Navigation Constraints: Tagged Values:

C.13.18 Task_Formation_Type

The Task_Formation_Type Transactional Artifact captures information about a military-organisation-type that is constituted on a temporary or semi-permanent basis for the purpose of carrying out a specific mission, operation or task.

self.task-formation-type-id = self.MilitaryOrganisationType.military-organisation-type-id
Context TaskFormationType, inv TaskFormationType_MilitaryOrganisationType:

self.organisation-type-id = self.ObjectType.object-type-id
Context OrganisationType, inv OrganisationType_ObjectType:

self.military-organisation-type-id = self.GovernmentOrganisationType.government-organisation-type-id
Context MilitaryOrganisationType, inv MilitaryOrganisationType_GovernmentOrganisationType:

self.government-organisation-type-id = self.OrganisationType.organisation-type-id
 Context GovernmentOrganisationType, inv GovernmentOrganisationType_OrganisationType:

oclConstructionSequence

Context Task_Formation_Type

```

let step1ReadPlan1 = Tuple{sourceAttr = self.TaskFormationType.task_frmtn_type_id, targetAttr =
self.MilitaryOrganisationType.mil_org_type_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.TaskFormationType, target = self.MilitaryOrganisationType, multiplicity = 1, rdSeq =
step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.MilitaryOrganisationType.mil_org_type_id, targetAttr =
self.GovernmentOrganisationType.govt_org_type_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.MilitaryOrganisationType, target = self.GovernmentOrganisationType, multiplicity = 1,
rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.GovernmentOrganisationType.govt_org_type_id, targetAttr =
self.OrganisationType.org_type_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.GovernmentOrganisationType, target = self.OrganisationType, multiplicity = 1, rdSeq =
step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.OrganisationType.org_type_id, targetAttr = self.ObjectType.obj_type_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.OrganisationType, target = self.ObjectType, multiplicity = 1, rdSeq = step4ReadSeq}

let constructionSequence = Sequence{self.TaskFormationType, step1, step2, step3, step4}
  
```

Enclosing Transactional: Task_Formation_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: OrganisationType_Enforced_ObjectType: inv: self.ObjectType.object-type-category-code='OR' Tagged Values:
Name: Identifier Type: Aggregation	TaskFormationType («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True

Name: Type: Aggregation	MilitaryOrganisationType («Wrapper»)	Navigation Constraints: TaskFormationType_Enforced_MilitaryOrganisationType}: inv: self.MilitaryOrganisationType.military-organisation-type-category-code='TASK' Tagged Values:
Name: Type: Aggregation	GovernmentOrganisationType («Wrapper»)	Navigation Constraints: MilitaryOrganisationType_Enforced_GovernmentOrganisationType}: inv: self.GovernmentOrganisationType.government-organisation-type-category-code='MILORG' Tagged Values:
Name: Type: Aggregation	OrganisationType («Wrapper»)	Navigation Constraints: GovernmentOrganisationType_Enforced_OrganisationType}: inv: self.OrganisationType.organisation-type-category-code='GVTORG' Tagged Values:

C.13.19 Unit_Type

The Unit_Type Transactional Artifact captures information about a military-organisation-type whose structure is defined by a competent authority.

self.unit-type-principal-equipment-type-id = self.EquipmentType.equipment-type-id
Context UnitType, inv UnitType_EquipmentType:

self.unit-type-id = self.MilitaryOrganisationType.military-organisation-type-id
Context UnitType, inv UnitType_MilitaryOrganisationType:

self.object-type-id = self.OrganisationType.organisation-type-id
Context ObjectType, inv ObjectType_OrganisationType:

self.military-organisation-type-id = self.GovernmentOrganisationType.government-organisation-type-id
Context MilitaryOrganisationType, inv MilitaryOrganisationType_GovernmentOrganisationType:

self.materiel-type-id = self.ObjectType.object-type-id
Context MaterielType, inv MaterielType_ObjectType:

self.government-organisation-type-id = self.OrganisationType.organisation-type-id
Context GovernmentOrganisationType, inv GovernmentOrganisationType_OrganisationType:

self.equipment-type-id = self.MaterielType.materiel-type-id
Context EquipmentType, inv EquipmentType_MaterielType:

oclConstructionSequence
Context Unit_Type

```
let step1ReadPlan1 = Tuple{sourceAttr = self.UnitType.unit_type_id, targetAttr =
self.MilitaryOrganisationType.mil_org_type_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.UnitType, target = self.MilitaryOrganisationType, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.MilitaryOrganisationType.mil_org_type_id, targetAttr =
self.GovernmentOrganisationType.govt_org_type_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.MilitaryOrganisationType, target = self.GovernmentOrganisationType, multiplicity = 1,
rdSeq = step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.GovernmentOrganisationType.govt_org_type_id, targetAttr =
self.OrganisationType.org_type_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.GovernmentOrganisationType, target = self.OrganisationType, multiplicity = 1, rdSeq =
step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.OrganisationType.org_type_id, targetAttr = self.ObjectType.obj_type_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.OrganisationType, target = self.ObjectType, multiplicity = 1, rdSeq = step4ReadSeq}

let step5ReadPlan1 = Tuple{sourceAttr = self.ObjectType.obj_type_id, targetAttr = self.MaterielType.mat_type_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.ObjectType, target = self.MaterielType, multiplicity = 1, rdSeq = step5ReadSeq}

let step6ReadPlan1 = Tuple{sourceAttr = self.MaterielType.mat_type_id, targetAttr = self.EquipmentType.eqpt_type_id}
let step6ReadSeq = Sequence{ step6ReadPlan1}
let step6 = Tuple{source = self.MaterielType, target = self.EquipmentType, multiplicity = 0..1, rdSeq = step6ReadSeq}

let step7ReadPlan1 = Tuple{sourceAttr = self.UnitType.principal_eqpt_type_id, targetAttr =
self.EquipmentType.eqpt_type_id}
let step7ReadSeq = Sequence{ step7ReadPlan1}
let step7 = Tuple{source = self.UnitType, target = self.EquipmentType, multiplicity = 0..1, rdSeq = step7ReadSeq}

let constructionSequence = Sequence{self.UnitType, step1, step2, step3, step4, step5, step6, step7}
```

Enclosing Transactional: Unit_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Type: Aggregation	GovernmentOrganisationType («Wrapper»)	Navigation Constraints: MilitaryOrganisationType_Enforced_GovernmentOrganisationType}; inv: self.GovernmentOrganisationType.government-organisation-type-category-code='MILORG' Tagged Values:
Name: Type: Aggregation	EquipmentType («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	MaterielType («Wrapper»)	Navigation Constraints: EquipmentType_Enforced_MaterielType}; inv: self.MaterielType.materiel-type-category-code='EQ' Tagged Values:
Name: Type: Aggregation	MilitaryOrganisationType («Wrapper»)	Navigation Constraints: UnitType_Enforced_MilitaryOrganisationType}; inv: self.MilitaryOrganisationType.military-organisation-type-category-code='UNIT' Tagged Values:
Name: Type: Aggregation	OrganisationType («Wrapper»)	Navigation Constraints: GovernmentOrganisationType_Enforced_OrganisationType}; inv: self.OrganisationType.organisation-type-category-code='GVTORG' Tagged Values:
Name: Identifier Type: Aggregation	UnitType («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	Principal_Equipment_Type («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: OrganisationType_Enforced_ObjectType}; inv: self.ObjectType.object-type-category-code='OR' Tagged Values:

C.14 Person

C.14.1 Person_Identification_Document

The Person_Identification_Document Transactional Artifact captures information about an individually identified instance of a document used to identify a specific Person (to whom military or civilian significance is attached), such as a Military identification card or a passport. It is a support transactional used in the Person_Item Transactional Artifact.

oclConstructionSequence

Context Person_Identification_Document

```
let constructionSequence = Sequence{self.PersonIdentificationDocument}
```

Enclosing Transactional: Person_Identification_Document

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtyped (Enclosed) Element	Constraints and Tagged Values
Name: Identifier Type: Aggregation	PersonIdentificationDocument («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True

C.14.2 Person_Item

The Person_Item Transactional Artifact captures information about an individually identified instance of a Person, to whom military or civilian significance is attached. The information maintained in this Transactional Artifact includes first, the basic tombstone information regarding this instance of a Person (name, birth date-time, blood-type code, gender code, and the professing indicator code [an indicator of whether or not the person professes a religious preference]). Next, this Transactional Artifact also includes information regarding the language skills (linguistic proficiency in a particular language) of this instance of a Person. Finally, this Transactional Artifact may include information regarding any identification documents this instance of a Person is known to have.

self.person-id = self.Person_Language_Skill.PersonLanguageSkill.person-id

Context Person, inv Person_Person_Language_Skill:

self.person-id = self.Person_Identification_Document.PersonIdentificationDocument.person-id

Context Person, inv Person_Person_Identification_Document:

self.person-id = self.ObjectItem.object-item-id

Context Person, inv Person_ObjectItem:

self.object-item-id = self.ObjectItemAlias.object-item-id

Context ObjectItem, inv ObjectItem_ObjectItemAlias:

oclConstructionSequence

Context Person_Item

```
let step1ReadPlan1 = Tuple{sourceAttr = self.Person.pers_id, targetAttr = self.ObjectItem.obj_item_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.Person, target = self.ObjectItem, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectItem.obj_item_id, targetAttr = self.ObjectItemAlias.obj_item_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ObjectItem, target = self.ObjectItemAlias, multiplicity = 0..1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.Person.pers_id, targetAttr = self.Person_Language_Skill.pers_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.Person, target = self.Person_Language_Skill, multiplicity = 0..*, rdSeq = step3ReadSeq}
```

```
let step4ReadPlan1 = Tuple{sourceAttr = self.Person.pers_id, targetAttr = self.Person_Identification_Document.pers_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.Person, target = self.Person_Identification_Document, multiplicity = 0..*, rdSeq = step4ReadSeq}
```

```
let constructionSequence = Sequence{self.Person, step1, step2, step3, step4}
```

Enclosing Transactional: Person_Item

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Type: Aggregation	Person_Identification_Document («Transactional»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	Person («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
Name: Type: Aggregation	Person_Language_Skill («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	ObjectItemAlias («Wrapper»)	Navigation Constraints: Tagged Values:

Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Person_Enforced_ObjectItem}: inv: self.ObjectItem.object-item-category-code='PE' Tagged Values:
--	------------------------	--

C.14.3 Person_Item_Type

The Person_Item_Type Transactional Artifact captures information about the perceived classification of a specific person-item as a specific person -type. This transactional encloses the Absolute_Reporting_Data Transactional Artifact in which information about the type classification report is captured.

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id
Context ObjectItemType, inv ObjectItemType_Absolute_Reporting_Data:

self.object-type-id = self.Person_Type.PersonType.person-type-id
Context ObjectType, inv ObjectType_Person_Type:

self.object-type-id = self.ObjectType.object-type-id
Context ObjectItemType, inv ObjectItemType_ObjectType:

self.object-item-id = self.Person_Item.Person.person-id
Context ObjectItem, inv ObjectItem_Person_Item:

self.object-item-id = self.ObjectItem.object-item-id
Context ObjectItemType, inv ObjectItemType_ObjectItem:

oclConstructionSequence
Context Person_Item_Type

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectItemType.rptd_id, targetAttr = self.Absolute_Reporting_Data.rptd_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ObjectItemType, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectItemType.obj_type_id, targetAttr = self.ObjectType.obj_type_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ObjectItemType, target = self.ObjectType, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectType.obj_type_id, targetAttr = self.Person_Type.pers_type_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ObjectType, target = self.Person_Type, multiplicity = 1, rdSeq = step3ReadSeq}
```

```
let step4ReadPlan1 = Tuple{sourceAttr = self.ObjectItemType.obj_item_id, targetAttr = self.ObjectItem.obj_item_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.ObjectItemType, target = self.ObjectItem, multiplicity = 1, rdSeq = step4ReadSeq}
```

```

let step5ReadPlan1 = Tuple{sourceAttr = self.ObjectItem.obj_item_id, targetAttr = self.Person_Item.pers_id}
let step5ReadSeq = Sequence{ step5ReadPlan1}
let step5 = Tuple{source = self.ObjectItem, target = self.Person_Item, multiplicity = 1, rdSeq = step5ReadSeq}

let constructionSequence = Sequence{self.ObjectItemType, step1, step2, step3, step4, step5}

```

Enclosing Transaction: Person_Item_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Person_Item_Enforced_ObjectItem: inv: self.ObjectItem.object-item-category-code='PE' Tagged Values:
Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: Person_Type_Enforced_ObjectType: inv: self.ObjectType.object-type-category-code='PE' Tagged Values:
Name: Type: Aggregation	Person_Type («Transactional»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ObjectItemType («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True isWatchPoint = True
Name: Type: Aggregation	Person_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:

C.14.4 Person_Language_Skill

The Person_Language_Skill Transactional Artifact captures information about the proficiency or ability of a specific Person (to whom military or civilian significance is attached) with regard to a specific language. It is a support transactional used in the Person_Item Transactional Artifact.

oclConstructionSequence

Context Person_Language_Skill

```
let constructionSequence = Sequence{self.PersonLanguageSkill}
```

Enclosing Transactional: Person_Language_Skill

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Identifier Type: Aggregation	PersonLanguageSkill («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True
---	---------------------------------	--

C.14.5 Person_Position

The Person_Position Transactional Artifact captures information about the association of a specific person to a location so that the geographic position of the person can be specified. This transactional encloses the Location_Composite Transactional Artifact to support the specification of the location in geometrical terms. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the location association is captured.

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id

Context ObjectItemLocation, inv ObjectItemLocation_Absolute_Reporting_Data:

self.object-item-id = self.Person.person-id

Context ObjectItem, inv ObjectItem_Person:

self.object-item-id = self.ObjectItem.object-item-id

Context ObjectItemLocation, inv ObjectItemLocation_ObjectItem:

self.location-id = self.Location_Composite.Location.location-id

Context ObjectItemLocation, inv ObjectItemLocation_Location_Composite:

oclConstructionSequence

Context Person_Position

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ObjectItemLocation.loc_id, targetAttr = self.Location_Composite.loc_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ObjectItemLocation, target = self.Location_Composite, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectItemLocation.rptd_id, targetAttr = self.Absolute_Reporting_Data.rptd_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ObjectItemLocation, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectItemLocation.obj_item_id, targetAttr = self.ObjectItem.obj_item_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ObjectItemLocation, target = self.ObjectItem, multiplicity = 1, rdSeq = step3ReadSeq}
```

```
let step4ReadPlan1 = Tuple{sourceAttr = self.ObjectItem.obj_item_id, targetAttr = self.Person_Item.pers_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.ObjectItem, target = self.Person_Item, multiplicity = 1, rdSeq = step4ReadSeq}
```

```
let constructionSequence = Sequence{self.ObjectItemLocation, step1, step2, step3, step4}
```

Enclosing Transactional: Person_Position

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Location_Composite («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Person_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ObjectItemLocation («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True isWatchPoint = True
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Person_Item_Enforced_ObjectItem}: inv: self.ObjectItem.object-item-category-code='PE' Tagged Values:

Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:
--	--	---

C.14.6 Person_Status

The Person_Status Transactional Artifact captures information about the condition or status of a specific person. The status information captured pertains primarily to the operational status of the person. This transactional also encloses the Absolute_Reporting_Data Transactional Artifact in which information about the status report is captured.

self.reporting-data-id = self.Absolute_Reporting_Data.ReportingData.reporting-data-id

Context ObjectItemStatus, inv ObjectItemStatus_Absolute_Reporting_Data:

self.object-item-id = self.PersonStatus.person-status-id and self.object-item-status-index = self.PersonStatus.object-item-status-index

Context ObjectItemStatus, inv ObjectItemStatus_PersonStatus:

self.object-item-id = self.ObjectItem.object-item-id

Context ObjectItemStatus, inv ObjectItemStatus_ObjectItem:

oclConstructionSequence

Context Person_Status

```
let step1ReadPlan1 = Tuple{sourceAttr = self.PersonStatus.pers_stat_id, targetAttr = self.ObjectItemStatus.obj_item_id}
let step1ReadPlan2 = Tuple{sourceAttr = self.PersonStatus.obj_item_stat_ix, targetAttr =
self.ObjectItemStatus.obj_item_stat_ix}
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2}
let step1 = Tuple{source = self.PersonStatus, target = self.ObjectItemStatus, multiplicity = 1, rdSeq = step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.ObjectItemStatus.rptd_id, targetAttr = self.Absolute_Reporting_Data.rptd_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ObjectItemStatus, target = self.Absolute_Reporting_Data, multiplicity = 1, rdSeq =
step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.ObjectItemStatus.obj_item_id, targetAttr = self.ObjectItem.obj_item_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ObjectItemStatus, target = self.ObjectItem, multiplicity = 1, rdSeq = step3ReadSeq}
```

```
let constructionSequence = Sequence{self.PersonStatus, step1, step2, step3}
```

Enclosing Transactional: Person_Status

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: WatchPoint Type: Aggregation	ObjectItemStatus («Wrapper»)	Navigation Constraints: Tagged Values: isWatchPoint = True
Name: Identifier Type: Aggregation	PersonStatus («Wrapper»)	Navigation Constraints: ObjectItemStatus_Discriminator_PersonStatus}; inv: self.ObjectItemStatus.object-item-status-category-code='PE' Tagged Values: isIdentifier = True
Name: Type: Aggregation	ObjectItem («Wrapper»)	Navigation Constraints: Person_Item_Enforced_ObjectItem}; inv: self.ObjectItem.object-item-category-code='PE' Tagged Values:
Name: Type: Aggregation	Absolute_Reporting_Data («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Person_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.14.7 Person_Type

The Person_Type Transactional Artifact captures information about a specific type of Person. The primary classification is Civilian, Military, or Parliamentary. The secondary classification is numerous, including such types as Intellectual, Landowner, Displaced person, Prisoner of war, etc. Another classification includes a designation of the military or civil grade that establishes the relative position or status of the specific person-type within an organization (rank).

self.person-type-id = self.ObjectType.object-type-id
Context PersonType, inv PersonType_ObjectType:

oclConstructionSequence

Context Person_Type

```
let step1ReadPlan1 = Tuple{sourceAttr = self.PersonType.pers_type_id, targetAttr = self.ObjectType.obj_type_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.PersonType, target = self.ObjectType, multiplicity = 1, rdSeq = step1ReadSeq}

let constructionSequence = Sequence{self.PersonType, step1}
```

Enclosing Transactional: Person_Type

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Type: Aggregation	ObjectType («Wrapper»)	Navigation Constraints: PersonType_Enforced_ObjectType: inv: self.ObjectType.object-type-category-code='PE' Tagged Values:
Name: Identifier Type: Aggregation	PersonType («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True

C.15 Plans & Orders

C.15.1 Order_Status

The Order_Status Transactional Artifact captures information about the condition of a specific Order. The domain values are Issued, Stopped.

self.order-id = self.PlanOrder.plan-order-id

Context Order, inv Order_PlanOrder:

self.order-id = self.Order.order-id

Context OrderStatus, inv OrderStatus_Order:

oclConstructionSequence

Context Order_Status

```
let step1ReadPlan1 = Tuple{sourceAttr = self.OrderStatus.ordr_id, targetAttr = self.Order.ordr_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
```

```

let step1 = Tuple{source = self.OrderStatus, target = self.Order, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.Order.ordr_id, targetAttr = self.PlanOrder.pln_ordr_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.Order, target = self.PlanOrder, multiplicity = 1, rdSeq = step2ReadSeq}

let constructionSequence = Sequence{self.OrderStatus, step1, step2}

```

Enclosing Transactional: Order_Status

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier WatchPoint Type: Aggregation	OrderStatus («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True isWatchPoint = True
Name: Type: Aggregation	Order («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	PlanOrder («Wrapper»)	Navigation Constraints: Order_Enforced_PlanOrder: inv: self.PlanOrder.plan-order-category-code='ORDER' Tagged Values:

C.15.2 Plan_Order_Assoc

The Plan_Order_Assoc Transactional Artifact captures information about the associations between specific pairs of plan-order, such as is superseded by.

oclConstructionSequence

Context Plan_Order_Assoc

```

let step1ReadPlan1 = Tuple{sourceAttr = self.PlanOrderAssociation.poa_subj_pln_ordr_id, targetAttr = self.PlanOrder.pln_ordr_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.PlanOrderAssociation, target = self.PlanOrder, multiplicity = 2, rdSeq = step1ReadSeq}

```

```

let step2ReadPlan1 = Tuple{sourceAttr = self.PlanOrderAssociation.poa_obj_pln_ordr_id, targetAttr =
self.PlanOrder.pln_ordr_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.PlanOrderAssociation, target = self.PlanOrder, multiplicity = 2, rdSeq = step2ReadSeq}

let constructionSequence = Sequence{self.PlanOrderAssociation, step1, step2}

```

self.plan-order-association-object-plan-order-id = self.PlanOrder.plan-order-id
Context PlanOrderAssociation, inv PlanOrderAssociation_PlanOrder:

self.plan-order-association-subject-plan-order-id = self.PlanOrder.plan-order-id
Context PlanOrderAssociation, inv PlanOrderAssociation_PlanOrder:

Enclosing Transactional: Plan_Order_Assoc

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	PlanOrder («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	PlanOrderAssociation («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True isWatchPoint = True

C.15.3 Plan_Order_Component

The Plan_Order_Component Transactional Artifact captures information about the structural elements of a specific plan-order. It represents the parts of a plan or order, such as headers, paragraphs or annexes.

self.plan-order-id = self.PlanOrder.plan-order-id
Context PlanOrderComponent, inv PlanOrderComponent_PlanOrder:

self.plan-order-id = self.Plan_Order_Component_Content.PlanOrderComponentContent.plan-order-id and self.plan-order-component-index = self.Plan_Order_Component_Content.PlanOrderComponentContent.plan-order-component-index
Context PlanOrderComponent, inv PlanOrderComponent_Plan_Order_Component_Content:

oclConstructionSequence
Context Plan_Order_Component

```

let step1ReadPlan1 = Tuple{sourceAttr = self.PlanOrderComponent.pln_ordr_id, targetAttr =
self.Plan_Order_Component_Content.pln_ordr_id}
let step1ReadPlan2 = Tuple{sourceAttr = self.PlanOrderComponent.poc_ix, targetAttr =
self.Plan_Order_Component_Content.poc_ix}
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2}
let step1 = Tuple{source = self.PlanOrderComponent, target = self.Plan_Order_Component_Content, multiplicity = 1..*,
rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.PlanOrderComponent.pln_ordr_id, targetAttr = self.PlanOrder.pln_ordr_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.PlanOrderComponent, target = self.PlanOrder, multiplicity = 1, rdSeq = step2ReadSeq}

let constructionSequence = Sequence{self.PlanOrderComponent, step1, step2}

```

Enclosing Transactional: Plan_Order_Component

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: WatchPoint Identifier Type: Aggregation	PlanOrderComponent («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True isWatchPoint = True
Name: Type: Aggregation	Plan_Order_Component_Content («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Plan_Order_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	PlanOrder («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Plan_Order_Component_Structure («Transactional»)	Navigation Constraints: Tagged Values:

C.15.4 Plan_Order_Component_Content

The Plan_Order_Component_Content Transactional Artifact captures information about the substantive subject matter (content) of a specific plan-order-component.

self.plan-order-id = self.PlanOrderComponent.plan-order-id and self.plan-order-component-index = self.PlanOrderComponent.plan-order-component-index

Context PlanOrderComponentContent, inv PlanOrderComponentContent_PlanOrderComponent:

self.plan-order-component-content-data-context-id = self.Context.context-id
Context PlanOrderComponentContent, inv PlanOrderComponentContent_Context:

self.component-text-content-id = self.ComponentTextContent.component-text-content-id
Context PlanOrderComponentContent, inv PlanOrderComponentContent_ComponentTextContent:

self.component-header-content-id =
self.Plan_Order_Component_Header_Content.ComponentHeaderContent.component-header-content-id
Context PlanOrderComponentContent, inv PlanOrderComponentContent_Plan_Order_Component_Header_Content:

oclConstructionSequence

Context Plan_Order_Component_Content

```
let step1ReadPlan1 = Tuple{sourceAttr = self.PlanOrderComponentContent.pln_ordr_id, targetAttr =
self.PlanOrderComponent.pln_ordr_id}
let step1ReadPlan2 = Tuple{sourceAttr = self.PlanOrderComponentContent.poc_ix, targetAttr =
self.PlanOrderComponent.poc_ix}
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2}
let step1 = Tuple{source = self.PlanOrderComponentContent, target = self.PlanOrderComponent, multiplicity = 1, rdSeq =
step1ReadSeq}
```

```
let step2ReadPlan1 = Tuple{sourceAttr = self.PlanOrderComponentContent.cmpnt_txt_cntnt_id, targetAttr =
self.ComponentTextContent.cmpnt_txt_cntnt_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.PlanOrderComponentContent, target = self.ComponentTextContent, multiplicity = 0..1,
rdSeq = step2ReadSeq}
```

```
let step3ReadPlan1 = Tuple{sourceAttr = self.PlanOrderComponentContent.poc_cntnt_data_contxt_id, targetAttr =
self.Context.contxt_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.PlanOrderComponentContent, target = self.Context, multiplicity = 0..1, rdSeq =
step3ReadSeq}
```

```
let step4ReadPlan1 = Tuple{sourceAttr = self.PlanOrderComponentContent.cmpnt_hdr_cntnt_id, targetAttr =
self.Plan_Order_Component_Header_Content.cmpnt_hdr_cntnt_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.PlanOrderComponentContent, target = self.Plan_Order_Component_Header_Content,
multiplicity = 0..1, rdSeq = step4ReadSeq}
```

```
let constructionSequence = Sequence{self.PlanOrderComponentContent, step1, step2, step3, step4}
```

Enclosing Transactional: Plan_Order_Component_Content

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	ComponentTextContent («Wrapper»)	Navigation Constraints: Tagged Values:
Name: WatchPoint Identifier Type: Aggregation	PlanOrderComponentContent («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True
Name: Type: Aggregation	Plan_Order_Header_Content («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Context («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	PlanOrder («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Plan_Order_Component_Header_Content («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	PlanOrderComponent («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Plan_Order_Component_Content_Reference («Transactional»)	Navigation Constraints: Tagged Values:

C.15.5 Plan_Order_Component_Content_Reference

The Plan_Order_Component_Content_Reference Transactional Artifact captures information about a specific reference that applies to a specific plan-order-component.

self.reference-id = self.Reference.reference-id

Context PlanOrderComponentContentReference, inv PlanOrderComponentContentReference_Reference:

oclConstructionSequence

Context Plan_Order_Component_Content_Reference

let step1ReadPlan1 = Tuple{sourceAttr = self.PlanOrderComponentContentReference.pln_ordr_id, targetAttr =


```

self.Plan_Order_Component_Content.pln_ordr_id}
let step1ReadPlan2 = Tuple{sourceAttr = self.PlanOrderComponentContentReference.poc_ix, targetAttr =
self.Plan_Order_Component_Content.poc_ix}
let step1ReadPlan3 = Tuple{sourceAttr = self.PlanOrderComponentContentReference.poc_cntnt_ix, targetAttr =
self.Plan_Order_Component_Content.poc_cntnt_ix}
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2, step1ReadPlan3}
let step1 = Tuple{source = self.PlanOrderComponentContentReference, target = self.Plan_Order_Component_Content,
multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.PlanOrderComponentContentReference.ref_id, targetAttr =
self.Reference.ref_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.PlanOrderComponentContentReference, target = self.Reference, multiplicity = 1, rdSeq =
step2ReadSeq}

let constructionSequence = Sequence{self.PlanOrderComponentContentReference, step1, step2}

```

Enclosing Transaction: Plan_Order_Component_Content_Reference

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Reference («Wrapper»)	Navigation Constraints: Tagged Values:
Name: WatchPoint Identifier Type: Aggregation	PlanOrderComponentContentReference («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True
Name: Type: Aggregation	Plan_Order_Component_Content («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	PlanOrder («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	PlanOrderComponent («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	PlanOrderComponentContent («Wrapper»)	Navigation Constraints: Tagged Values:

C.15.6 Plan_Order_Component_Header_Content

The Plan_Order_Component_Header_Content Transactional Artifact captures information about introductory subject matter intended to identify an element of a document.

oclConstructionSequence

Context Plan_Order_Component_Header_Content

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ComponentHeaderContent.security_clsfc_id, targetAttr =
self.SecurityClassification.security_clsfc_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ComponentHeaderContent, target = self.SecurityClassification, multiplicity = 0..1, rdSeq =
step1ReadSeq}

let constructionSequence = Sequence{self.ComponentHeaderContent, step1}
```

self.security-classification-id = self.SecurityClassification.security-classification-id

Context ComponentHeaderContent, inv ComponentHeaderContent_SecurityClassification:

Enclosing Transactional: Plan_Order_Component_Header_Content

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Type: Aggregation	SecurityClassification («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	ComponentHeaderContent («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True

C.15.7 Plan_Order_Component_Structure

The Plan_Order_Component_Structure Transactional Artifact captures information about the associations between specific pairs of plan-order-components to represent the hierarchical structure of a plan or order, such as is parent of.

oclConstructionSequence

Context Plan_Order_Component_Structure

```
let step1ReadPlan1 = Tuple{sourceAttr = self.PlanOrderComponentStructure.poc_struct_obj_pln_ordr_id, targetAttr =
self.Plan_Order_Component.pln_ordr_id}
let step1ReadPlan2 = Tuple{sourceAttr = self.PlanOrderComponentStructure.poc_struct_obj_poc_ix, targetAttr =
```

```

self.Plan_Order_Component.poc_ix}
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2}
let step1 = Tuple{source = self.PlanOrderComponentStructure, target = self.Plan_Order_Component, multiplicity = 2,
rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.PlanOrderComponentStructure.poc_struct_subj_pln_ordr_id, targetAttr =
self.Plan_Order_Component.pln_ordr_id}
let step2ReadPlan2 = Tuple{sourceAttr = self.PlanOrderComponentStructure.poc_struct_subj_poc_ix, targetAttr =
self.Plan_Order_Component.poc_ix}
let step2ReadSeq = Sequence{ step2ReadPlan1, step2ReadPlan2}
let step2 = Tuple{source = self.PlanOrderComponentStructure, target = self.Plan_Order_Component, multiplicity = 2,
rdSeq = step2ReadSeq}

let constructionSequence = Sequence{self.PlanOrderComponentStructure, step1, step2}

```

Enclosing Transactional: Plan_Order_Component_Structure

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier WatchPoint Type: Aggregation	PlanOrderComponentStructure («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True
Name: Type: Aggregation	Plan_Order_Component («Transactional»)	Navigation Constraints: Tagged Values:

C.15.8 Plan_Order_Distribution

The Plan_Order_Distribution Transactional Artifact captures information about the intended recipient organization of a specific plan-order. It conveys the reason that the plan or order was sent to the organization, which includes: for information or for execution.

```

self.recipient-organisation-id = self.Organisation_Item.Organisation.organisation-id
Context PlanOrderDistribution, inv PlanOrderDistribution_Organisation_Item:

```

```

self.plan-order-id = self.PlanOrder.plan-order-id
Context PlanOrderDistribution, inv PlanOrderDistribution_PlanOrder:

```

oclConstructionSequence

Context Plan_Order_Distribution

```

let step1ReadPlan1 = Tuple{sourceAttr = self.PlanOrderDistribution.recipient_org_id, targetAttr =
self.Organisation_Item.org_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.PlanOrderDistribution, target = self.Organisation_Item, multiplicity = 1, rdSeq =
step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.PlanOrderDistribution.pln_ordr_id, targetAttr = self.PlanOrder.pln_ordr_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.PlanOrderDistribution, target = self.PlanOrder, multiplicity = 1, rdSeq = step2ReadSeq}

let constructionSequence = Sequence{self.PlanOrderDistribution, step1, step2}

```

Enclosing Transactional: Plan_Order_Distribution

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	PlanOrder («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	PlanOrderDistribution («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True isWatchPoint = True
Name: Type: Aggregation	Organisation_Item («Transactional»)	Navigation Constraints: Tagged Values:

C.15.9 Plan_Order_Distribution_Acknowledgement

The Plan_Order_Distribution_Acknowledgement Transactional Artifact captures information about the receipt by the intended recipient organization of a specific plan-order, which includes: Acknowledged, Read, and Received.

self.plan-order-id = self.Plan_Order_Distribution.PlanOrderDistribution.plan-order-id and self.plan-order-distribution-index = self.Plan_Order_Distribution.PlanOrderDistribution.plan-order-distribution-index

Context PlanOrderDistributionAcknowledgement, inv PlanOrderDistributionAcknowledgement_Plan_Order_Distribution:

oclConstructionSequence

Context Plan_Order_Distribution_Acknowledgement

```

let step1ReadPlan1 = Tuple{sourceAttr = self.PlanOrderDistributionAcknowledgement.pln_ordr_id, targetAttr =
self.Plan_Order_Distribution.pln_ordr_id}
let step1ReadPlan2 = Tuple{sourceAttr = self.PlanOrderDistributionAcknowledgement.pln_ordr_distr_ix, targetAttr =
self.Plan_Order_Distribution.pln_ordr_distr_ix}
let step1ReadSeq = Sequence{ step1ReadPlan1, step1ReadPlan2}
let step1 = Tuple{source = self.PlanOrderDistributionAcknowledgement, target = self.Plan_Order_Distribution, multiplicity
= 1, rdSeq = step1ReadSeq}

let constructionSequence = Sequence{self.PlanOrderDistributionAcknowledgement, step1}

```

Enclosing Transactional: Plan_Order_Distribution_Acknowledgement

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier WatchPoint Type: Aggregation	PlanOrderDistributionAcknowledgement («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True
Name: Type: Aggregation	Plan_Order_Distribution («Transactional»)	Navigation Constraints: Tagged Values:

C.15.10Plan_Order_Header_Content

The Plan_Order_Header_Content Transactional Artifact captures information about the introductory subject matter that applies to the entirety of a specific plan-order. Note, it specifies information about the content, not the content itself.

self.security-classification-id = self.SecurityClassification.security-classification-id
Context PlanOrderHeaderContent, inv PlanOrderHeaderContent_SecurityClassification:

oclConstructionSequence
Context Plan_Order_Header_Content

```

let step1ReadPlan1 = Tuple{sourceAttr = self.PlanOrderHeaderContent.security_clsfc_id, targetAttr =
self.SecurityClassification.security_clsfc_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.PlanOrderHeaderContent, target = self.SecurityClassification, multiplicity = 0..1, rdSeq =
step1ReadSeq}

```

```
let constructionSequence = Sequence{self.PlanOrderHeaderContent, step1}
```

Enclosing Transactional: Plan_Order_Header_Content

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Type: Aggregation	SecurityClassification («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	PlanOrderHeaderContent («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True

C.15.11 Plan_Order_Item

The Plan_Order_Item Transactional Artifact captures the information about a specific Plan (a proposal for executing a command decision or a project) or Order (a communication that conveys instructions from a superior to a subordinate).

Plan_Order_Item encapsulates transactional artifacts Plan_Order_Component and Plan_Order_Header_Content.

Plan_Order_Item is a support transactional of Transactional Artifacts Operational_Information_Group_Plan_Order_Content and Organisation_Plan_Order_Assoc.

Enclosing Transactional: Plan_Order_Item

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: WatchPoint Identifier Type: Aggregation	PlanOrder («Wrapper»)	Navigation Constraints: Tagged Values: isWatchPoint = TrueisIdentifier = True

Name: Type: Aggregation	Order («Wrapper»)	Navigation Constraints: Plan_Order_Item_Discriminator_Order}: inv: self.PlanOrder.plan-order-category-code='ORDER' Tagged Values:
Name: Type: Aggregation	Plan («Wrapper»)	Navigation Constraints: Plan_Order_Item_Discriminator_Plan}: inv: self.PlanOrder.plan-order-category-code='PLAN' Tagged Values:
Name: Type: Aggregation	Plan_Order_Header_Content («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Plan_Order_Component («Transactional»)	Navigation Constraints: Tagged Values:

C.15.12 Plan_Status

The Plan_Status Transactional Artifact captures information about the condition of a specific Plan, in terms of Complete or Not Complete.

self.plan-id = self.PlanOrder.plan-order-id
Context Plan, inv Plan_PlanOrder:

self.plan-id = self.Plan.plan-id
Context PlanStatus, inv PlanStatus_Plan:

oclConstructionSequence
Context Plan_Status

```

let step1ReadPlan1 = Tuple{sourceAttr = self.PlanStatus.pln_id, targetAttr = self.Plan.pln_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.PlanStatus, target = self.Plan, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.Plan.pln_id, targetAttr = self.PlanOrder.pln_ordr_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.Plan, target = self.PlanOrder, multiplicity = 1, rdSeq = step2ReadSeq}

let constructionSequence = Sequence{self.PlanStatus, step1, step2}

```

Enclosing Transactional: Plan_Status

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Identifier WatchPoint Type: Aggregation	PlanStatus («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = TrueisWatchPoint = True
Name: Type: Aggregation	PlanOrder («Wrapper»)	Navigation Constraints: Plan_Enforced_PlanOrder}: inv: self.PlanOrder.plan-order-category-code='PLAN' Tagged Values:
Name: Type: Aggregation	Plan («Wrapper»)	Navigation Constraints: Tagged Values:

C.16 Report

C.16.1 Absolute_Reporting_Data

The Absolute_Reporting_Data Transactional Artifact captures information about an individual report, which generally relate to dynamic data (e.g. location, status, holdings, associations and classification). The amplifying information captured includes the identity of the reporting organization, the time of the report (expressed in a date-time that is referenced to Universal Time), and its credibility, and will also include any reference information that has been associated with the report.

self.reporting-data-reporting-organisation-id = self.Organisation_Item.Organisation.organisation-id
Context ReportingData, inv ReportingData_Organisation_Item:

self.reporting-data-id = self.ReportingDataAbsoluteTiming.reporting-data-absolute-timing-reporting-data-id
Context ReportingData, inv ReportingData_ReportingDataAbsoluteTiming:

self.reference-id = self.Reference.reference-id
Context ReportingData, inv ReportingData_Reference:

oclConstructionSequence

Context Absolute_Reporting_Data

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ReportingData.rep_org_id, targetAttr = self.Organisation_Item.org_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ReportingData, target = self.Organisation_Item, multiplicity = 1, rdSeq = step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ReportingData.rptd_id, targetAttr =
self.ReportingDataAbsoluteTiming.rptd_abs_timing_rptd_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ReportingData, target = self.ReportingDataAbsoluteTiming, multiplicity = 1, rdSeq =
step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ReportingData.ref_id, targetAttr = self.Reference.ref_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ReportingData, target = self.Reference, multiplicity = 0..1, rdSeq = step3ReadSeq}

let constructionSequence = Sequence{self.ReportingData, step1, step2, step3}
```

Enclosing Transactional: Absolute_Reporting_Data

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or marshaling of data through the transaction:

Name: Type: Aggregation	ReportingData («Wrapper»)	Navigation Constraints: ReportingDataAbsoluteTiming_Enforced_ReportingData: inv: self.ReportingData.reporting-data-timing-category- code='RDABST' Tagged Values:
Name: Type: Aggregation	Organisation_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Reference («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier Type: Aggregation	ReportingDataAbsoluteTiming («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True

C.16.2 Relative_Reporting_Data

The Relative_Reporting_Data Transactional Artifact captures information about an individual report, which generally relate to dynamic data (e.g. location, status, holdings, associations and classification). The amplifying information captured includes the identity of the reporting organization, the time of the report (expressed in a date-time that is referenced to a specific Action-Task), and its credibility, and will also include any reference information that has been associated with the report.

self.reporting-data-reporting-organisation-id = self.Organisation_Item.Organisation.organisation-id

Context ReportingData, inv ReportingData_Organisation_Item:

self.reporting-data-relative-timing-reporting-data-id = self.ReportingData.reporting-data-id

Context ReportingDataRelativeTiming, inv ReportingDataRelativeTiming_ReportingData:

self.reporting-data-relative-timing-reference-action-task-id = self.ActionTask_Composite.ActionTask.action-task-id

Context ReportingDataRelativeTiming, inv ReportingDataRelativeTiming_ActionTask_Composite:

self.reference-id = self.Reference.reference-id

Context ReportingData, inv ReportingData_Reference:

oclConstructionSequence

Context Relative_Reporting_Data

```
let step1ReadPlan1 = Tuple{sourceAttr = self.ReportingDataRelativeTiming.ref_act_task_id, targetAttr =
self.ActionTask_Composite.act_task_id}
let step1ReadSeq = Sequence{ step1ReadPlan1}
let step1 = Tuple{source = self.ReportingDataRelativeTiming, target = self.ActionTask_Composite, multiplicity = 1, rdSeq =
step1ReadSeq}

let step2ReadPlan1 = Tuple{sourceAttr = self.ReportingDataRelativeTiming.rptd_rel_timing_rptd_id, targetAttr =
self.ReportingData.rptd_id}
let step2ReadSeq = Sequence{ step2ReadPlan1}
let step2 = Tuple{source = self.ReportingDataRelativeTiming, target = self.ReportingData, multiplicity = 1, rdSeq =
step2ReadSeq}

let step3ReadPlan1 = Tuple{sourceAttr = self.ReportingData.rep_org_id, targetAttr = self.Organisation_Item.org_id}
let step3ReadSeq = Sequence{ step3ReadPlan1}
let step3 = Tuple{source = self.ReportingData, target = self.Organisation_Item, multiplicity = 1, rdSeq = step3ReadSeq}

let step4ReadPlan1 = Tuple{sourceAttr = self.ReportingData.ref_id, targetAttr = self.Reference.ref_id}
let step4ReadSeq = Sequence{ step4ReadPlan1}
let step4 = Tuple{source = self.ReportingData, target = self.Reference, multiplicity = 0..1, rdSeq = step4ReadSeq}

let constructionSequence = Sequence{self.ReportingDataRelativeTiming, step1, step2, step3, step4}
```

Enclosing Transactional: Relative_Reporting_Data

Enclosed artifacts are presented in the following table along with any constraints governing their inclusion in the aggregation or mashaling of data through the transaction:

Connector	Subtented (Enclosed) Element	Constraints and Tagged Values
Name: Type: Aggregation	Organisation_Item («Transactional»)	Navigation Constraints: Tagged Values:
Name: Type: Aggregation	Reference («Wrapper»)	Navigation Constraints: Tagged Values:
Name: Identifier WatchPoint Type: Aggregation	ReportingDataRelativeTiming («Wrapper»)	Navigation Constraints: Tagged Values: isIdentifier = True isWatchPoint = True
Name: Type: Aggregation	ReportingData («Wrapper»)	Navigation Constraints: ReportingDataRelativeTiming_Enforced_Reporting Data}: inv: self.ReportingData.reporting-data-timing- category-code='RDRELT' Tagged Values:
Name: Type: Aggregation	ActionTask_Composite («Transactional»)	Navigation Constraints: Tagged Values:

Annex D

XML Schema Definitions

(normative)

D.1 Overview

This annex is provided for completeness. There are no XML Schemas provided in the document. The two compliance XSDs are provided as a separate files:

- Verbose: 20090814 SOPES Verbose XSD.zip
- Optimized: 20090814 SOPES Optimized XSD.zip

The XSDs were developed out of the UML models to reflect two styles of XML documents which communities may wish to exchange.

The Verbose XSD (supporting “Type 1” compliance) describes an XML document that contains its complete data structure and position in each exchange. This type of exchange would easily integrate in off-the-shelf WEB applications.

The Optimised XSD (supporting “Type 2” compliance) simply carries the data associated with each transaction. It is far more efficient in network resources, but requires more in-depth processing at the subscribing nodes; as the structuring and positioning of data has been removed.

Annex E

Java Code

Platform Specific Model (PSM)

(normative)

E.1 Overview

This annex is provided for completeness. There is no code provided in the document. The JAVA PSM is provided as a separate file:

- 20090814 SOPES JAVA PSM.zip

The SOPES JAVA PSM provides skeleton code for the implementation of a community application embedding the exchange policies specified in the SOPES model. The skeleton does not contain:

- Integration code for the community application interfaces;
- Integration code for the selected distribution mechanisms;
- Integration with a selected data management system;
- Exception handling.

These elements need to be addressed by community specifications and/or platform specific implementations.

Annex F GLOSSARY

(normative)

AB	Architecture Board
ADatP-3	Allied Data Publication No 3 - Message Text Formatting System
ALU	ATCCIS Logical Unit
API	Application Program Interface
ARM	ATCCIS Replication Unit
ATCCIS	Army Tactical Command and Control System
C2	Command and Control
C&A	Certification and Accreditation
C3	Consultation, Command and Control
C4	Consultation, Command, Control and Communications
C4I	Consultation, Command, Control, Communications and Intelligence
CAP	Common Alerting Protocol
CoI	Community of Interest
COP	Common Operational Picture
CORBA	Common Object Request Broker Architecture
CORBA/IIOP	CORBA Internet Inter-Orb Protocol
COTS	Commercial Off The Shelf
CWM	Common Warehouse Meta-Model
CWML	Cyclone Warning Markup Language
DDS	Realtime Data Distribution Service
DEM	Data Exchange Mechanism
DMO	Disaster Management Ontology
DTC	Domain Technology Committee
DTF	Domain Task Force
DND	Department of National Defence
DNDAF	Department of National Defence Architecture Framework
DOD	Department of Defence
DODAF	Department of Defence Architecture Framework
ECM	Emergency and Crisis Management
EDXL	Emergency Data Exchange Language
EDXL-DL	EDXL-Distribution Element

EDXL-RM	EDXL- Resource Messaging
EDXL-HAVE	EDXL-Hospital AVailability Exchange
GH	Generic Hub
GML	Geography Markup Language
JC3	Joint Consultation, Command and Control
JC3IEDM	Joint Consultation, Command and Control Information Exchange Data Model
ICE	Information Content Elements
IDL	Interface Definition Language
IEF	Information Exchange Framework
IEDM	Information Exchange Data Model
IER	Information Exchange Requirement
IM	Information Management
IT	Information Technology
MARS	Middleware and Related Services
MDA	Model Driven Architecture
MEM	Message Exchange Mechanism
MIP	Multinational Interoperability Programme
MOD	Ministry of Defence
MODAF	Ministry of Defence Architecture Framework
MOF	Meta Object Facility
NAF	NATO Architecture Framework
NATO	North Atlantic Treaty Organization
NGO	Non-Governmental Organization
NIEM	National Information Exchange Model
NXD	Native XML Database
NXDB	Native XML Database
OCL	Object Constraint Language
OGD	Other Government Department
OMG	Object Management Group
OO	Object Oriented
OODB	Object Oriented Database
OTHGold	Over-The-Horizon-Gold message format to the common operational picture (COP).
OWG	Operational Working Group
OWL	Web Ontology Language
PDU	Protocol Data Unit (MIP Defined Format)
PIM	Platform Independent Model
PSM	Platform Specific Model
PTF	Platform Task Force

PVO	Private Volunteer Organization
RFC	Request for Comment
RFP	Request for Proposal
SDK	Software Development Kit
SME	Subject Matter Expert
SOA	Service Oriented Architecture
SOP	Shared Operational Picture
SOPES	Shared Operational Picture Exchange Services
SRA	Situational Risk Assessment
SysML	System Modeling Language
TP	Tactical Picture
TRA	Threat Risk Assessment
TWML	Tsunami Warning Markup Language
UML	Unified Modeling Language
UPDM	UML Profile for DODAF and MODAF
US	United States
USA	United States of America
USMTF	Uniform Services Message Text Format
VMF	Variable Message Format
WG	Working Group
XMI	XML Metadata Interchange Specification
XML	eXtensible Mark-up Language
XSD	XML Schema Definition

The use of IDL conventions is as defined in ITU-T Recommendation X.920 (1999) | ISO/IEC 10750:1999, Open Distributed Processing - Interface Definition Language.

