

VS IPL Core Profile

Version 1.0



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VSIPL Core Profile

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VSIPL Core Profile Requirements

Introduction

This document contains minimum requirements for a VSIPL compliant library meeting a profile called VSIPL Core, or just Core. This is a companion requirements document to the VSIPL specification. All functions and data types in the Core profile must meet all requirements for functions and data types as defined in the VSIPL specification.

Basic Data Types

This profile is a list of the (minimum) required functions to meet a VSIPL Core profile. Implementation of the profile requires the implementor to support VSIPL data types needed to implement the functions.

To meet the minimum requirement for a VSIPL Core profile the implementor need only support one float type, and one signed integer type.

The following scalar data types are listed as a convenience. In order to implement the functions of the Core profile in accordance with the VSIPL specification these scalars must be defined. Note that *_f* and *_i* denote some implementation dependent float type and some implementation dependent (signed) integer type respectively.

Data Type	Comments
<code>vsip_scalar_vi</code>	Scalar vector index.
<code>vsip_scalar_mi</code>	Scalar matrix index.
<code>vsip_scalar_bl</code>	Scalar boolean.
<code>vsip_scalar_f</code>	Only a single float type is needed.
<code>vsip_cscalar_f</code>	Only a single complex float type of precision matching <code>vsip_scalar_f</code> is needed.
<code>vsip_scalar_i</code>	A single signed integer type is needed

Function Profile for Core

Support Functions

All profiles must include `vsip_init` and `vsip_finalize` support functions. In addition, Core must include the following VSIPL support functions.

Block Support

The following set of functions are included for block support in Core.

Block Support		
<i>vsip_blockcreate_f</i>	<i>vsip_blockcreate_i</i>	<i>vsip_cblockcreate_f</i>
<i>vsip_blockbind_f</i>	<i>vsip_blockbind_i</i>	<i>vsip_cblockbind_f</i>
<i>vsip_blockfind_f</i>	<i>vsip_blockfind_i</i>	<i>vsip_cblockfind_f</i>
<i>vsip_blockdestroy_f</i>	<i>vsip_blockdestroy_i</i>	<i>vsip_cblockdestroy_f</i>
<i>vsip_blockadmit_f</i>	<i>vsip_blockadmit_i</i>	<i>vsip_cblockadmit_f</i>
<i>vsip_blockrelease_f</i>	<i>vsip_blockrelease_i</i>	<i>vsip_cblockrelease_f</i>
<i>vsip_blockrebind_f</i>	<i>vsip_blockrebind_i</i>	<i>vsip_cblockrebind_f</i>
<i>vsip_blockcreate_bl</i>	<i>vsip_blockcreate_vi</i>	<i>vsip_blockcreate_mi</i>
<i>vsip_blockbind_bl</i>	<i>vsip_blockbind_vi</i>	<i>vsip_blockbind_mi</i>
<i>vsip_blockfind_bl</i>	<i>vsip_blockfind_vi</i>	<i>vsip_blockfind_mi</i>
<i>vsip_blockdestroy_bl</i>	<i>vsip_blockdestroy_vi</i>	<i>vsip_blockdestroy_mi</i>
<i>vsip_blockadmit_bl</i>	<i>vsip_blockadmit_vi</i>	<i>vsip_blockadmit_mi</i>
<i>vsip_blockrelease_bl</i>	<i>vsip_blockrelease_vi</i>	<i>vsip_blockrelease_mi</i>
<i>vsip_blockrebind_bl</i>	<i>vsip_blockrebind_vi</i>	<i>vsip_blockrebind_mi</i>
<i>vsip_cstorage</i>		

Total functions are 43 for block support.

Vector View Support

The following set of functions are included for vector view support in Core.

Vector View Support Functions		
<i>vsip_vbind_f</i>	<i>vsip_vbind_i</i>	<i>vsip_cvbind_f</i>
<i>vsip_vcreate_f</i>	<i>vsip_vcreate_i</i>	<i>vsip_cvcreate_f</i>
<i>vsip_vdestroy_f</i>	<i>vsip_vdestroy_i</i>	<i>vsip_cvdestroy_f</i>
<i>vsip_valldestroy_f</i>	<i>vsip_valldestroy_i</i>	<i>vsip_cvalldestroy_f</i>
<i>vsip_vcloneview_f</i>	<i>vsip_vcloneview_i</i>	<i>vsip_cvcloneview_f</i>
		<i>vsip_vrealview_f</i>
		<i>vsip_vimagview_f</i>
<i>vsip_vsubview_f</i>	<i>vsip_vsubview_i</i>	<i>vsip_cvsubview_f</i>
<i>vsip_vgetattrib_f</i>	<i>vsip_vgetattrib_i</i>	<i>vsip_cvgetattrib_f</i>

Vector View Support Functions		
<i>vsip_vgetblock_f</i>	<i>vsip_vgetblock_i</i>	<i>vsip_cvgetblock_f</i>
<i>vsip_vgetoffset_f</i>	<i>vsip_vgetoffset_i</i>	<i>vsip_cvgetoffset_f</i>
<i>vsip_vgetstride_f</i>	<i>vsip_vgetstride_i</i>	<i>vsip_cvgetstride_f</i>
<i>vsip_vgetlength_f</i>	<i>vsip_vgetlength_i</i>	<i>vsip_cvgetlength_f</i>
<i>vsip_vputattrib_f</i>	<i>vsip_vputattrib_i</i>	<i>vsip_cvputattrib_f</i>
<i>vsip_vputoffset_f</i>	<i>vsip_vputoffset_i</i>	<i>vsip_cvputoffset_f</i>
<i>vsip_vputstride_f</i>	<i>vsip_vputstride_i</i>	<i>vsip_cvputstride_f</i>
<i>vsip_vputlength_f</i>	<i>vsip_vputlength_i</i>	<i>vsip_cvputlength_f</i>
<i>vsip_vget_f</i>	<i>vsip_vget_i</i>	<i>vsip_cvget_f</i>
<i>vsip_vput_f</i>	<i>vsip_vput_i</i>	<i>vsip_cvput_f</i>
<i>vsip_vbind_bl</i>	<i>vsip_vbind_vi</i>	<i>vsip_vbind_mi</i>
<i>vsip_vcreate_bl</i>	<i>vsip_vcreate_vi</i>	<i>vsip_vcreate_mi</i>
<i>vsip_vdestroy_bl</i>	<i>vsip_vdestroy_vi</i>	<i>vsip_vdestroy_mi</i>
<i>vsip_valldestroy_bl</i>	<i>vsip_valldestroy_vi</i>	<i>vsip_valldestroy_mi</i>
<i>vsip_vcloneview_bl</i>	<i>vsip_vcloneview_vi</i>	<i>vsip_vcloneview_mi</i>
<i>vsip_vsubview_bl</i>	<i>vsip_vsubview_vi</i>	<i>vsip_vsubview_mi</i>
<i>vsip_vgetattrib_bl</i>	<i>vsip_vgetattrib_vi</i>	<i>vsip_vgetattrib_mi</i>
<i>vsip_vgetblock_bl</i>	<i>vsip_vgetblock_vi</i>	<i>vsip_vgetblock_mi</i>
<i>vsip_vgetoffset_bl</i>	<i>vsip_vgetoffset_vi</i>	<i>vsip_vgetoffset_mi</i>
<i>vsip_vgetstride_bl</i>	<i>vsip_vgetstride_vi</i>	<i>vsip_vgetstride_mi</i>
<i>vsip_vgetlength_bl</i>	<i>vsip_vgetlength_vi</i>	<i>vsip_vgetlength_mi</i>
<i>vsip_vputattrib_bl</i>	<i>vsip_vputattrib_vi</i>	<i>vsip_vputattrib_mi</i>
<i>vsip_vputoffset_bl</i>	<i>vsip_vputoffset_vi</i>	<i>vsip_vputoffset_mi</i>
<i>vsip_vputstride_bl</i>	<i>vsip_vputstride_vi</i>	<i>vsip_vputstride_mi</i>
<i>vsip_vputlength_bl</i>	<i>vsip_vputlength_vi</i>	<i>vsip_vputlength_mi</i>
<i>vsip_vget_bl</i>	<i>vsip_vget_vi</i>	<i>vsip_vget_mi</i>
<i>vsip_vput_bl</i>	<i>vsip_vput_vi</i>	<i>vsip_vput_mi</i>

Total functions are 104 for vector view support

Vector View Copy Support

The following vector copy functions are included as part of the VS IPL Core Profile.

Vector View Copy Support	
<i>vsip_vcopy_f_f</i>	<i>vsip_vcopy_vi_i</i>
<i>vsip_vcopy_f_i</i>	<i>vsip_vcopy_mi_mi</i>
<i>vsip_vcopy_i_f</i>	<i>vsip_vcopy_bl_bl</i>
<i>vsip_cvcopy_f_f</i>	<i>vsip_vcopy_bl_f</i>
<i>vsip_vcopy_i_i</i>	<i>vsip_vcopy_f_bl</i>
<i>vsip_vcopy_vi_vi</i>	
<i>vsip_vcopy_i_vi</i>	

Total functions are 12 for copy support

Matrix View Support

The following matrix view support functions are included in the VS IPL Core profile.

Matrix View Support Functions	
<i>vsip_mbind_f</i>	<i>vsip_cmbind_f</i>
<i>vsip_mcreate_f</i>	<i>vsip_cmcreate_f</i>
<i>vsip_mdestroy_f</i>	<i>vsip_cmdestroy_f</i>
<i>vsip_malldestroy_f</i>	<i>vsip_cmalldestroy_f</i>
<i>vsip_mcloneview_f</i>	<i>vsip_cmcloneview_f</i>
<i>vsip_msubview_f</i>	<i>vsip_cmsubview_f</i>
	<i>vsip_mrealview_f</i>
	<i>vsip_mimagview_f</i>
<i>vsip_mrowview_f</i>	<i>vsip_cmrowview_f</i>
<i>vsip_mcolview_f</i>	<i>vsip_cmcolview_f</i>
<i>vsip_mdiagview_f</i>	<i>vsip_cmdiagview_f</i>
<i>vsip_mtransview_f</i>	<i>vsip_cmtransview_f</i>
<i>vsip_mgetattrib_f</i>	<i>vsip_cmgetattrib_f</i>
<i>vsip_mgetblock_f</i>	<i>vsip_cmgetblock_f</i>
<i>vsip_mgetoffset_f</i>	<i>vsip_cmgetoffset_f</i>
<i>vsip_mgetrowstride_f</i>	<i>vsip_cmgetrowstride_f</i>
<i>vsip_mgetcolstride_f</i>	<i>vsip_cmgetcolstride_f</i>

Matrix View Support Functions	
<code>vsip_mgetrowlength_f</code>	<code>vsip_cmgetrowlength_f</code>
<code>vsip_mgetcollength_f</code>	<code>vsip_cmgetcollength_f</code>
<code>vsip_mputattrib_f</code>	<code>vsip_cmputattrib_f</code>
<code>vsip_mputoffset_f</code>	<code>vsip_cmputoffset_f</code>
<code>vsip_mputrowstride_f</code>	<code>vsip_cmputrowstride_f</code>
<code>vsip_mputcolstride_f</code>	<code>vsip_cmputcolstride_f</code>
<code>vsip_mputrowlength_f</code>	<code>vsip_cmputrowlength_f</code>
<code>vsip_mputcollength_f</code>	<code>vsip_cmputcollength_f</code>
<code>vsip_mget_f</code>	<code>vsip_cmget_f</code>
<code>vsip_mput_f</code>	<code>vsip_cmput_f</code>

Total functions are 52 for matrix view support.

Matrix View Copy Support

The following matrix copy functions are included in the VSIPL Core profile.

<code>vsip_mcopy_f_f</code>	<code>vsip_cmcopy_f_f</code>
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Total functions are 2 for matrix copy support.

Scalar functions

The following functions are included for real scalar support in the VSIPL Core profile.

Real Scalar Functions	
<code>vsip_matindex_mi</code>	<code>vsip_MATINDEX_mi</code>
<code>vsip_rowindex_mi</code>	<code>vsip_colindex_mi</code>

The following functions are included for complex scalar support in the VSIPL Core profile.

Complex Scalar Functions		
<code>vsip_arg_f</code>		
<code>vsip_cadd_f</code>	<code>vsip_rcadd_f</code>	
<code>vsip_conj_f</code>		
<code>vsip_cdiv_f</code>		<code>vsip_crdiv_f</code>
<code>vsip_cexp_f</code>		

Complex Scalar Functions		
<i>vsip_cjmul_f</i>		
<i>vsip_cmag_f</i>		
<i>vsip_cmagsq_f</i>		
<i>vsip_cmplx_f</i>		
<i>vsip_cmul_f</i>	<i>vsip_rcmul_f</i>	
<i>vsip_cneg_f</i>		
<i>vsip_crecip_f</i>		
<i>vsip_csub_f</i>	<i>vsip_rsub_f</i>	<i>vsip_crsub_f</i>
<i>vsip_csqrt_f</i>		
<i>vsip_imag_f</i>		
<i>vsip_polar_f</i>		
<i>vsip_real_f</i>		
<i>vsip_rect_f</i>		
<i>vsip_CADD_f</i>	<i>vsip_RCADD_f</i>	
<i>vsip_CONJ_f</i>		
<i>vsip_CDIV_f</i>		<i>vsip_CRDIV_f</i>
<i>vsip_CEXP_f</i>		
<i>vsip_CJMUL_f</i>		
<i>vsip_CMUL_f</i>	<i>vsip_RCMUL_f</i>	
<i>vsip_CNEG_f</i>		
<i>vsip_CRECIP_f</i>		
<i>vsip_CSUB_f</i>	<i>vsip_RCSUB_f</i>	<i>vsip_CRSUB_f</i>
<i>vsip_CSQRT_f</i>		
<i>vsip_CMPLX_f</i>		

The following functions are included for random number scalar support in the VS IPL Core profile.

Scalar Random Functions	
<i>vsip_randu_f</i>	<i>vsip_crandu_f</i>
<i>vsip_randn_f</i>	<i>vsip_crandn_f</i>

Total functions are 47 for scalar support.

Vector Elementwise Functions

The following vector and elementwise functions are included in the VS IPL Core profile.

Float Vector Elementwise Functions		
Real Arguments	Complex Arguments	Real and Complex Arguments
<i>vsip_vacos_f</i>		
<i>vsip_vasin_f</i>		
<i>vsip_vatan_f</i>		
<i>vsip_vatan2_f</i>		
<i>vsip_vcos_f</i>		
<i>vsip_vexp_f</i>	<i>vsip_cvexp_f</i>	
<i>vsip_vexpl0_f</i>		
<i>vsip_vlog_f</i>		
<i>vsip_vlog10_f</i>		
<i>vsip_vsin_f</i>		
<i>vsip_vsqrt_f</i>	<i>vsip_cvsqrt_f</i>	
<i>vsip_vtan_f</i>		
	<i>vsip_cvconj_f</i>	
	<i>vsip_veuler_f</i>	
<i>vsip_vmag_f</i>	<i>vsip_cvmag_f</i>	
	<i>vsip_vcmagsq_f</i>	
<i>vsip_vmeanval_f</i>	<i>vsip_cvmeanval_f</i>	
<i>vsip_vmeansqval_f</i>	<i>vsip_cvmeansqval_f</i>	
<i>vsip_vneg_f</i>	<i>vsip_cvneg_f</i>	
<i>vsip_vrecip_f</i>	<i>vsip_cvrecip_f</i>	
<i>vsip_vrsqrt_f</i>		
<i>vsip_vsq_f</i>		
<i>vsip_vsumval_f</i>		
<i>vsip_vsumsqval_f</i>		
<i>vsip_vadd_f</i>	<i>vsip_cvadd_f</i>	<i>vsip_rcvadd_f</i>

Float Vector Elementwise Functions		
Real Arguments	Complex Arguments	Real and Complex Arguments
<i>vsip_svadd_f</i>	<i>vsip_csvadd_f</i>	<i>vsip_rscvadd_f</i>
	<i>vsip_cvjdot_f</i>	
<i>vsip_vdiv_f</i>	<i>vsip_cvdiv_f</i>	
<i>vsip_svdiv_f</i>		
<i>vsip_vdot_f</i>	<i>vsip_cvdot_f</i>	
<i>vsip_vhypot_f</i>		
	<i>vsip_cvjmul_f</i>	
<i>vsip_vmul_f</i>	<i>vsip_cvmul_f</i>	<i>vsip_rcvmul_f</i>
<i>vsip_vmmul_f</i>	<i>vsip_cvmmul_f</i>	<i>vsip_rvcmmul_f</i>
<i>vsip_svmul_f</i>	<i>vsip_csvmul_f</i>	<i>vsip_rscvmul_f</i>
<i>vsip_vsub_f</i>	<i>vsip_cvsub_f</i>	<i>vsip_rcvsub_f</i>
		<i>vsip_crvsub_f</i>
<i>vsip_svsub_f</i>	<i>vsip_csvsub_f</i>	<i>vsip_rscvsub_f</i>
<i>vsip_vam_f</i>	<i>vsip_cvam_f</i>	
<i>vsip_vma_f</i>	<i>vsip_cvma_f</i>	
<i>vsip_vmsa_f</i>	<i>vsip_cvmsa_f</i>	
<i>vsip_vmsb_f</i>	<i>vsip_cvmsb_f</i>	
<i>vsip_vsam_f</i>	<i>vsip_cvsam_f</i>	
<i>vsip_vsbm_f</i>	<i>vsip_cvsbm_f</i>	
<i>vsip_vsma_f</i>	<i>vsip_cvsma_f</i>	
<i>vsip_vsmsa_f</i>	<i>vsip_cvsmsa_f</i>	
<i>vsip_vleg_f</i>		
<i>vsip_vlge_f</i>		
<i>vsip_vlgt_f</i>		
<i>vsip_vlle_f</i>		
<i>vsip_vllt_f</i>		
<i>vsip_vlne_f</i>		
<i>vsip_vclip_f</i>		

Float Vector Elementwise Functions		
Real Arguments	Complex Arguments	Real and Complex Arguments
<i>vsip_vinvclip_f</i>		
<i>vsip_vmax_f</i>		
<i>vsip_vmaxmg_f</i>		
	<i>vsip_vcmaxmgsq_f</i>	
	<i>vsip_vcmaxmgsqval_f</i>	
<i>vsip_vmaxmgval_f</i>		
<i>vsip_vmaxval_f</i>		
<i>vsip_vmin_f</i>		
<i>vsip_vminmg_f</i>		
	<i>vsip_vcminmgsq_f</i>	
	<i>vsip_vcminmgsqval_f</i>	
<i>vsip_vminmgval_f</i>		
<i>vsip_vminval_f</i>		
<i>vsip_vfill_f</i>	<i>vsip_cvfill_f</i>	
<i>vsip_vramp_f</i>		
	<i>vsip_vcplx_f</i>	
<i>vsip_vexpoavg_f</i>	<i>vsip_cvexpoavg_f</i>	
<i>vsip_vgather_f</i>	<i>vsip_cvgather_f</i>	
	<i>vsip_vimag_f</i>	
	<i>vsip_cvmodulate_f</i>	<i>vsip_vmodulate_f</i>
	<i>vsip_vpolar_f</i>	
	<i>vsip_vreal_f</i>	
	<i>vsip_vrect_f</i>	
<i>vsip_vscatter_f</i>	<i>vsip_cvscatter_f</i>	
<i>vsip_vswap_f</i>	<i>vsip_cvswap_f</i>	

The following functions are required for random support in the VSIPL Core profile.

Vector Elementwise Random	
<i>vsip_vrandu_f</i>	<i>vsip_cvrandu_f</i>
<i>vsip_vrandn_f</i>	<i>vsip_cvrandn_f</i>
<i>vsip_randcreate</i>	<i>vsip_randdestroy</i>

The following integer functions are required to support integer calculation in the VSIPL Core profile.

Integer Vector and Elementwise Functions	
<i>vsip_vmag_i</i>	<i>vsip_vclip_i</i>
<i>vsip_vneg_i</i>	<i>vsip_vinvclip_i</i>
<i>vsip_vadd_i</i>	<i>vsip_vand_i</i>
<i>vsip_svadd_i</i>	<i>vsip_vnot_i</i>
<i>vsip_vmul_i</i>	<i>vsip_vor_i</i>
<i>vsip_svmul_i</i>	<i>vsip_vxor_i</i>
<i>vsip_vsub_i</i>	<i>vsip_vfill_i</i>
<i>vsip_svsub_i</i>	<i>vsip_vramp_i</i>
	<i>vsip_vgather_i</i>
	<i>vsip_vscatter_i</i>

The following boolean functions are required for boolean support in the VSIPL Core profile.

Boolean Vector and Elementwise Functions	
<i>vsip_vsumval_bl</i>	<i>vsip_vand_bl</i>
<i>vsip_valltrue_bl</i>	<i>vsip_vnot_bl</i>
<i>vsip_vanytrue_bl</i>	<i>vsip_vor_bl</i>
<i>vsip_vindexbool</i>	<i>vsip_vxor_bl</i>

A total of 147 functions in vector and elementwise

Signal Processing Functions

Core requires support for the following signal processing functions.

Fast Fourier Transform		
<i>vsip_ccffftop_f</i>	<i>vsip_ccffftop_create_f</i>	
<i>vsip_ccffftip_f</i>	<i>vsip_ccffftip_create_f</i>	
<i>vsip_rcffftop_f</i>	<i>vsip_rcffftop_create_f</i>	<i>vsip_fft_getattr_f</i>
<i>vsip_crffftop_f</i>	<i>vsip_crffftop_create_f</i>	<i>vsip_fft_destroy_f</i>
<i>vsip_ccfftmop_f</i>	<i>vsip_ccfftmop_create_f</i>	
<i>vsip_ccfftmip_f</i>	<i>vsip_ccfftmip_create_f</i>	
<i>vsip_rcfftmop_f</i>	<i>vsip_rcfftmop_create_f</i>	<i>vsip_fftm_getattr_f</i>
<i>vsip_crfftmop_f</i>	<i>vsip_crfftmop_create_f</i>	<i>vsip_fftm_destroy_f</i>

Window Creation Functions
<i>vsip_vcreate_hanning_f</i>
<i>vsip_vcreate_blackman_f</i>
<i>vsip_vcreate_kaiser_f</i>
<i>vsip_vcreate_cheby_f</i>

FIR Filter Functions	
<i>vsip_fir_create_f</i>	<i>vsip_cfir_create_f</i>
<i>vsip_firflt_f</i>	<i>vsip_cfirflt_f</i>
<i>vsip_fir_destroy_f</i>	<i>vsip_cfir_destroy_f</i>
<i>vsip_fir_getattr_f</i>	<i>vsip_cfir_getattr_f</i>
Convolution Functions	
<i>vsip_convld_create_f</i>	
<i>vsip_convolveld_f</i>	
<i>vsip_convld_destroy_f</i>	
<i>vsip_convld_getattr_f</i>	

Correlation Functions	
<code>vsip_corrld_create_f</code>	<code>vsip_ccorrld_create_f</code>
<code>vsip_correlateld_f</code>	<code>vsip_ccorrelateld_f</code>
<code>vsip_corrld_destroy_f</code>	<code>vsip_ccorrld_destroy_f</code>
<code>vsip_corrld_getattr_f</code>	<code>vsip_ccorrld_getattr_f</code>

Histogram Function
<code>vsip_vhisto_f</code>

A total of 45 functions in Signal Processing

Linear Algebra Functions

Core requires the following functions for linear algebra manipulation.

Matrix Products		
<code>vsip_vmprod_f</code>	<code>vsip_mprodt_f</code>	<code>vsip_cmprodt_f</code>
<code>vsip_cvmprod_f</code>		<code>vsip_cmprodh_f</code>
<code>vsip_mvprod_f</code>	<code>vsip_mprod_f</code>	<code>vsip_cmprod_f</code>
<code>vsip_cmvprod_f</code>		<code>vsip_cmprodj_f</code>
Matrix Transposes		
<code>vsip_mtrans_f</code>		<code>vsip_cmtrans_f</code>
		<code>vsip_cmherm_f</code>
General Matrix Product and Sum and Special Matrix Products		
<code>vsip_gemp_f</code>		<code>vsip_cgemp_f</code>
<code>vsip_gems_f</code>		<code>vsip_cgems_f</code>
<code>vsip_vouter_f</code>		<code>vsip_cvouter_f</code>
LU Decomposition		
<code>vsip_lud_create_f</code>		<code>vsip_clud_create_f</code>
<code>vsip_lud_f</code>		<code>vsip_clud_f</code>
<code>vsip_lud_getattr_f</code>		<code>vsip_clud_getattr_f</code>
<code>vsip_lusol_f</code>		<code>vsip_clusol_f</code>
<code>vsip_lud_destroy_f</code>		<code>vsip_clud_destroy_f</code>

Cholesky	
<i>vsip_chold_f</i>	<i>vsip_cchold_f</i>
<i>vsip_chold_create_f</i>	<i>vsip_cchold_create_f</i>
<i>vsip_cholsol_f</i>	<i>vsip_ccholsol_f</i>
<i>vsip_chold_getattr_f</i>	<i>vsip_cchold_getattr_f</i>
<i>vsip_chold_destroy_f</i>	<i>vsip_cchold_destroy_f</i>
QRD	
<i>vsip_qrd_f</i>	<i>vsip_cqrd_f</i>
<i>vsip_qrd_create_f</i>	<i>vsip_cqrd_create_f</i>
<i>vsip_qrsol_f</i>	<i>vsip_cqrsol_f</i>
<i>vsip_qrdprodq_f</i>	<i>vsip_cqrdprodq_f</i>
<i>vsip_qrdsolr_f</i>	<i>vsip_cqrdsolr_f</i>
<i>vsip_qrd_getattr_f</i>	<i>vsip_cqrd_getattr_f</i>
<i>vsip_qrd_destroy_f</i>	<i>vsip_cqrd_destroy_f</i>
Special Solvers	
<i>vsip_toepsol_f</i>	<i>vsip_ctoepsol_f</i>
<i>vsip_covsol_f</i>	<i>vsip_ccovsol_f</i>
<i>vsip_llsqsol_f</i>	<i>vsip_cllsqsol_f</i>

A total of required 59 functions in Linear Algebra.

A total of 513 functions are in the VSIPL Core Profile.