

2.1 Schema of L2A GIPP AC FILE

GIPP for the Atmospheric Correction on Expert Level are separated from the standard User level and are collected in a different file, named L2A_CAL_AC_GIPP.xml. Whereas L2A_GIPP.xml is a pure user configuration file and in this way should be easily available for a standard user the following configuration should be primarily performed and tested by the members of the Expert Support Laboratory, as wrong configurations might lead to heavy performance artefacts.

schema location: [L2A_CAL_AC_GIPP.xsd](#)

Elements

[ACL_Prio_1](#)
[ACL_Prio_2](#)

[ACL_Prio_3](#)

[Band_List](#)

[Calibration](#)

[Flags](#)

[FWHM](#)

[Level-2A_CAL_AC_Ground_Image_Processing_Parameter](#)

[Lib_Dir](#)

[References](#)

[Resolution](#)

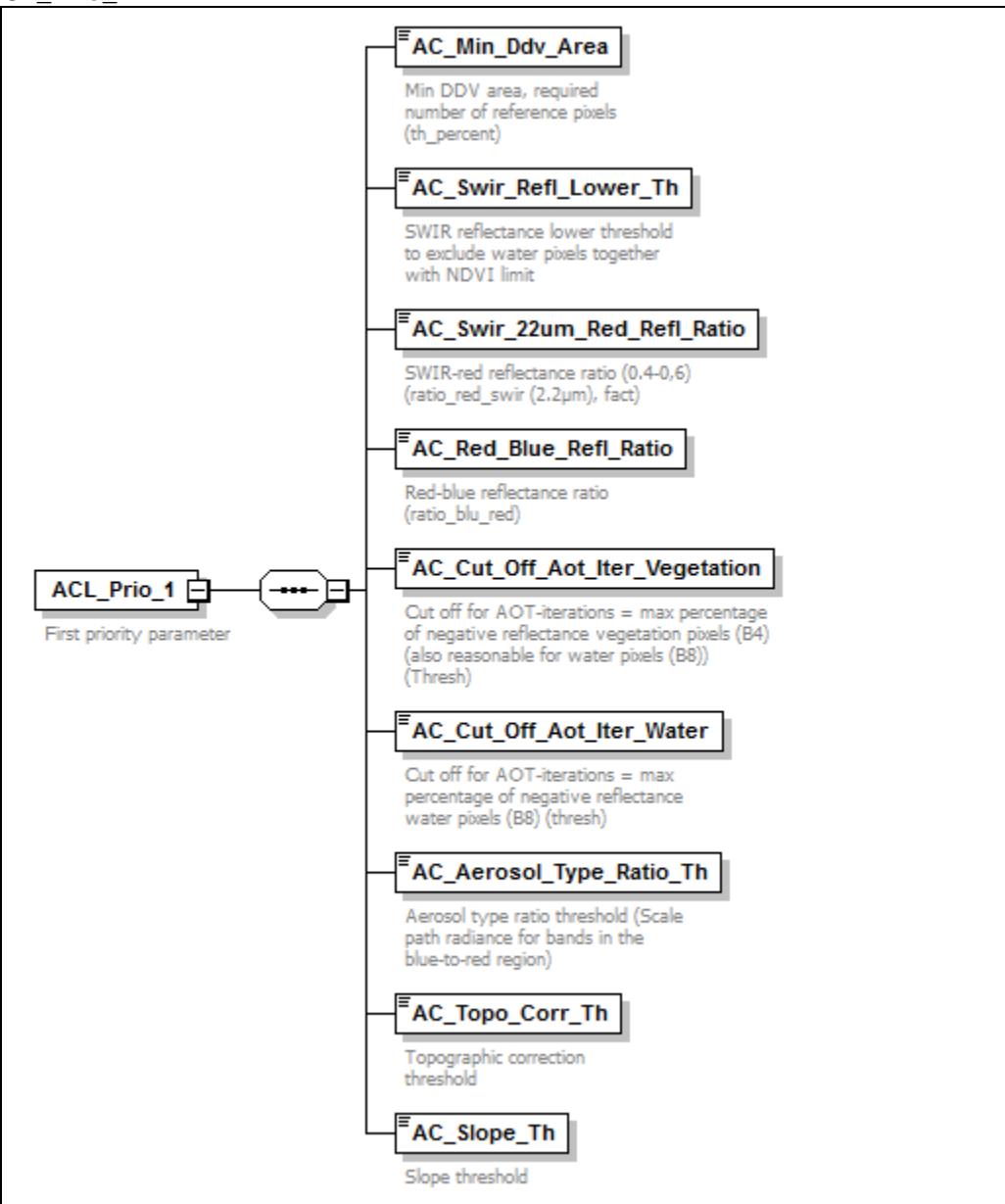
[Sensor](#)

[wavelength](#)

Simple types

[ST_wavelength](#)

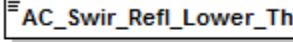
element ACL_Prio_1

diagram	
properties	content complex
children	AC_Min_Ddv_Area AC_Swir_Refi_Lower_Th AC_Swir_22um_Red_Refi_Ratio AC_Red_Blue_Refi_Ratio AC_Cut_Off_Aot_Iter_Vegetation AC_Cut_Off_Aot_Iter_Water AC_Aerosol_Type_Ratio_Th AC_Slope_Th
used by	element Level-2A CAL AC Ground Image Processing Parameter
annotation	documentation First priority parameter

element ACL_Prio_1/AC_Min_Ddv_Area

diagram	
	Min DDV area, required number of reference pixels (th_percent)
type	restriction of xs:float
properties	content simple default 2.0
facets	Kind Value Annotation minInclusive 0 maxInclusive 100
annotation	documentation Min DDV area, required number of reference pixels (th_percent)

element ACL_Prio_1/AC_Swir_Refi_Lower_Th

diagram	
	SWIR reflectance lower threshold to exclude water pixels together with NDVI limit
type	restriction of xs:float
properties	content simple default 0.1
facets	Kind Value Annotation minInclusive 0 maxInclusive 1
annotation	documentation SWIR reflectance lower threshold to exclude water pixels together with NDVI limit

element ACL_Prio_1/AC_Swir_22um_Red_Refi_Ratio

diagram	
	SWIR-red reflectance ratio (0.4-0.6) (ratio_red_swir (2.2μm), fact)
type	restriction of xs:float
properties	content simple default 0.5
facets	Kind Value Annotation minInclusive 0.4 maxInclusive 0.6
annotation	documentation SWIR-red reflectance ratio (0.4-0.6) (ratio_red_swir (2.2μm), fact)

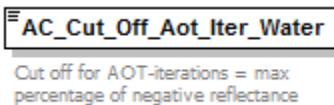
element ACL_Prio_1/AC_Red_Blue_Refl_Ratio

diagram	
type	restriction of xs:float
properties	content simple default 0.5
facets	Kind Value Annotation minInclusive -1 maxInclusive 1
annotation	documentation Red-blue reflectance ratio (ratio_blu_red)

element ACL_Prio_1/AC_Cut_Off_Aot_Iter_Vegetation

diagram	
type	restriction of xs:float
properties	content simple default 0.01
facets	Kind Value Annotation minInclusive -1 maxInclusive 1
annotation	documentation Cut off for AOT-iterations = max percentage of negative reflectance vegetation pixels (B4) (also reasonable for water pixels (B8)) (Thresh)

element ACL_Prio_1/AC_Cut_Off_Aot_Iter_Water

diagram	
type	restriction of xs:float
properties	content simple default 0.01
facets	Kind Value Annotation minInclusive -1 maxInclusive 1
annotation	documentation Cut off for AOT-iterations = max percentage of negative reflectance water pixels (B8) (thresh)

element ACL_Prio_1/AC_Aerosol_Type_Ratio_Th

diagram	 AC_Aerosol_Type_Ratio_Th
	Aerosol type ratio threshold (Scale path radiance for bands in the blue-to-red region)
type	restriction of xs:float
properties	content simple default -0.005
facets	Kind Value Annotation minInclusive -1 maxInclusive 1
annotation	documentation Aerosol type ratio threshold (Scale path radiance for bands in the blue-to-red region)

element ACL_Prio_1/AC_Topo_Corr_Th

diagram	 AC_Topo_Corr_Th
	Topographic correction threshold
type	restriction of xs:float
properties	content simple default 0.05
facets	Kind Value Annotation minInclusive 0 maxInclusive 1
annotation	documentation Topographic correction threshold

element ACL_Prio_1/AC_Slope_Th

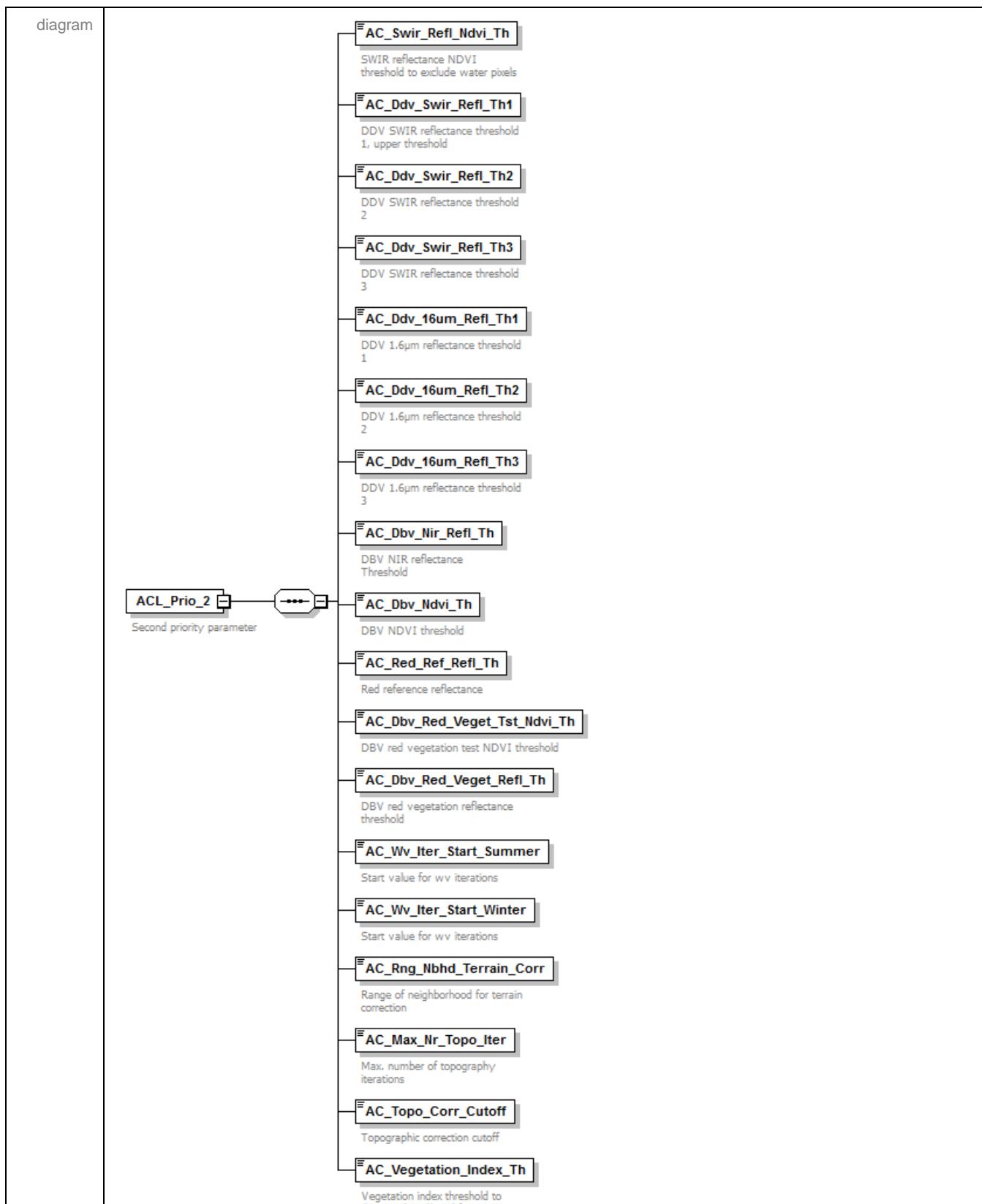
diagram	 AC_Slope_Th
	Slope threshold
type	restriction of xs:float
properties	content simple default 6.0
facets	Kind Value Annotation minInclusive 0 maxInclusive 90
annotation	documentation Slope threshold



Reference: S2-PDGS-MPC-L2A-IODD-V2.4.0
Issue: 01
Date: 03-03-2017

element **ACL_Prio_2**





properties	content complex
children	AC_Swir_RefI_Ndvi_Th AC_Ddv_Swir_RefI_Th1 AC_Ddv_Swir_RefI_Th2 AC_Ddv_Swir_RefI_Th3 AC_Ddv_16um_RefI_Th1 AC_Ddv_16um_RefI_Th2 AC_Ddv_16um_RefI_Th3 AC_DbV_Nir_RefI_Th AC_DbV_Ndvi_Th AC_Red_RefI_Th AC_DbV_Red_Veget_Tst_Ndvi_Th AC_DbV_Red_Veget_RefI_Th AC_Wv_Iter_Start_Summer AC_Wv_Iter_Start_Winter AC_Rng_Nbhd_Terrain_Corr AC_Max_Nr_Topo_Iter AC_Topo_Corr_Cutoff AC_Vegetation_Index_Th
used by	element Level-2A CAL AC Ground Image Processing Parameter
annotation	documentation Second priority parameter

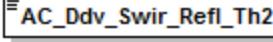
element ACL_Prio_2/AC_Swir_RefI_Ndvi_Th

diagram	 <p>AC_Swir_RefI_Ndvi_Th</p> <p>SWIR reflectance NDVI threshold to exclude water pixels</p>
type	restriction of xs:float
properties	content simple default 0.1
facets	Kind Value Annotation minInclusive 0 maxInclusive 1
annotation	documentation SWIR reflectance NDVI threshold to exclude water pixels

element ACL_Prio_2/AC_Ddv_Swir_RefI_Th1

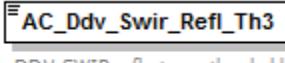
diagram	 <p>AC_Ddv_Swir_RefI_Th1</p> <p>DDV SWIR reflectance threshold 1, upper threshold</p>
type	restriction of xs:float
properties	content simple default 0.05
facets	Kind Value Annotation minInclusive 0 maxInclusive 1
annotation	documentation DDV SWIR reflectance threshold 1, upper threshold

element ACL_Prio_2/AC_Ddv_Swir_RefI_Th2

diagram	 <p>AC_Ddv_Swir_RefI_Th2</p> <p>DDV SWIR reflectance threshold 2</p>
type	restriction of xs:float
properties	content simple default 0.1

facets	Kind minInclusive 0 maxInclusive 1
annotation	documentation DDV SWIR reflectance threshold 2

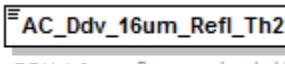
element ACL_Prio_2/AC_Ddv_Swir_RefI_Th3

diagram	 DDV SWIR reflectance threshold 3
type	restriction of xs:float
properties	content simple default 0.12
facets	Kind minInclusive 0 maxInclusive 1
annotation	documentation DDV SWIR reflectance threshold 3

element ACL_Prio_2/AC_Ddv_16um_RefI_Th1

diagram	 DDV 1.6μm reflectance threshold 1
type	restriction of xs:float
properties	content simple default 0.1
facets	Kind minInclusive 0 maxInclusive 1
annotation	documentation DDV 1.6μm reflectance threshold 1

element ACL_Prio_2/AC_Ddv_16um_RefI_Th2

diagram	 DDV 1.6μm reflectance threshold 2
type	restriction of xs:float
properties	content simple default 0.15
facets	Kind minInclusive 0 maxInclusive 1
annotation	documentation DDV 1.6μm reflectance threshold 2

element ACL_Prio_2/AC_Ddv_16um_Refl_Th3

diagram	
type	restriction of xs:float
properties	content simple default 0.18
facets	Kind Value Annotation minInclusive 0 maxInclusive 1
annotation	documentation DDV 1.6μm reflectance threshold 3

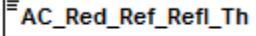
element ACL_Prio_2/AC_Dbv_Nir_Refl_Th

diagram	
type	restriction of xs:float
properties	content simple default 0.35
facets	Kind Value Annotation minInclusive 0 maxInclusive 1
annotation	documentation DBV NIR reflectance Threshold

element ACL_Prio_2/AC_Dbv_Ndvi_Th

diagram	
type	restriction of xs:float
properties	content simple default 0.66
facets	Kind Value Annotation minInclusive 0 maxInclusive 1
annotation	documentation DBV NDVI threshold

element ACL_Prio_2/AC_Red_Ref_Refl_Th

diagram	 Red reference reflectance
type	restriction of xs:float
properties	content simple default 0.02
facets	Kind Value Annotation minInclusive 0 maxInclusive 1
annotation	documentation Red reference reflectance

element ACL_Prio_2/AC_DbV_Red_Veget_Tst_Ndvi_Th

diagram	 DBV red vegetation test NDVI threshold
type	restriction of xs:float
properties	content simple default 0.45
facets	Kind Value Annotation minInclusive 0 maxInclusive 1
annotation	documentation DBV red vegetation test NDVI threshold

element ACL_Prio_2/AC_DbV_Red_Veget_RefI_Th

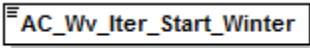
diagram	 DBV red vegetation reflectance threshold
type	restriction of xs:float
properties	content simple default 0.15
facets	Kind Value Annotation minInclusive 0 maxInclusive 1
annotation	documentation DBV red vegetation reflectance threshold

element ACL_Prio_2/AC_Wv_Iter_Start_Summer

diagram	 Start value for wv iterations
type	restriction of xs:float

properties	content simple default 1.0
facets	Kind Value Annotation minInclusive 0 maxInclusive 5.0
annotation	documentation Start value for wv iterations

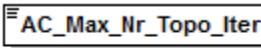
element ACL_Prio_2/AC_Wv_Iter_Start_Winter

diagram	 AC_Wv_Iter_Start_Winter Start value for wv iterations
type	restriction of xs:float
properties	content simple default 0.4
facets	Kind Value Annotation minInclusive 0 maxInclusive 5.0
annotation	documentation Start value for wv iterations

element ACL_Prio_2/AC_Rng_Nbhd_Terrain_Corr

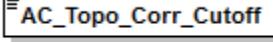
diagram	 AC_Rng_Nbhd_Terrain_Corr Range of neighborhood for terrain correction
type	restriction of xs:float
properties	content simple default 0.5
facets	Kind Value Annotation minInclusive 0 maxInclusive 1
annotation	documentation Range of neighborhood for terrain correction

element ACL_Prio_2/AC_Max_Nr_Topo_Iter

diagram	 AC_Max_Nr_Topo_Iter Max. number of topography iterations
type	restriction of xs:float
properties	content simple
facets	Kind Value Annotation minInclusive 0 maxInclusive 9

annotation	documentation Max. number of topography iterations
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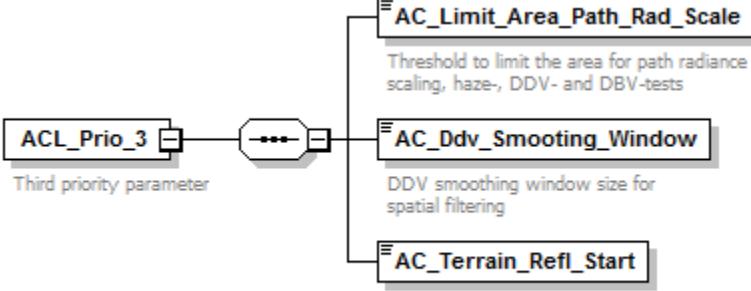
element ACL_Prio_2/AC_Topo_Corr_Cutoff

diagram	 <p>Topographic correction cutoff</p>									
type	restriction of xs:float									
properties	content simple									
facets	<table> <thead> <tr> <th>Kind</th> <th>Value</th> <th>Annotation</th> </tr> </thead> <tbody> <tr> <td>minInclusive</td> <td>0.0</td> <td></td> </tr> <tr> <td>maxInclusive</td> <td>10.0</td> <td></td> </tr> </tbody> </table>	Kind	Value	Annotation	minInclusive	0.0		maxInclusive	10.0	
Kind	Value	Annotation								
minInclusive	0.0									
maxInclusive	10.0									
annotation	documentation Topographic correction cutoff									

element ACL_Prio_2/AC_Vegetation_Index_Th

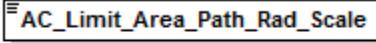
diagram	 <p>Vegetation index threshold to distinguish soil/sand from vegetation</p>									
type	restriction of xs:float									
properties	content simple default 3.0									
facets	<table> <thead> <tr> <th>Kind</th> <th>Value</th> <th>Annotation</th> </tr> </thead> <tbody> <tr> <td>minInclusive</td> <td>1</td> <td></td> </tr> <tr> <td>maxInclusive</td> <td>10</td> <td></td> </tr> </tbody> </table>	Kind	Value	Annotation	minInclusive	1		maxInclusive	10	
Kind	Value	Annotation								
minInclusive	1									
maxInclusive	10									
annotation	documentation Vegetation index threshold to distinguish soil/sand from vegetation									

element ACL_Prio_3

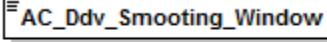
diagram	 <p>Third priority parameter</p>
properties	content complex
children	AC_Limit_Area_Path_Rad_Scale AC_Ddv_Smoothing_Window AC_Terrain_Refl_Start

used by	element Level-2A CAL AC Ground Image Processing Parameter
annotation	documentation Third priority parameter

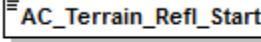
element ACL_Prio_3/AC_Limit_Area_Path_Rad_Scale

diagram	 <p>Threshold to limit the area for path radiance scaling, haze-, DDV- and DBV-tests</p>
type	restriction of xs:float
properties	content simple default 10
facets	Kind Value Annotation minInclusive 0 maxInclusive 90
annotation	documentation Threshold to limit the area for path radiance scaling, haze-, DDV- and DBV-tests

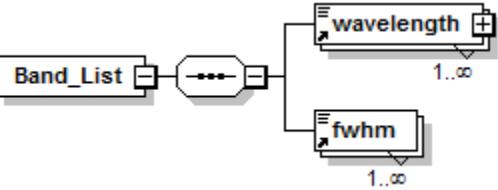
element ACL_Prio_3/AC_Ddv_Smooting_Window

diagram	 <p>DDV smoothing window size for spatial filtering</p>
type	restriction of xs:float
properties	content simple default 3.0
facets	Kind Value Annotation minInclusive 0 maxInclusive 10
annotation	documentation DDV smoothing window size for spatial filtering

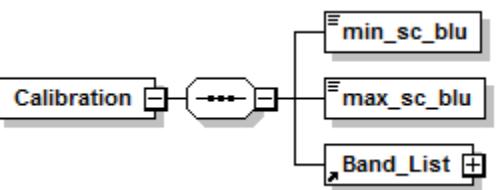
element ACL_Prio_3/AC_Terrain_Refl_Start

diagram	 <p>Start value for terrain reflectance at terrain correction</p>
type	restriction of xs:float
properties	content simple default 0.1
facets	Kind Value Annotation minInclusive 0 maxInclusive 1
annotation	documentation Start value for terrain reflectance at terrain correction

element Band_List

diagram	
properties	content complex
children	wavelength fwhm
used by	elements Calibration Resolution

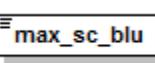
element Calibration

diagram	
properties	content complex
children	min_sc_blu max_sc_blu Band_List
used by	element Sensor

element Calibration/min_sc_blu

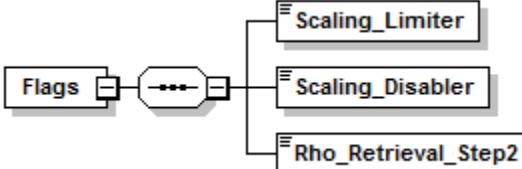
diagram										
type	restriction of xs:float									
properties	content simple									
facets	<table> <thead> <tr> <th>Kind</th> <th>Value</th> <th>Annotation</th> </tr> </thead> <tbody> <tr> <td>minExclusive</td> <td>0</td> <td></td> </tr> <tr> <td>maxExclusive</td> <td>1</td> <td></td> </tr> </tbody> </table>	Kind	Value	Annotation	minExclusive	0		maxExclusive	1	
Kind	Value	Annotation								
minExclusive	0									
maxExclusive	1									

element Calibration/max_sc_blu

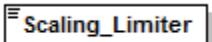
diagram				
type	restriction of xs:float			
properties	content simple			
facets	<table> <thead> <tr> <th>Kind</th> <th>Value</th> <th>Annotation</th> </tr> </thead> </table>	Kind	Value	Annotation
Kind	Value	Annotation		

	minExclusive 1 maxExclusive 2
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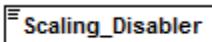
element Flags

diagram	 <pre> graph LR Flags[Flags] --- SL[Scaling_Limiter] SL --- SD[Scaling_Disabler] SL --- RRS[Rho_Retrieval_Step2] </pre>
properties	content complex
children	Scaling Limiter Scaling Disabler Rho Retrieval Step2
used by	element Level-2A CAL AC Ground Image Processing Parameter

element Flags/Scaling_Limiter

diagram	 <pre> graph LR SL[Scaling_Limiter] </pre>
type	xs:boolean
properties	content simple

element Flags/Scaling_Disabler

diagram	 <pre> graph LR SD[Scaling_Disabler] </pre>
type	xs:boolean
properties	content simple

element Flags/Rho_Retrieval_Step2

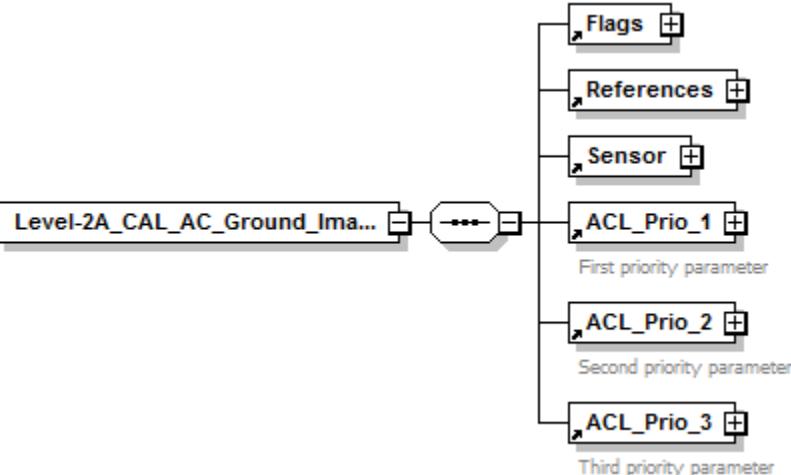
diagram	 <pre> graph LR RRS[Rho_Retrieval_Step2] </pre>
type	xs:boolean
properties	content simple

element fwhm

diagram	 <pre> graph LR fwhm[fwhm] </pre>
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type	restriction of xs:float		
properties	content simple		
used by	element Band List		
facets	Kind	Value	Annotation
	minInclusive	0	
	maxInclusive	1	

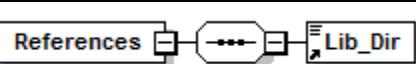
element [Level-2A_CAL_AC_Ground_Image_Processing_Parameter](#)

diagram	 <pre> graph LR L2A[Level-2A_CAL_AC_Ground_Im...] --- Flags[Flags] Flags --- References[References] References --- Sensor[Sensor] Sensor --- ACLP1[ACL_Prio_1] ACLP1 --- P1[First priority parameter] ACLP1 --- ACLP2[ACL_Prio_2] ACLP2 --- P2[Second priority parameter] ACLP2 --- ACLP3[ACL_Prio_3] ACLP3 --- P3[Third priority parameter] </pre>
properties	content complex
children	Flags References Sensor ACL_Prio_1 ACL_Prio_2 ACL_Prio_3

element [Lib_Dir](#)

diagram	 <pre> graph LR LibDir[Lib_Dir] </pre>
type	restriction of xs:string
properties	content simple
used by	References

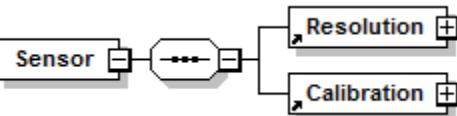
element [References](#)

diagram	 <pre> graph LR References[References] --- LibDir[Lib_Dir] </pre>
properties	content complex
children	Lib_Dir
used by	Level-2A_CAL_AC_Ground_Image_Processing_Parameter

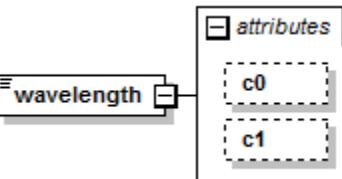
element Resolution

diagram	
properties	content complex
children	Band_List
used by	element Sensor

element Sensor

diagram	
properties	content complex
children	Resolution Calibration
used by	element Level-2A CAL AC Ground Image Processing Parameter

element wavelength

diagram	
type	extension of ST_wavelength
properties	content complex
used by	element Band_List
facets	Kind Value Annotation minInclusive 0 maxInclusive 10
attributes	Name Type Use Default Fixed Annotation c0 derived by: xs:float c1 derived by: xs:float

attribute wavelength/@c0

type	restriction of xs:float
facets	Kind Value Annotation minInclusive 0

	maxInclusive 1
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attribute wavelength/@c1

type	restriction of xs:float		
facets	Kind	Value	Annotation
	minInclusive	0	
	maxInclusive	1	

simpleType ST_wavelength

type	restriction of xs:float		
properties	base	xs:float	
used by	element	wavelength	
facets	Kind	Value	Annotation
	minInclusive	0	
	maxInclusive	10	