

TerraSAR-X

Enhanced Image Product Format Specification

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1. INTRODUCTION

1.1 OBJECTIVE

As an addition to the TerraSAR-X Enhanced Image Product Specification (TSXX-ITD-SPE-0012), this document provides an overview of the TerraSAR-X Enhanced Image Products and details their naming convention, the delivery content and package structure of these products as well as giving a detailed description of their metadata.

1.2 DOCUMENTS

1.2.1 Reference Documents

ID	Title / Reference	Issue. Rev
RD-1	TX-GS-DD-3307: TerraSAR-X Ground Segment Level 1b Product Format Specification	1.3
RD-2	TSXX Value Added Products - Product Types and Naming Conventions, TSXX-ITD-SPE-0002	1.4
RD-3	TSXX PS-VA Element - PS-VA Processor Design Specification, TSXX-JOR-SPE-2001	6.0
RD-4	TSXX – Value Added Products Metadata Structure Specification , TSXX-ITD-SPE-0004	1.7
RD-5	TX-GS-DD-3302: TerraSAR-X Ground Segment Basic Product Specification Document	1.5
RD-6	TerraSAR-X Enhanced Image Product Specification, TSXX-ITD-SPE-0009	Draft 2.1
RD-7	TerraSAR-X Services - Image Product Guide, TSXX-ITD-MA-0009	1.0

1.3 DEFINITIONS AND ABBREVIATIONS

Term	Definition
SSC	Single look slant range complex
MGD	Multilook ground range detected
GEC	Geocoded ellipsoid corrected
EEC	Enhanced ellipsoid corrected
RaN	Radiometric corrected / normalized image
ORI	Orthorectified image
MC	Mosaic
OI	Oriented image
ADM	Ascending / Descending merge
GI	Geo-information
EI	Enhanced image
VA	Value added product
HS	High Resolution SpotLight
SL	SpotLight
SM	StripMap
SC	ScanSAR
PGS	Payload Ground Segment
DLR	Deutsches Zentrum für Luft- und Raumfahrt e.V. / German Aerospace Center
ITD	Infoterra GmbH

2. TERRASAR-X ENHANCED IMAGE PRODUCTS OVERVIEW

In addition to the TerraSAR-X Basic Products (SAR images that can be individually specified by selecting from numerous acquisition and image processing parameters), Infoterra provides value-added basic image products, the so-called TerraSAR-X Enhanced Image (EI) Products. The Basic Image products are described in the TerraSAR-X Basic Product Specification Document and TerraSAR-X Level 1b Product Format Specification [RD-5, RD-1]; this document focuses on the Enhanced Image Products and related Customization Services offered by Infoterra.

The Enhanced Image products are TerraSAR-X image data that provide a higher level of processing than the TerraSAR-X Basic Image products. The following products are available:

- RaN^{SAR} - Radiometrically corrected image
- ORI^{SAR} - Orthorectified image
- MC^{SAR} - Mosaic
- ADM^{SAR} - Ascending/Descending Merge

In addition to these Enhanced Image products Customization Services are offered which include:

- OI^{SAR} - Oriented Image (Subset image of a defined area)
- Re-projection to projections defined by customer
- Reformatting to e.g. NITF, ERDAS IMG, Geomatics PIX file formats
- Rescaling to 8 bit (e.g. for visualization purposes for mapping applications)

Detailed information on the products can be found in TerraSAR-X Enhanced Image Product Specification [RD-6] and TerraSAR-X Services - Image Product Guide [RD7].

The product format of the Enhance Image as well as the customized products is described in detail in the following chapters.

3. TERRASAR-X ENHANCED IMAGE PRODUCT NAMING CONVENTIONS

The naming convention applied for the Enhanced Image (EI) products is very similar to the naming convention of the L1B products (RD-1).

The Enhanced Image product is delivered to the customer in a package structure, which is typically a directory structure (see chapter 4).

The general product type naming follows the following naming convention:

AAAA_BBBB_CCC_DDDD_EE_F_GGG_xxxxxxxxTxxxxxx_yyyyyyyyTyyyyyy

The naming convention of the image product component follows the following naming convention:

image_HH_CCC_JJ_KKK_tile_LLL

The identifier marked in blue is optional. See Table 3-1 for details.

In the table below the constituents of the above described naming concept are listed.

Table 3-1: EI product file name constituents

Constituent ID	Constituent name	Values	Explanation
AAAA	Satellite	TSX1	TerraSAR-X 1
		TDX1	TanDEM-X
		TSX2	TerraSAR-X 2
BBBB	Sensor	SAR_	SAR
CCC	Product type	RaN	Radiometric corrected / normalized image
		ORI	Orthorectified image
		MC_	Mosaic
		OI_	Oriented image
		ADM	Ascending / Descending merge
DDDD	Resolution variant (ORI only)	SE__	Spatially enhanced
		RE__	Radiometrically enhanced
		XX__	Not applicable
EE	Imaging mode	HS	High Resolution SpotLight
		SL	SpotLight
		SM	StripMap
		SC	ScanSAR

Constituent ID	Constituent name	Values	Explanation
F	Polarization mode	S	Single
		D	Dual
		T	Twin
		Q	Quad
GGG	Antenna receive configuration	SRA	Single receive antenna
		DRA	Dual receive antenna
xxxxxxxxTxxxxxx	UTC start time		Format: YYYYMMDDThhmmss If the product is composed from many input images, the start time is equal the start time of the first acquired input image.
yyyyyyyyTyyyyyy	UTC stop time		Format: YYYYMMDDThhmmss If the product is composed from many input images, the stop time is equal the stop time of the latest acquired input image.
Variable parts of the product component file names (image products and quicklooks)			
HH	Polarisation channel	HH	
		VV	
		HV	
		VH	
CCC	Product type	RaN	Radiometric corrected / normalized image
		ORI	Orthorectified image
		MC_	Mosaic
		OI_	Oriented image
		ADM	Ascending / Descending merge
JJ	EI product subtype	S0	Sigma-0 image
		B0	Beta-0 image
		G0	Gamma-0 image

Constituent ID	Constituent name	Values	Explanation
KKK	Layer number	L01, L02,	It is possible that per polarization more than one image layer exists or can be generated respectively. E.g. for SSC data, the amplitude and phase information can be extracted into two separate layers per polarization channel. If more than one layer per polarization channel exists, a layer number is added to the file name. The numeration will correspond to the layer number in the original file. This identifier of the component file name is optional and must not be filled if not needed.
tile_LLL	Tile identifier	tile_1_1, tile_1_2, tile_2_1,....	This identifier of the component file name is optional and will only be used if a tiling of the image product was performed. If no image tiling was performed, this part of the name is skipped. The following schema is applied: tile_column_line The postfix “_tile” followed by the column number of the tile and the line number of the tile (which are separated by underscores) are used. E.g.: xx_tile_1_1.tif xx_tile_2_1.tif xx_tile_3_1.tif xx_tile_1_2.tif xx_tile_2_2.tif xx_tile_3_2.tif xx_tile_1_3.tif xx_tile_2_3.tif xx_tile_3_3.tif

Each Enhanced Image Products comes with auxiliary raster files as product components. The following table depicts the available auxiliary raster files and their naming convention.

Table 3-2: File naming convention for auxiliary raster product components

File names of auxiliary raster product components	
GIM	Geocoded Incidence Angle Mask (according to DLR format)
IAM	Incidence Angle Mask (ITD format)
LSM	Layover- and Shadow Mask (ITD format)
SOU	Source Mask (for MC and ADM)
RES	Local resolution map
ALT	Enumeration file with along track information
ACT	Enumeration file with across track information

4. ENHANCED IMAGE PRODUCT PACKAGE STRUCTURE

The following scheme depicts the Enhanced Image Product package structure. The data package generated by PAD and delivered to the customers is compiled according to this structure.

The files displayed as a shadowed box can occur multiple times. The red arrows depict links given in the EI metadata file to all files of the product. The EI metadata file includes all information on the delivered product components. The specification of the EI metadata file is given in chapter 5.

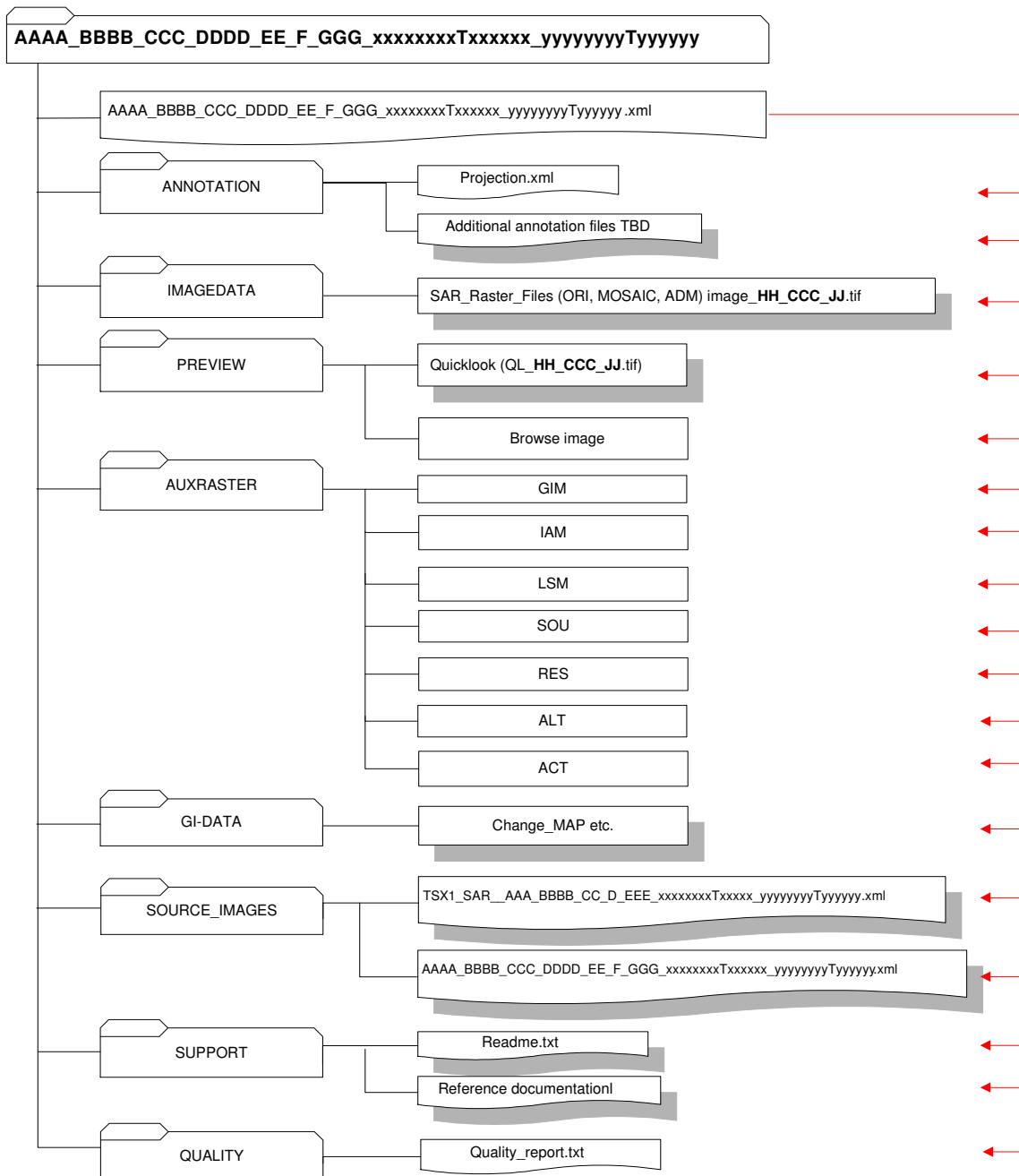


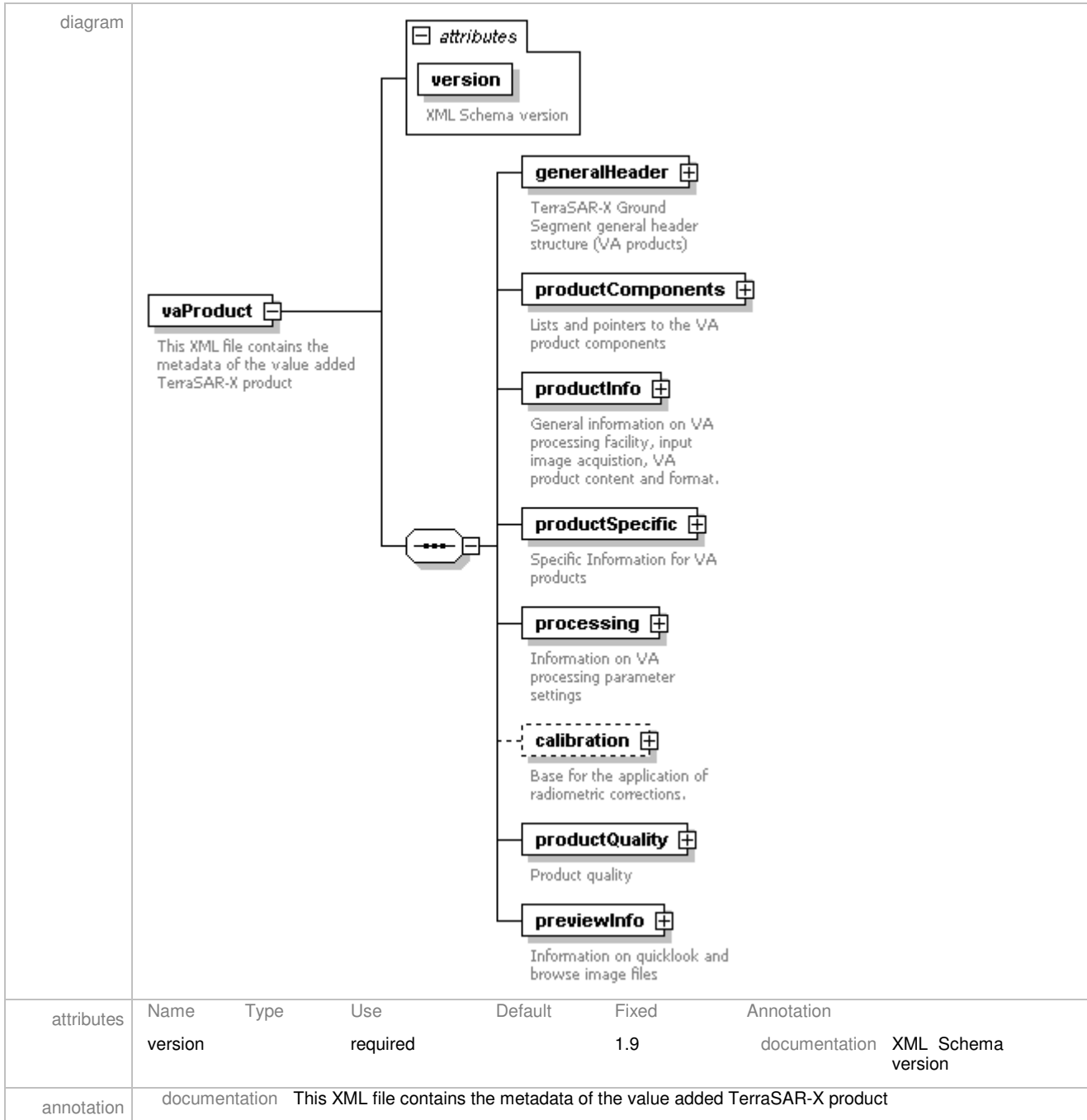
Figure 4-1: Enhanced Image Product package structure

5. ENHANCED IMAGE PRODUCT METADATA SPECIFICATION

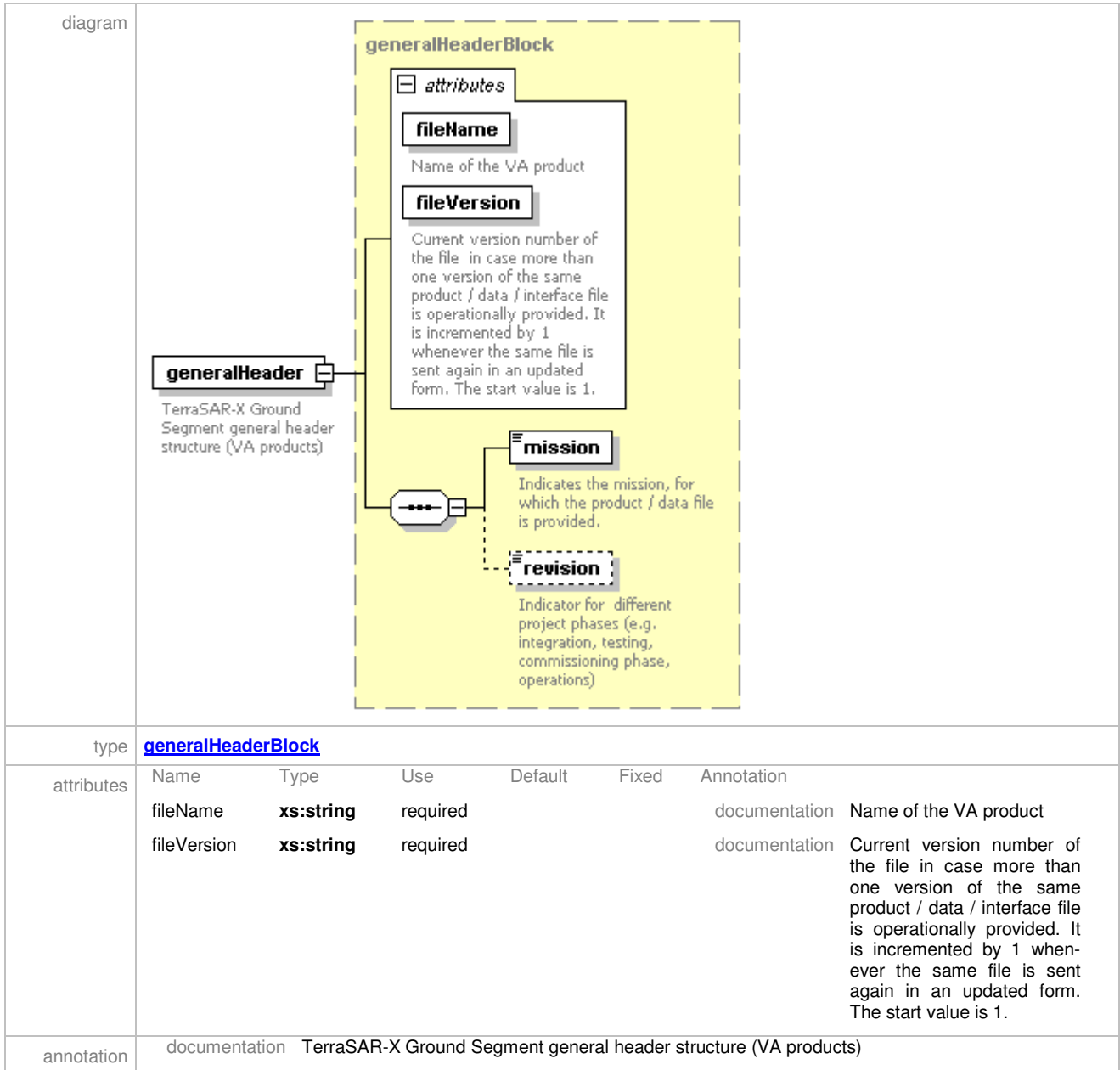
In this chapter the metadata format for the TS-X Enhanced Image Products is described. This metadata specification can be extended for future TerraSAR-X Enhanced Image products. The metadata / annotation file structure is based on that of the annotation file generated for TerraSAR-X L1B products [RD-1], with some parameter names being adapted to the needs of EI products; further, additional parameters are added. The metadata specification is delivered as an XML file along with the Enhanced Image Products and includes all information on the product and the product components.

In the following, the structure of the Enhanced Image Product metadata file, including a short description of the parameters, is indicated. Please note that the TS-X Enhanced Image products are sub-summarized under the so-called Value Added (VA) Products. Therefore, in the metadata description the parameter names use the abbreviation “va” for Value Added.

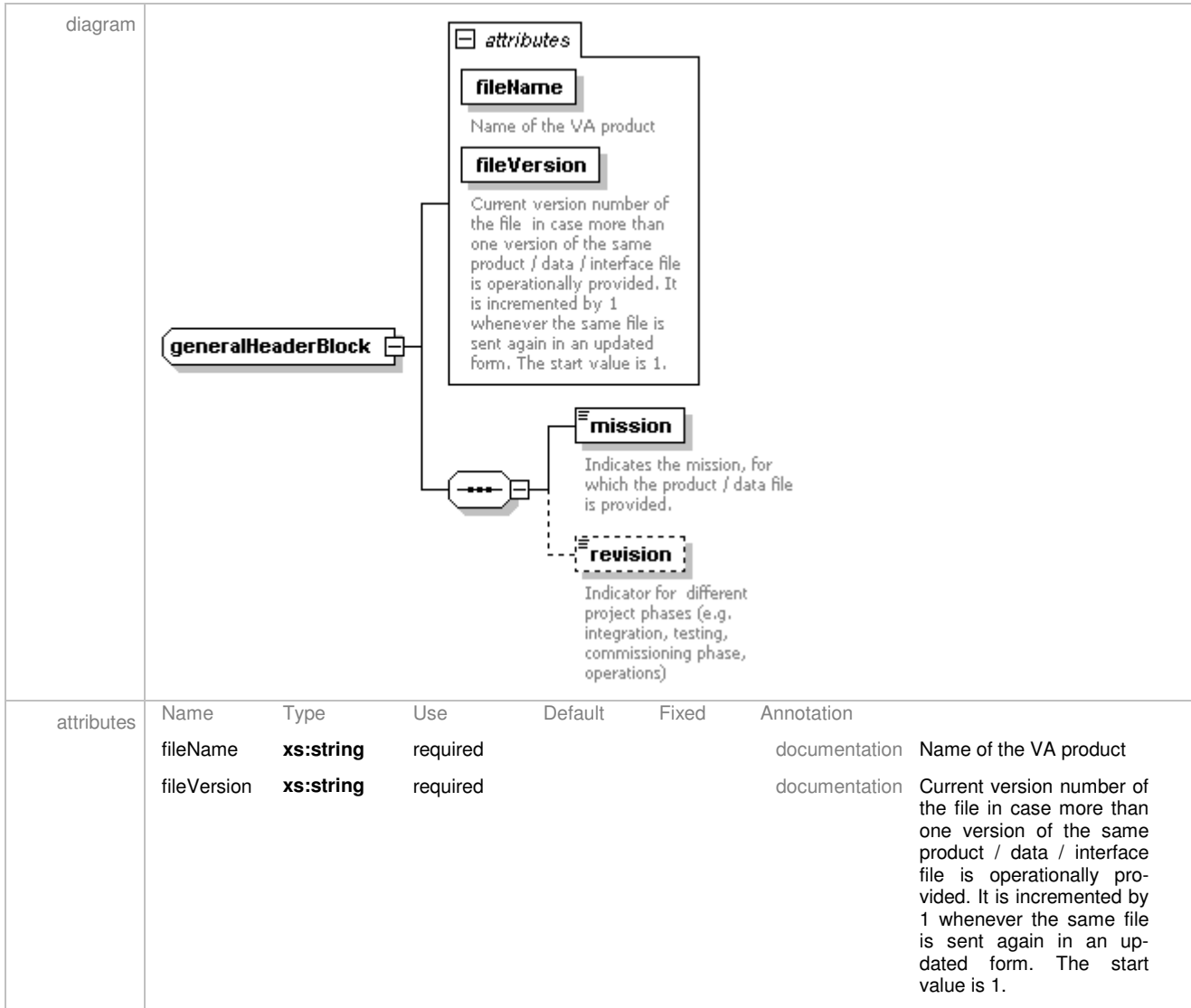
element **vaProduct**



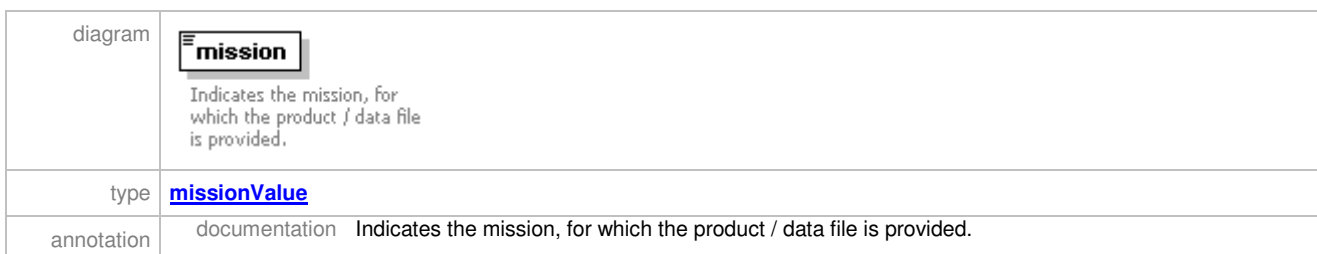
element **vaProduct/generalHeader**



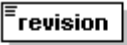
complexType **generalHeaderBlock**



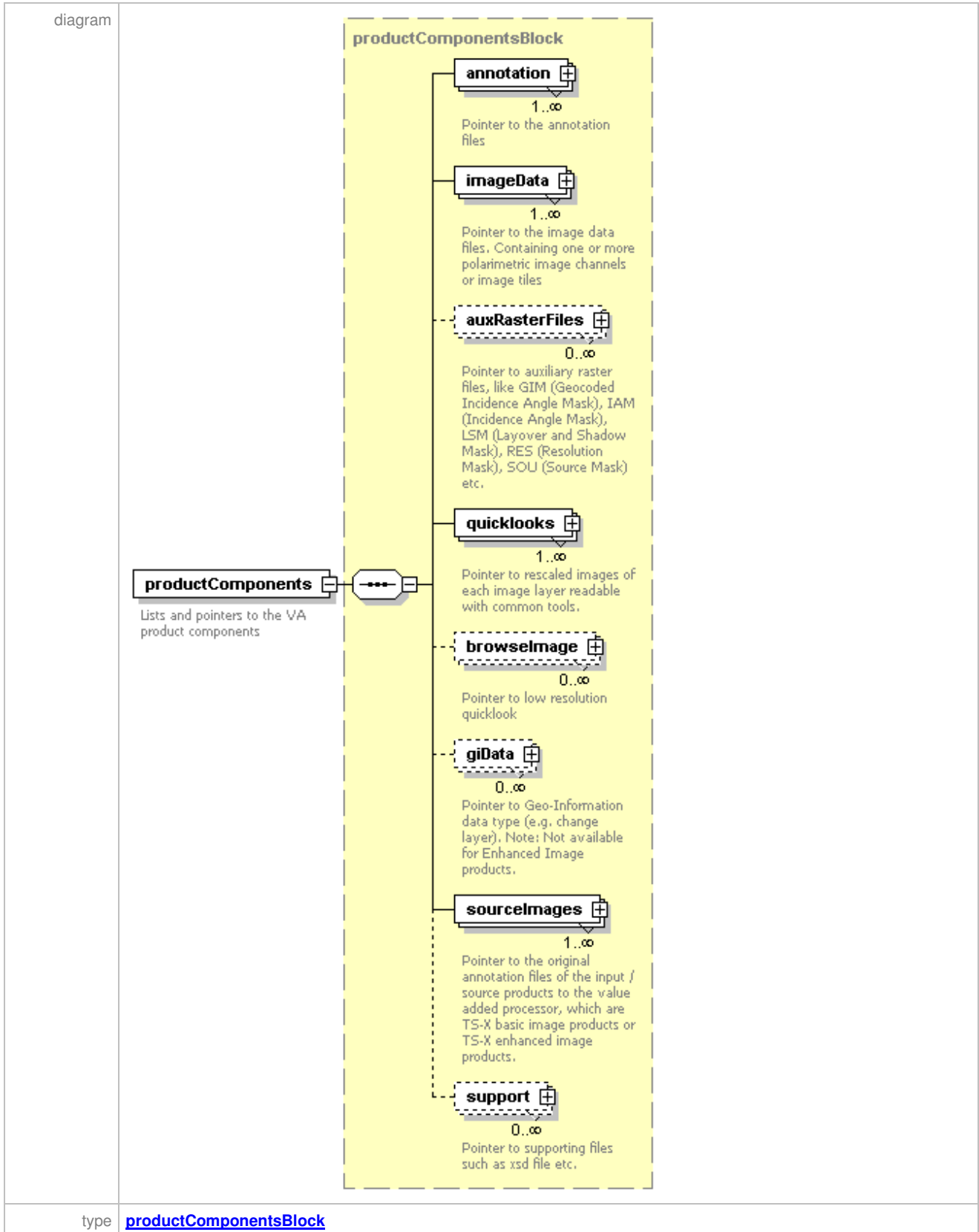
element **generalHeaderBlock/mission**



element **generalHeaderBlock/revision**

diagram	 <p>Indicator for different project phases (e.g. integration, testing, commissioning phase, operations)</p>
type	revisionBlock
annotation	documentation Indicator for different project phases (e.g. integration, testing, commissioning phase, operations)

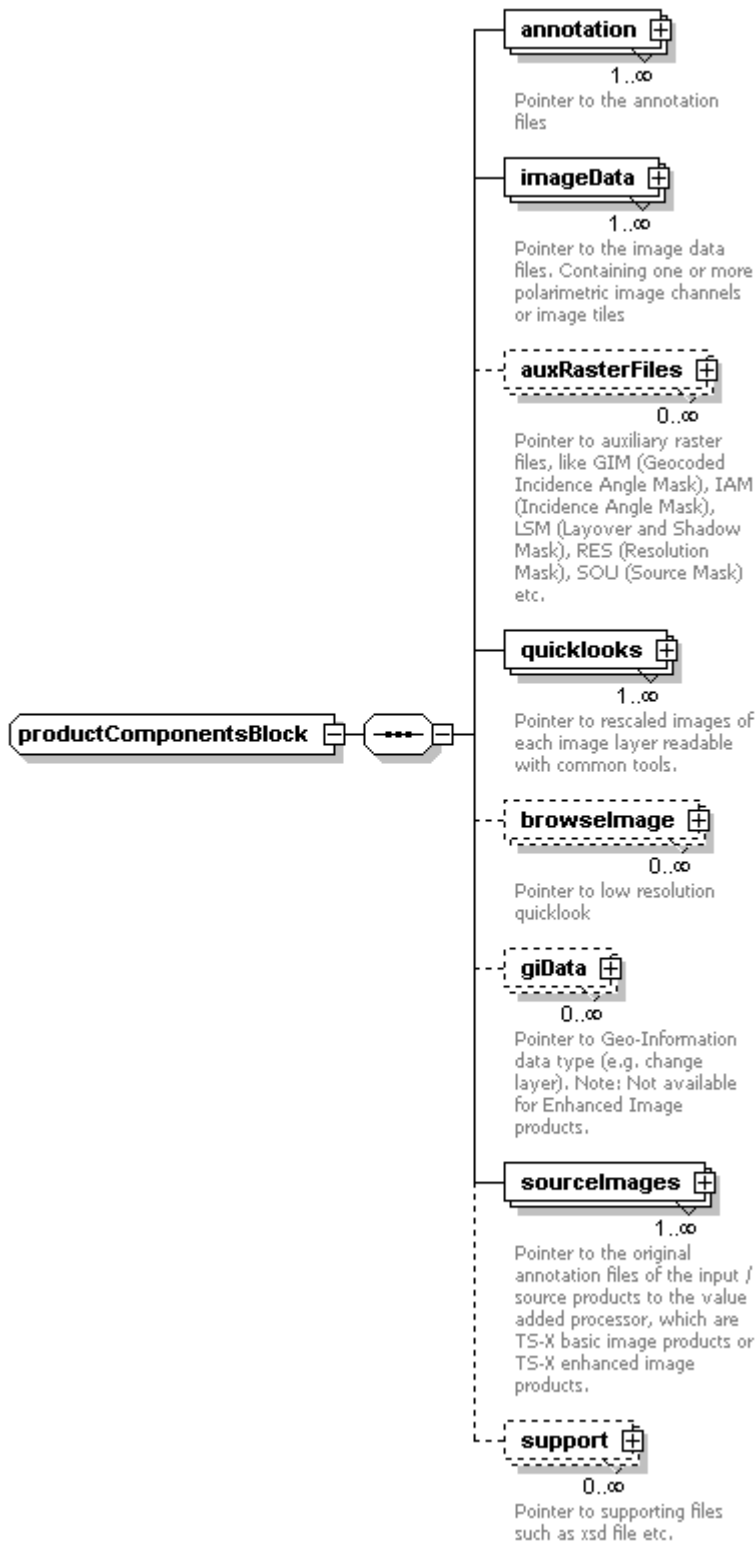
element **vaProduct/productComponents**



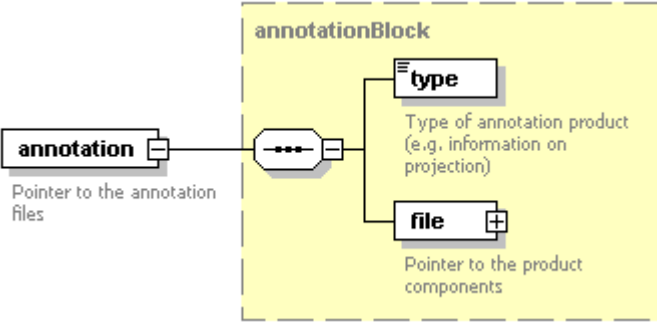
annotation documentation Lists and pointers to the VA product components

complexType **productComponentsBlock**

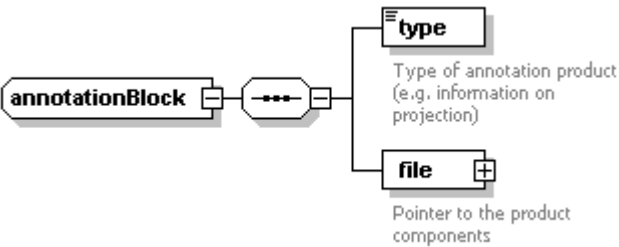
diagram



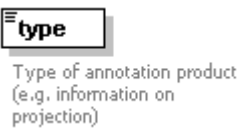
element **productComponentsBlock/annotation**

diagram	
type	annotationBlock
annotation	documentation Pointer to the annotation files

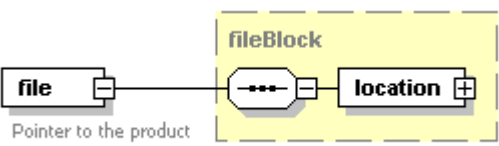
complexType **annotationBlock**

diagram	
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element **annotationBlock/type**

diagram	
type	annotationTypeValues
annotation	documentation Type of annotation product (e.g. information on projection)

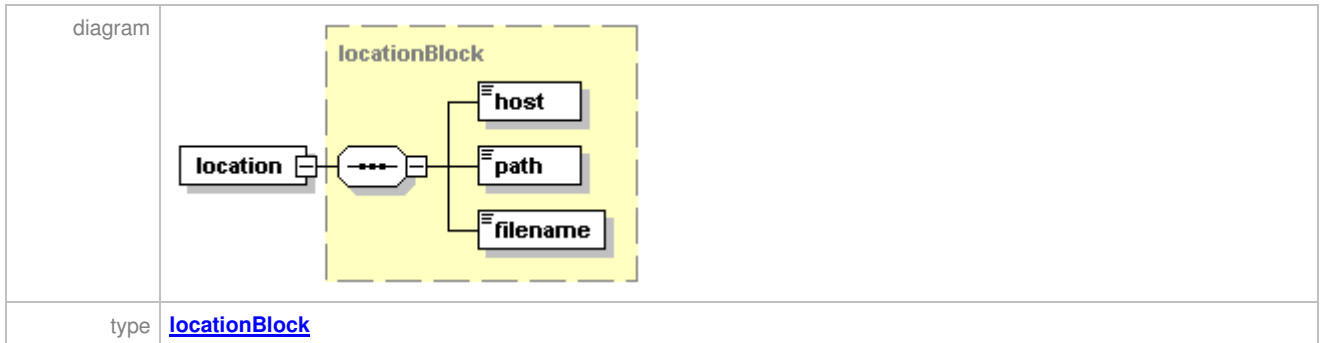
element **annotationBlock/file**

diagram	
type	fileBlock
annotation	documentation Pointer to the product components

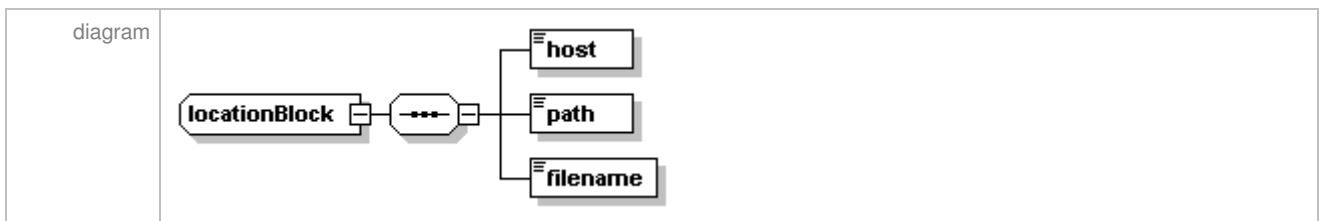
complexType **fileBlock**



element **fileBlock/location**



complexType **locationBlock**



element **locationBlock/host**



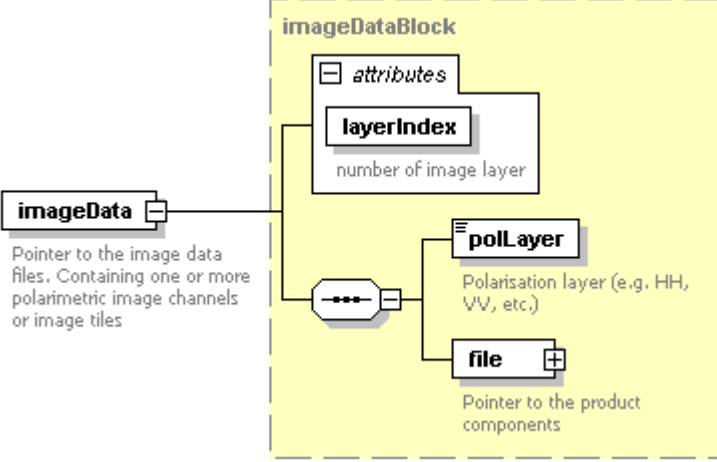
element **locationBlock/path**



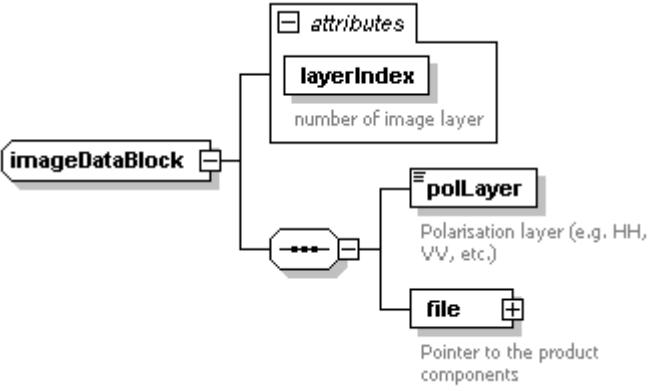
element **locationBlock/filename**




element **productComponentsBlock/imageData**

diagram						
type	imageDataBlock					
attributes	Name	Type	Use	Default	Fixed	Annotation
	layerIndex	xs:int	required			documentation number of image layer
annotation	documentation	Pointer to the image data files. Containing one or more polarimetric image channels or image tiles				

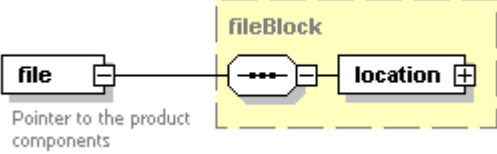
complexType **imageDataBlock**

diagram						
attributes	Name	Type	Use	Default	Fixed	Annotation
	layerIndex	xs:int	required			documentation number of image layer

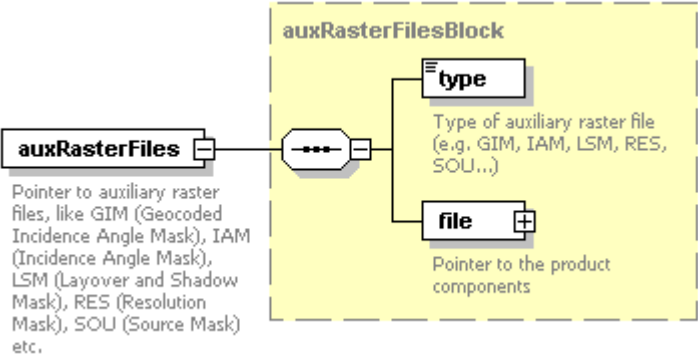
element **imageDataBlock/polLayer**

diagram						
type	polLayerValue					
annotation	documentation	Polarisation layer (e.g. HH, VV, etc.)				

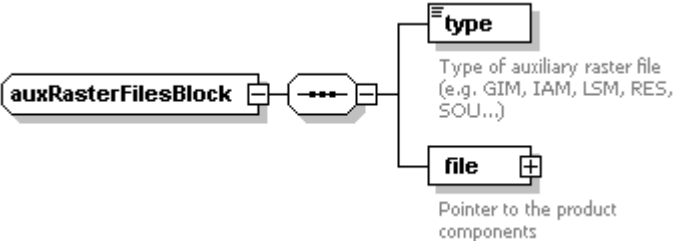
element **imageDataBlock/file**

diagram	 <p>The diagram shows a 'file' element (represented by a box with a minus sign on the right) connected to a 'fileBlock' container (a dashed yellow box). Inside the 'fileBlock' container, there is a 'location' element (represented by a box with a plus sign on the right). The 'file' element is connected to the 'fileBlock' container, which in turn is connected to the 'location' element.</p> <p>file Pointer to the product components</p>
type	fileBlock
annotation	documentation Pointer to the product components

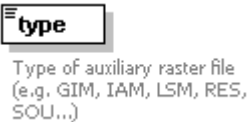
element **productComponentsBlock/auxRasterFiles**

diagram	 <p>The diagram shows an 'auxRasterFiles' element (represented by a box with a minus sign on the right) connected to an 'auxRasterFilesBlock' container (a dashed yellow box). Inside the 'auxRasterFilesBlock' container, there are two elements: 'type' (represented by a box with a plus sign on the right) and 'file' (represented by a box with a plus sign on the right). The 'auxRasterFiles' element is connected to the 'auxRasterFilesBlock' container, which in turn is connected to both the 'type' and 'file' elements.</p> <p>auxRasterFiles Pointer to auxiliary raster files, like GIM (Geocoded Incidence Angle Mask), IAM (Incidence Angle Mask), LSM (Layover and Shadow Mask), RES (Resolution Mask), SOU (Source Mask) etc.</p> <p>type Type of auxiliary raster file (e.g. GIM, IAM, LSM, RES, SOU...)</p> <p>file Pointer to the product components</p>
type	auxRasterFilesBlock
annotation	documentation Pointer to auxiliary raster files, like GIM (Geocoded Incidence Angle Mask), IAM (Incidence Angle Mask), LSM (Layover and Shadow Mask), RES (Resolution Mask), SOU (Source Mask) etc.

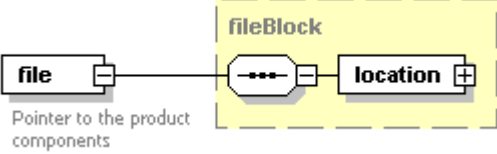
complexType **auxRasterFilesBlock**

diagram	 <p>The diagram shows an 'auxRasterFilesBlock' element (represented by a box with a minus sign on the right) connected to an 'auxRasterFilesBlock' container (a dashed yellow box). Inside the 'auxRasterFilesBlock' container, there are two elements: 'type' (represented by a box with a plus sign on the right) and 'file' (represented by a box with a plus sign on the right). The 'auxRasterFilesBlock' element is connected to the 'auxRasterFilesBlock' container, which in turn is connected to both the 'type' and 'file' elements.</p> <p>type Type of auxiliary raster file (e.g. GIM, IAM, LSM, RES, SOU...)</p> <p>file Pointer to the product components</p>
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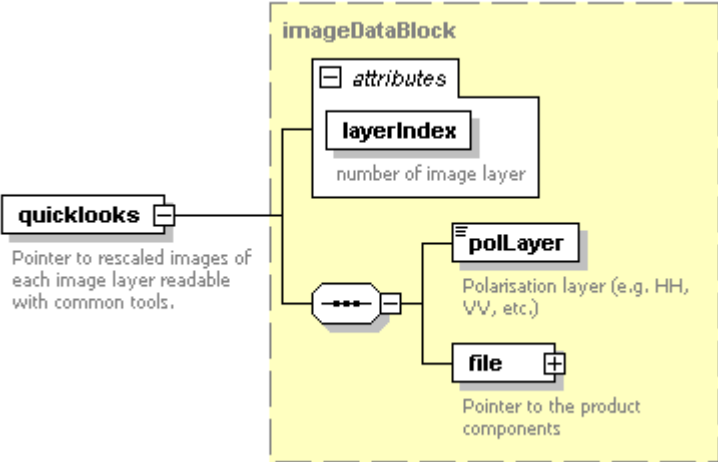
element **auxRasterFilesBlock/type**

diagram	 <p>The diagram shows a 'type' element (represented by a box with a plus sign on the right).</p> <p>type Type of auxiliary raster file (e.g. GIM, IAM, LSM, RES, SOU...)</p>
type	auxrasterfilesTypeValues
annotation	documentation Type of auxiliary raster file (e.g. GIM, IAM, LSM, RES, SOU...)

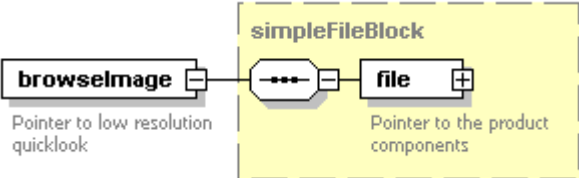
element **auxRasterFilesBlock/file**

diagram	
type	fileBlock
annotation	documentation Pointer to the product components

element **productComponentsBlock/quicklooks**

diagram													
type	imageDataBlock												
attributes	<table border="1"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Use</th> <th>Default</th> <th>Fixed</th> <th>Annotation</th> </tr> </thead> <tbody> <tr> <td>layerIndex</td> <td>xs:int</td> <td>required</td> <td></td> <td></td> <td>documentation number of image layer</td> </tr> </tbody> </table>	Name	Type	Use	Default	Fixed	Annotation	layerIndex	xs:int	required			documentation number of image layer
Name	Type	Use	Default	Fixed	Annotation								
layerIndex	xs:int	required			documentation number of image layer								
annotation	documentation Pointer to rescaled images of each image layer readable with common tools.												

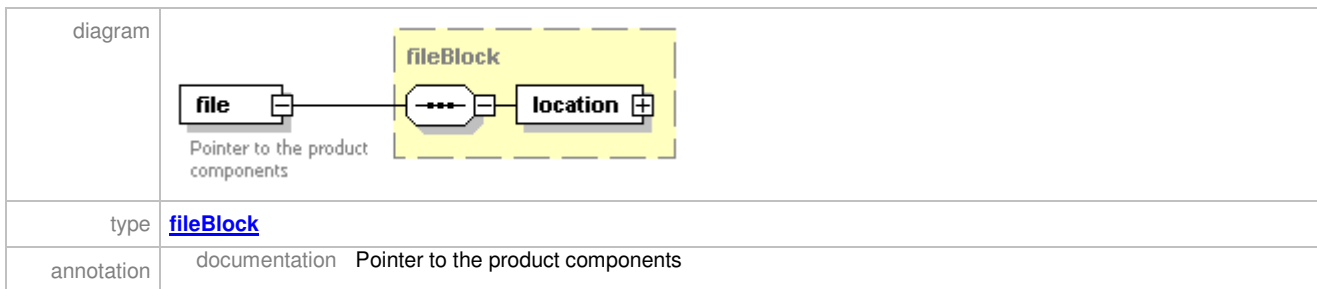
element **productComponentsBlock/browseImage**

diagram	
type	simpleFileBlock
annotation	documentation Pointer to low resolution quicklook

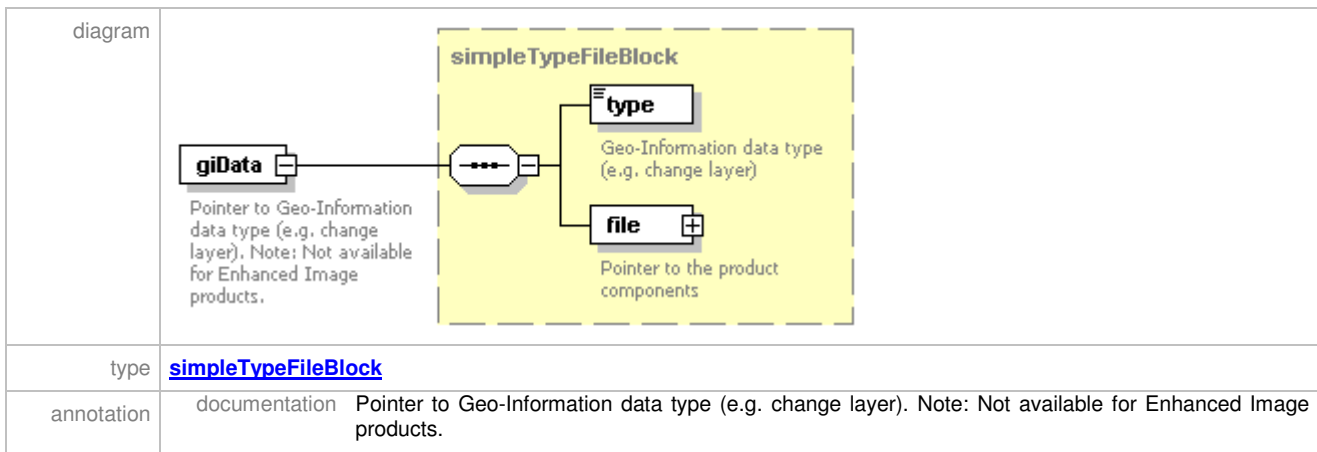
complexType **simpleFileBlock**



element **simpleFileBlock/file**



element **productComponentsBlock/giData**



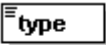
element **productComponentsBlock/sourcelmages**

<p>diagram</p>	<p>sourcelmagesBlock</p> <p>type Type of input / source image files (e.g. EEC, MGD, ORI...)</p> <p>file Pointer to the product components</p> <p>pixelValueID Mosaic and Ascending / Descending Merge are composed of two or more input (source) image products. The auxiliary raster file Source Mask (SOU) identifies the input image used for each pixel. This pixelValueID links the pixel value of the source mask to the respective input image.</p> <p>sourcelmages Pointer to the original annotation files of the input / source products to the value added processor, which are TS-X basic image products or TS-X enhanced image products.</p>
<p>type</p>	<p>sourcelmagesBlock</p>
<p>annotation</p>	<p>documentation Pointer to the original annotation files of the input / source products to the value added processor, which are TS-X basic image products or TS-X enhanced image products.</p>

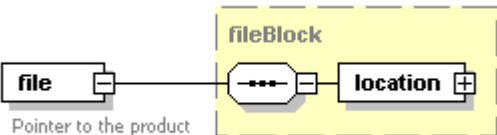
complexType **sourcelmagesBlock**

<p>diagram</p>	<p>sourcelmagesBlock</p> <p>type Type of input / source image files (e.g. EEC, MGD, ORI...)</p> <p>file Pointer to the product components</p> <p>pixelValueID Mosaic and Ascending / Descending Merge are composed of two or more input (source) image products. The auxiliary raster file Source Mask (SOU) identifies the input image used for each pixel. This pixelValueID links the pixel value of the source mask to the respective input image.</p>
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element **sourceImagesBlock/type**

diagram	 <p>Type of input / source image files (e.g. EEC, MGD, ORI...)</p>
type	sourceImagesTypeValues
annotation	documentation Type of input / source image files (e.g. EEC, MGD, ORI...)

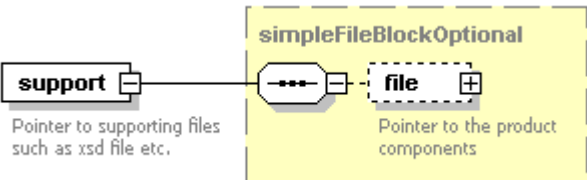
element **sourceImagesBlock/file**

diagram	 <p>Pointer to the product components</p>
type	fileBlock
annotation	documentation Pointer to the product components

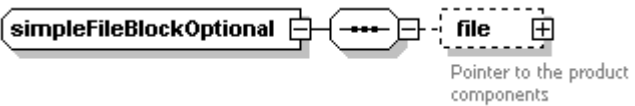
element `sourceImagesBlock/pixelValueID`

diagram	 <p>Mosaic and Ascending / Descending Merge are composed of two ore more input (source) image products. The auxiliary raster file Source Mask (SOU) identifies the input image used for each pixel. This pixelValueID links the pixel value of the source mask to the respective input image.</p>
type	<code>xs:int</code>
annotation	documentation Mosaic and Ascending / Descending Merge are composed of two ore more input (source) image products. The auxiliary raster file Source Mask (SOU) identifies the input image used for each pixel. This pixelValueID links the pixel value of the source mask to the respective input image.

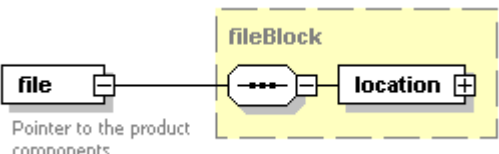
element `productComponentsBlock/support`

diagram	 <p>Pointer to supporting files such as xsd file etc.</p> <p>simpleFileBlockOptional</p> <p>file</p> <p>Pointer to the product components</p>
type	simpleFileBlockOptional
annotation	documentation Pointer to supporting files such as xsd file etc.

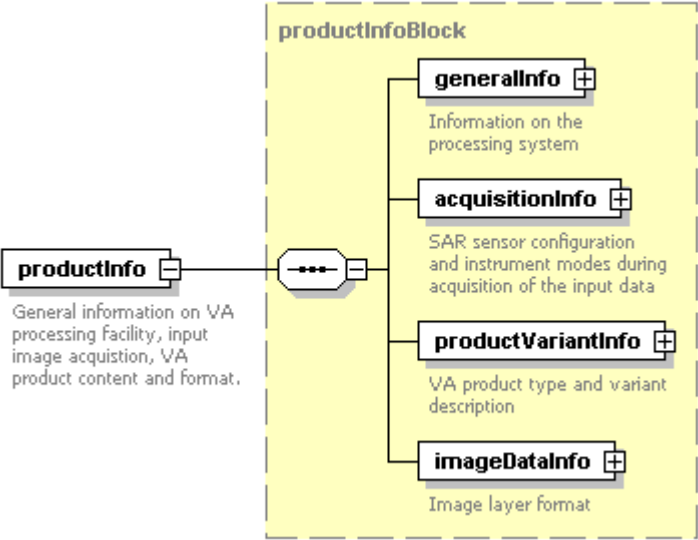
complexType `simpleFileBlockOptional`

diagram	 <p>simpleFileBlockOptional</p> <p>file</p> <p>Pointer to the product components</p>
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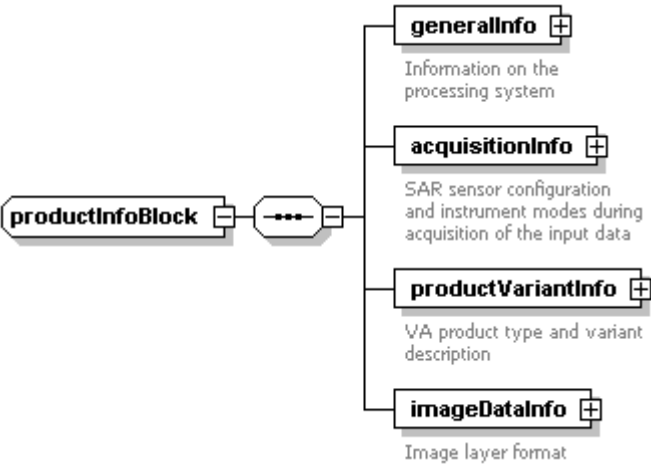
element `simpleFileBlockOptional/file`

diagram	 <p>file</p> <p>Pointer to the product components</p> <p>fileBlock</p> <p>location</p>
type	fileBlock
annotation	documentation Pointer to the product components

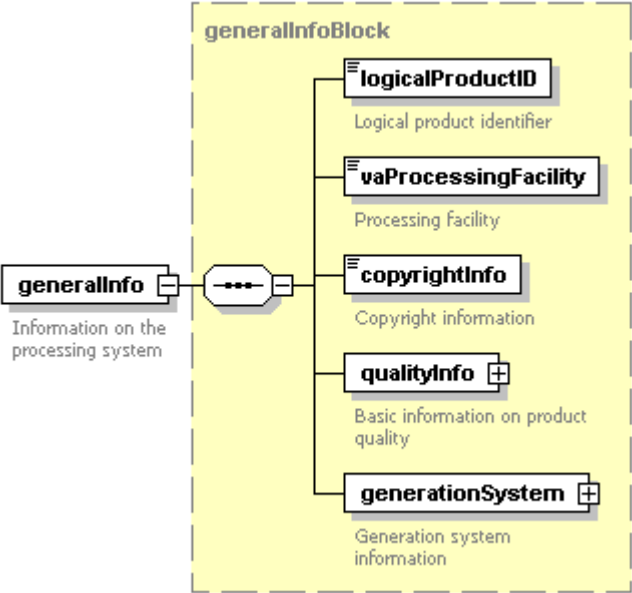
element **vaProduct/productInfo**

<p>diagram</p>	 <p>The diagram shows a class productInfo with a description: "General information on VA processing facility, input image acquisition, VA product content and format." This class is connected to a dashed box labeled productInfoBlock. Inside this box, productInfo is composed of four sub-classes: generalInfo (Information on the processing system), acquisitionInfo (SAR sensor configuration and instrument modes during acquisition of the input data), productVariantInfo (VA product type and variant description), and imageDataInfo (Image layer format).</p>
<p>type</p>	<p>productInfoBlock</p>
<p>annotation</p>	<p>documentation General information on VA processing facility, input image acquisition, VA product content and format.</p>

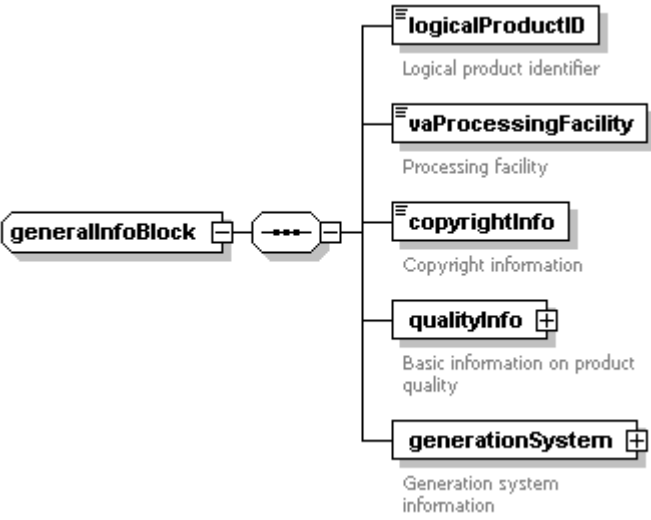
complexType **productInfoBlock**

<p>diagram</p>	 <p>The diagram shows a class productInfoBlock connected to a dashed box labeled productInfoBlock. Inside this box, productInfoBlock is composed of four sub-classes: generalInfo (Information on the processing system), acquisitionInfo (SAR sensor configuration and instrument modes during acquisition of the input data), productVariantInfo (VA product type and variant description), and imageDataInfo (Image layer format).</p>
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element **productInfoBlock/generalInfo**

diagram	 <p>The diagram shows the structure of the generalInfo element. It is connected to a dashed box labeled generalInfoBlock. Inside this box, there are five sub-elements: logicalProductID (Logical product identifier), vaProcessingFacility (Processing facility), copyrightInfo (Copyright information), qualityInfo (Basic information on product quality), and generationSystem (Generation system information). The generalInfo element is described as "Information on the processing system".</p>
type	generalInfoBlock
annotation	documentation Information on the processing system

complexType **generalInfoBlock**

diagram	 <p>The diagram shows the structure of the generalInfoBlock complex type. It is connected to a dashed box containing five sub-elements: logicalProductID (Logical product identifier), vaProcessingFacility (Processing facility), copyrightInfo (Copyright information), qualityInfo (Basic information on product quality), and generationSystem (Generation system information). The generalInfoBlock element is described as "Logical product identifier".</p>
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element **generalInfoBlock/logicalProductID**

diagram	 <p>The diagram shows the logicalProductID element, described as "Logical product identifier".</p>
type	xs:string
annotation	documentation Logical product identifier

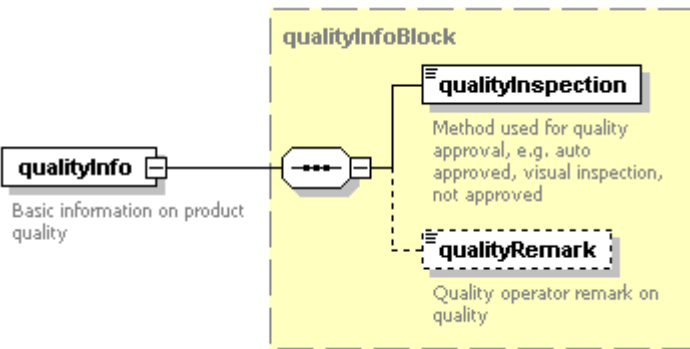
element **generalInfoBlock/vaProcessingFacility**

diagram	 <p>vaProcessingFacility Processing facility</p>
type	xs:string
annotation	documentation Processing facility

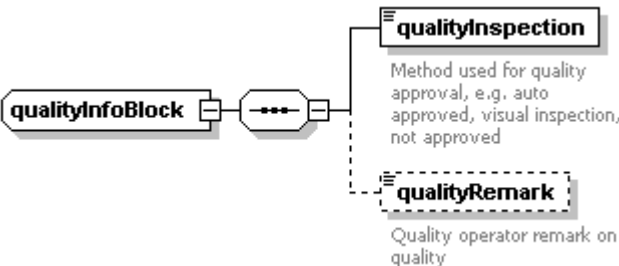
element **generalInfoBlock/copyrightInfo**

diagram	 <p>copyrightInfo Copyright information</p>
type	xs:string
annotation	documentation Copyright information


element **generalInfoBlock/qualityInfo**

diagram	 <p>qualityInfo Basic information on product quality</p> <p>qualityInfoBlock</p> <p>qualityInspection Method used for quality approval, e.g. auto approved, visual inspection, not approved</p> <p>qualityRemark Quality operator remark on quality</p>
type	qualityInfoBlock
annotation	documentation Basic information on product quality

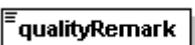
complexType **qualityInfoBlock**

diagram	 <p>qualityInfoBlock</p> <p>qualityInspection Method used for quality approval, e.g. auto approved, visual inspection, not approved</p> <p>qualityRemark Quality operator remark on quality</p>
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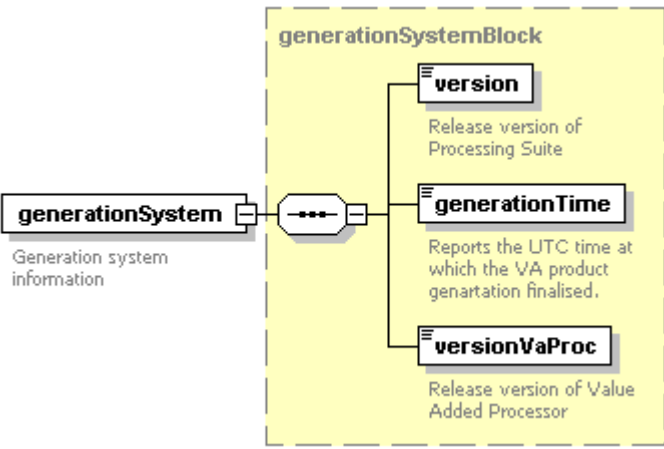
element **qualityInfoBlock/qualityInspection**

diagram	 <p>Method used for quality approval, e.g. auto approved, visual inspection, not approved</p>
type	xs:string
annotation	documentation Method used for quality approval, e.g. auto approved, visual inspection, not approved

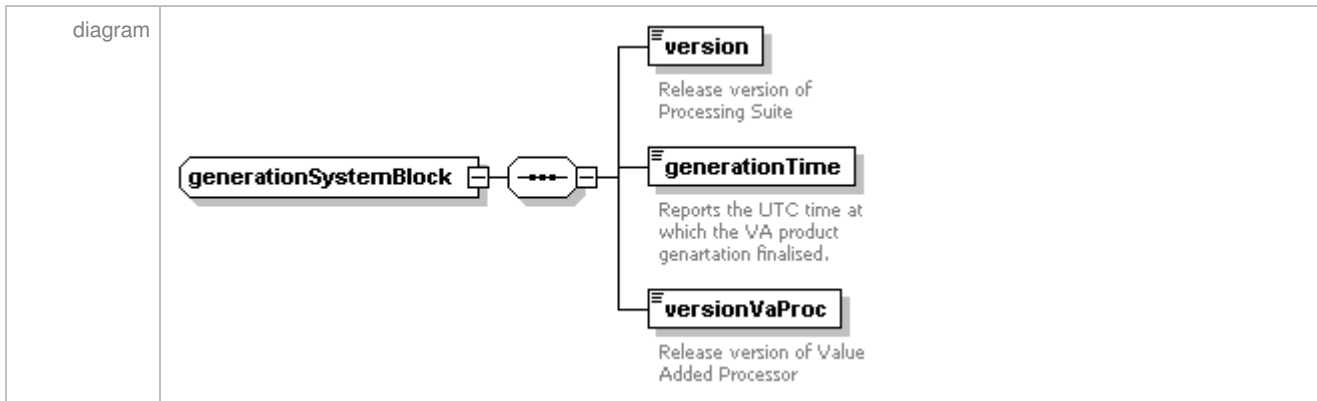
element **qualityInfoBlock/qualityRemark**

diagram	 <p>Quality operator remark on quality</p>
type	xs:string
annotation	documentation Quality operator remark on quality


element **generallInfoBlock/generationSystem**

diagram	 <p>The diagram shows a class generationSystem (Generation system information) connected to a dashed box labeled generationSystemBlock. Inside this box are three sub-elements: version (Release version of Processing Suite), generationTime (Reports the UTC time at which the VA product generation finalised), and versionVaProc (Release version of Value Added Processor).</p>
type	generationSystemBlock
annotation	documentation Generation system information

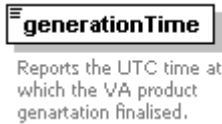
complexType **generationSystemBlock**




element **generationSystemBlock/version**

diagram	
type	xs:string
annotation	documentation Release version of Processing Suite

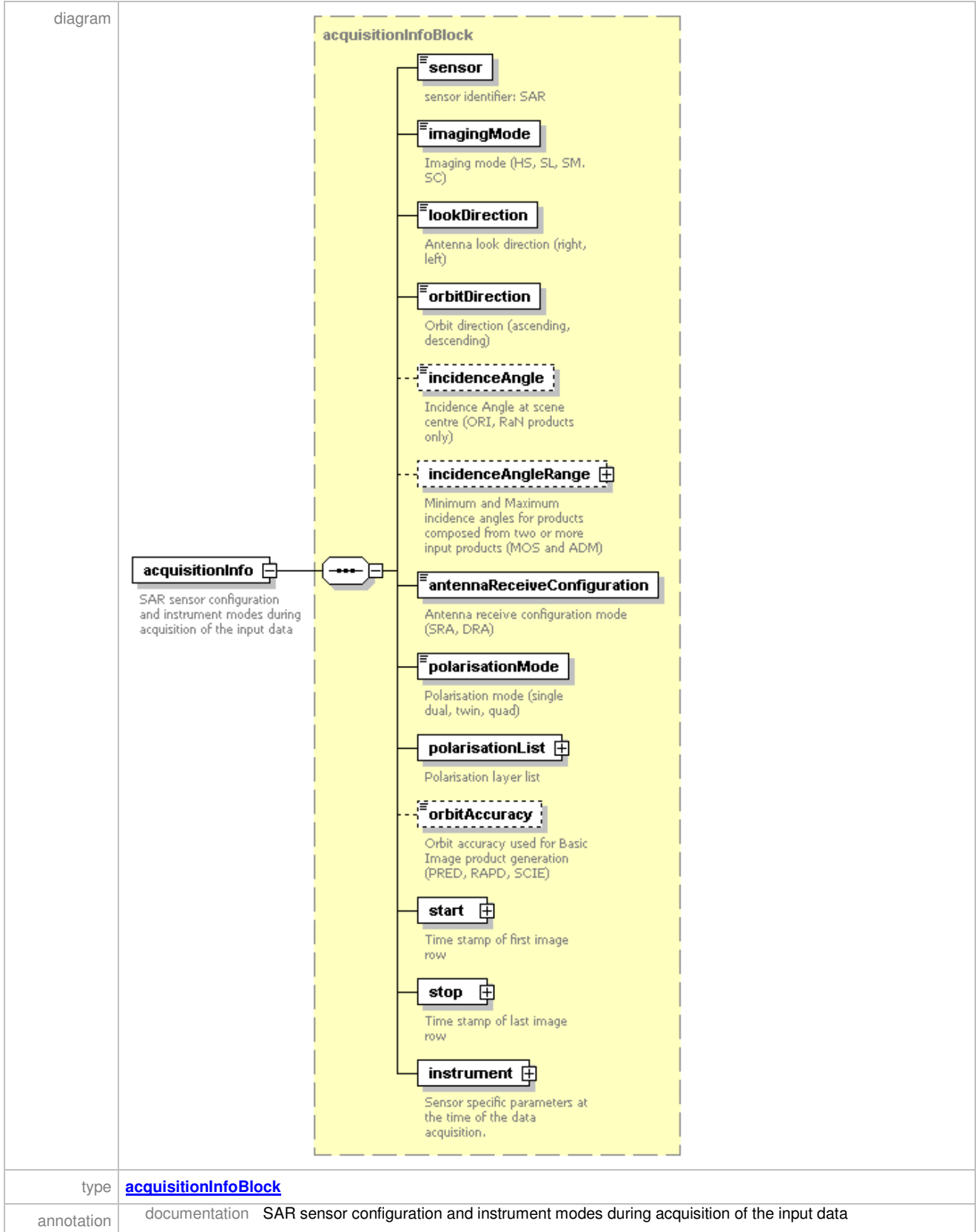
element **generationSystemBlock/generationTime**

diagram	
type	xs:string
annotation	documentation Reports the UTC time at which the VA product generation finalised.

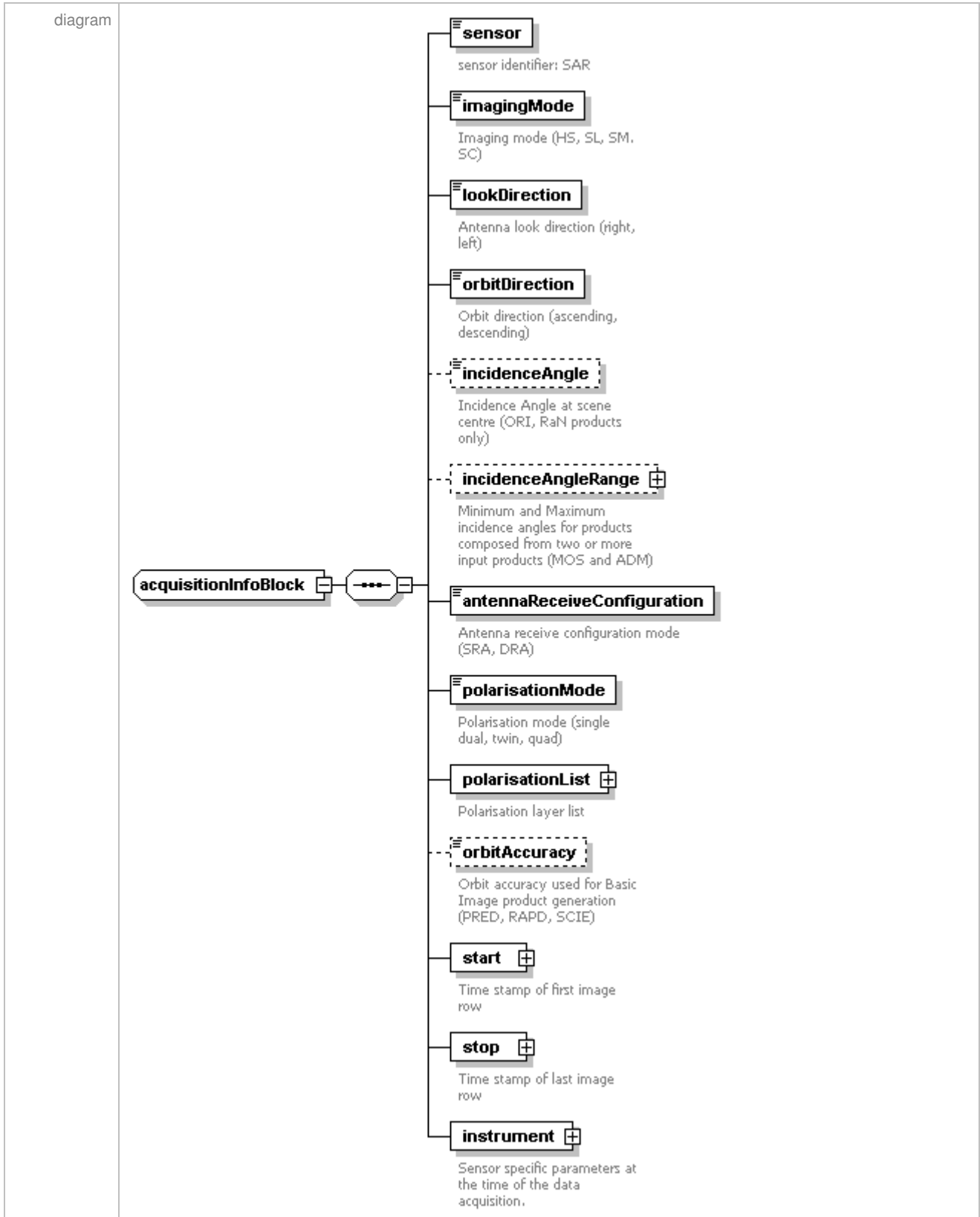
element **generationSystemBlock/versionVaProc**

diagram	
type	xs:string
annotation	documentation Release version of Value Added Processor

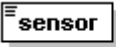
element **productInfoBlock/acquisitionInfo**




complexType **acquisitionInfoBlock**




element acquisitionInfoBlock/sensor

diagram	 <p>sensor identifier: SAR</p>
type	sensorValues
annotation	documentation sensor identifier: SAR


element acquisitionInfoBlock/imagingMode

diagram	 <p>Imaging mode (HS, SL, SM, SC)</p>
type	imagingModeValues
annotation	documentation Imaging mode (HS, SL, SM, SC)

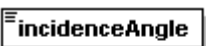
element acquisitionInfoBlock/lookDirection

diagram	 <p>Antenna look direction (right, left)</p>
type	lookDirectionValues
annotation	documentation Antenna look direction (right, left)

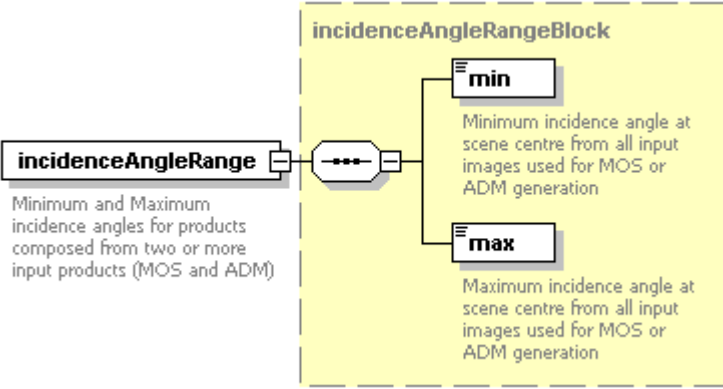
element acquisitionInfoBlock/orbitDirection

diagram	 <p>Orbit direction (ascending, descending)</p>
type	orbitDirectionValues
annotation	documentation Orbit direction (ascending, descending)

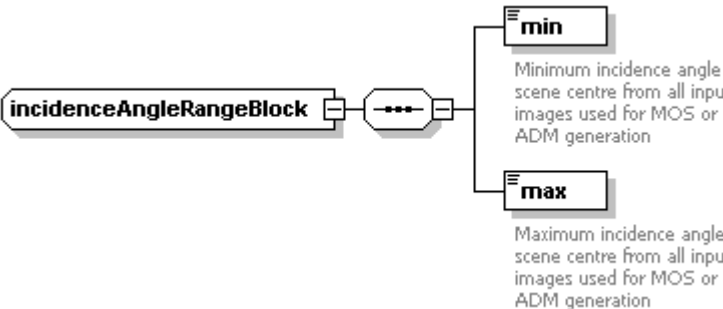
element acquisitionInfoBlock/incidenceAngle

diagram	 <p>Incidence Angle at scene centre (ORI, RaN products only)</p>
type	xs:double
annotation	documentation Incidence Angle at scene centre (ORI, RaN products only)


element acquisitionInfoBlock/incidenceAngleRange

diagram	 <p>The diagram shows an incidenceAngleRange element (a rounded rectangle) connected to a central port. This port is connected to an incidenceAngleRangeBlock (a dashed yellow box). Inside this block, there are two sub-elements: min and max. The min element is described as 'Minimum incidence angle at scene centre from all input images used for MOS or ADM generation'. The max element is described as 'Maximum incidence angle at scene centre from all input images used for MOS or ADM generation'.</p>
type	incidenceAngleRangeBlock
annotation	documentation Minimum and Maximum incidence angles for products composed from two or more input products (MOS and ADM)

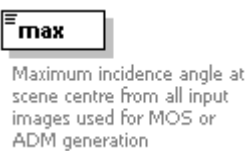
complexType incidenceAngleRangeBlock

diagram	 <p>The diagram shows an incidenceAngleRangeBlock element (a rounded rectangle) connected to a central port. This port is connected to two sub-elements: min and max. The min element is described as 'Minimum incidence angle at scene centre from all input images used for MOS or ADM generation'. The max element is described as 'Maximum incidence angle at scene centre from all input images used for MOS or ADM generation'.</p>
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element incidenceAngleRangeBlock/min

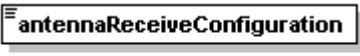
diagram	 <p>The diagram shows the min element (a rounded rectangle) with the text: 'Minimum incidence angle at scene centre from all input images used for MOS or ADM generation'.</p>
type	xs:double
annotation	documentation Minimum incidence angle at scene centre from all input images used for MOS or ADM generation

element incidenceAngleRangeBlock/max


diagram	 <p>The diagram shows the max element (a rounded rectangle) with the text: 'Maximum incidence angle at scene centre from all input images used for MOS or ADM generation'.</p>
type	xs:double

annotation	documentation	Maximum incidence angle at scene centre from all input images used for MOS or ADM generation
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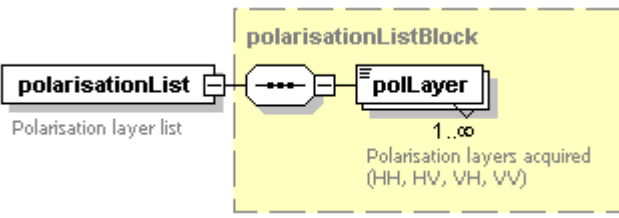
element acquisitionInfoBlock/antennaReceiveConfiguration

diagram	 <p>antennaReceiveConfiguration Antenna receive configuration mode (SRA, DRA)</p>	
type	antennaReceiveConfigurationValues	
annotation	documentation	Antenna receive configuration mode (SRA, DRA)

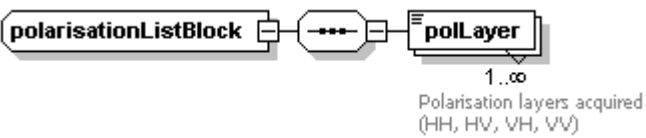
element acquisitionInfoBlock/polarisationMode

diagram	 <p>polarisationMode Polarisation mode (single dual, twin, quad)</p>	
type	polarisationModeValues	
annotation	documentation	Polarisation mode (single dual, twin, quad)

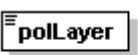
element acquisitionInfoBlock/polarisationList

diagram	 <p>polarisationList Polarisation layer list</p> <p>polarisationListBlock</p> <p>polLayer 1..∞ Polarisation layers acquired (HH, HV, VH, VV)</p>	
type	polarisationListBlock	
annotation	documentation	Polarisation layer list

complexType polarisationListBlock

diagram	 <p>polarisationListBlock</p> <p>polLayer 1..∞ Polarisation layers acquired (HH, HV, VH, VV)</p>
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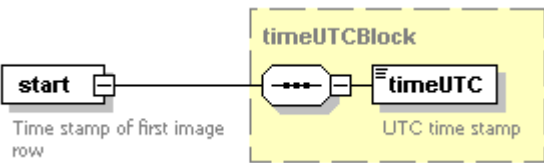
element polarisationListBlock/polLayer

diagram	 <p>polLayer Polarisation layers acquired (HH, HV, VH, VV)</p>	
type	polLayerValue	
annotation	documentation	Polarisation layers acquired (HH, HV, VH, VV)

element acquisitionInfoBlock/orbitAccuracy

diagram	 <p>Orbit accuracy used for Basic Image product generation (PRED, RAPD, SCIE)</p>
type	orbitAccuracyValues
annotation	documentation Orbit accuracy used for Basic Image product generation (PRED, RAPD, SCIE)

element acquisitionInfoBlock/start

diagram	 <p>Time stamp of first image row</p>
type	timeUTCBlock
annotation	documentation Time stamp of first image row

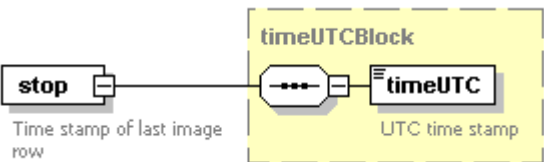
complexType timeUTCBlock

diagram	 <p>UTC time stamp</p>
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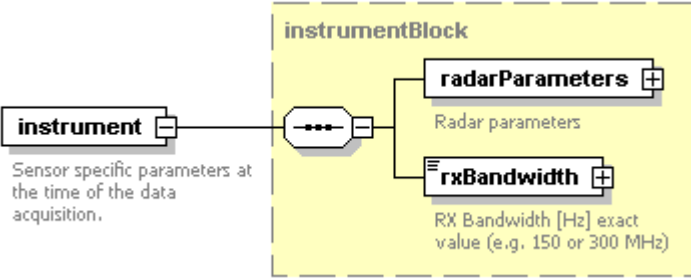
element timeUTCBlock/timeUTC

diagram	 <p>UTC time stamp</p>
type	xs:string
annotation	documentation UTC time stamp

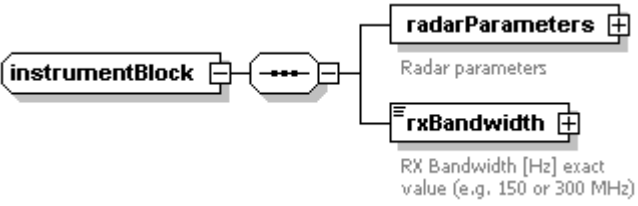
element acquisitionInfoBlock/stop

diagram	 <p>Time stamp of last image row</p>
type	timeUTCBlock
annotation	documentation Time stamp of last image row

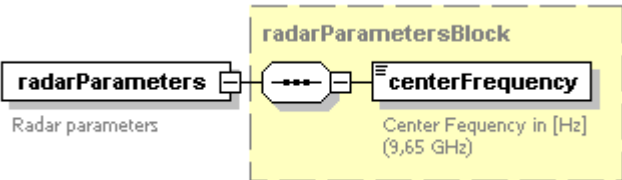
element acquisitionInfoBlock/instrument

diagram	 <p>The diagram shows an instrument element connected to an instrumentBlock. The instrument is described as "Sensor specific parameters at the time of the data acquisition." The instrumentBlock contains two sub-elements: radarParameters (described as "Radar parameters") and rxBandwidth (described as "RX Bandwidth [Hz] exact value (e.g. 150 or 300 MHz)").</p>
type	instrumentBlock
annotation	documentation Sensor specific parameters at the time of the data acquisition.

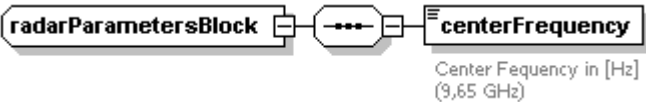
complexType instrumentBlock

diagram	 <p>The diagram shows the instrumentBlock complexType containing radarParameters and rxBandwidth. The rxBandwidth is described as "RX Bandwidth [Hz] exact value (e.g. 150 or 300 MHz)".</p>
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element instrumentBlock/radarParameters

diagram	 <p>The diagram shows the radarParameters element connected to a radarParametersBlock. The radarParameters is described as "Radar parameters". The radarParametersBlock contains the centerFrequency element, described as "Center Frequency in [Hz] (9,65 GHz)".</p>
type	radarParametersBlock
annotation	documentation Radar parameters

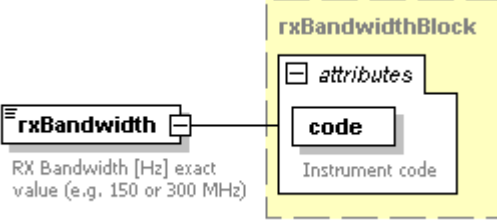
complexType radarParametersBlock

diagram	 <p>The diagram shows the radarParametersBlock complexType containing the centerFrequency element, described as "Center Frequency in [Hz] (9,65 GHz)".</p>
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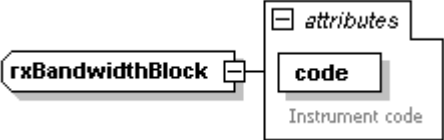
element radarParametersBlock/centerFrequency

diagram	 <p>The diagram shows the centerFrequency element, described as "Center Frequency in [Hz] (9,65 GHz)".</p>
type	xs:double
annotation	documentation Center Frequency in [Hz] (9,65 GHz)

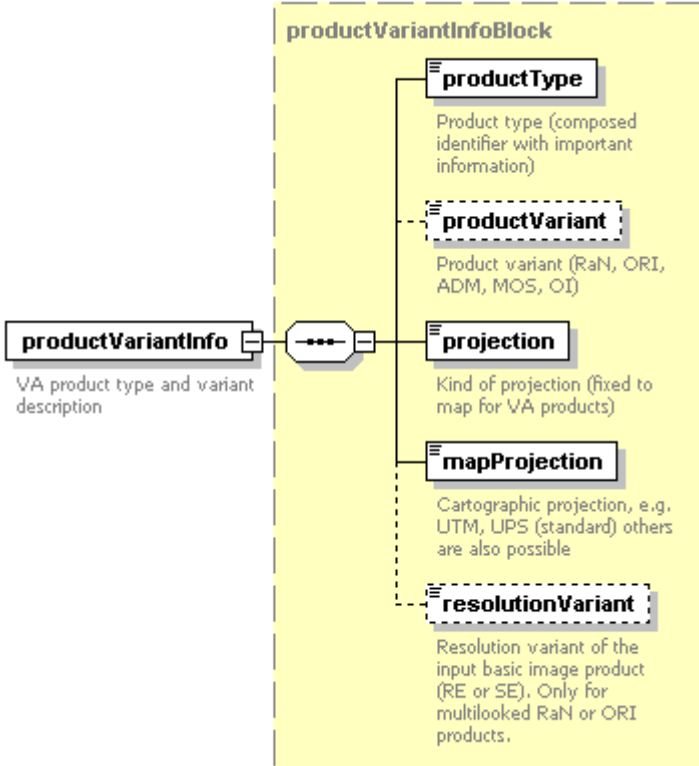
element **instrumentBlock/rxBandwidth**

diagram							
type	rxBandwidthBlock						
attributes	Name	Type	Use	Default	Fixed	Annotation	
	code	xs:int	required			documentation	Instrument code
annotation	documentation	RX Bandwidth [Hz] exact value (e.g. 150 or 300 MHz)					

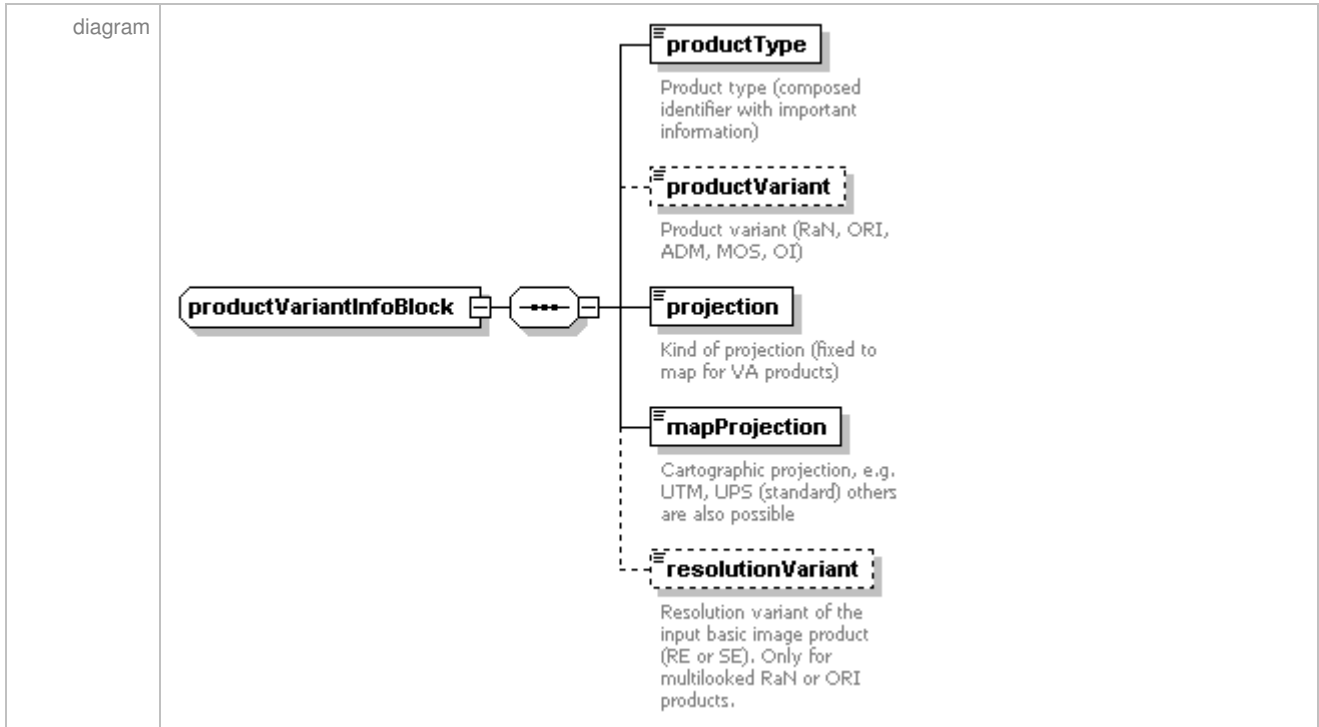
complexType **rxBandwidthBlock**

diagram							
attributes	Name	Type	Use	Default	Fixed	Annotation	
	code	xs:int	required			documentation	Instrument code

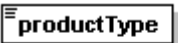
element **productInfoBlock/productVariantInfo**

<p>diagram</p>	 <pre> classDiagram class productVariantInfoBlock { productType productVariant projection mapProjection resolutionVariant } class productVariantInfo { VA product type and variant description } productVariantInfoBlock "1" *-- "1" productVariantInfo </pre>
<p>type</p>	<p>productVariantInfoBlock</p>
<p>annotation</p>	<p>documentation VA product type and variant description</p>

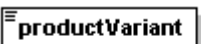
complexType **productVariantInfoBlock**



element **productVariantInfoBlock/productType**

diagram	 <p>productType Product type (composed identifier with important information)</p>
type	xs:string
annotation	documentation Product type (composed identifier with important information)

element **productVariantInfoBlock/productVariant**


diagram	 <p>productVariant Product variant (RaN, ORI, ADM, MOS, OI)</p>
type	productVariantValues
annotation	documentation Product variant (RaN, ORI, ADM, MOS, OI)

element **productVariantInfoBlock/projection**


diagram	 <p>projection Kind of projection (fixed to map for VA products)</p>
type	projectionValues

annotation	documentation Kind of projection (fixed to map for VA products)
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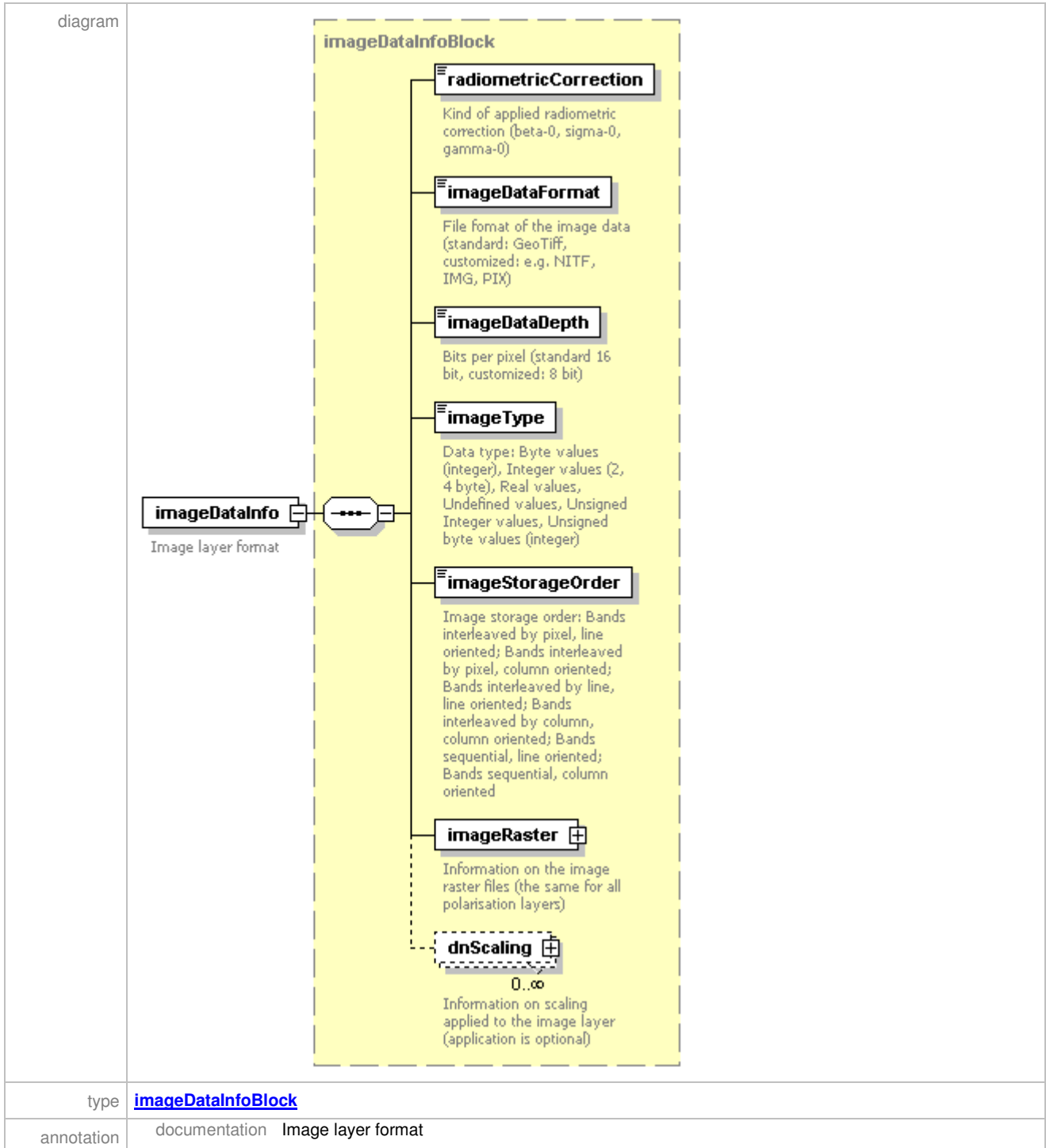
element **productVariantInfoBlock/mapProjection**

diagram	 <p>Cartographic projection, e.g. UTM, UPS (standard) others are also possible</p>
type	xs:string
annotation	documentation Cartographic projection, e.g. UTM, UPS (standard) others are also possible

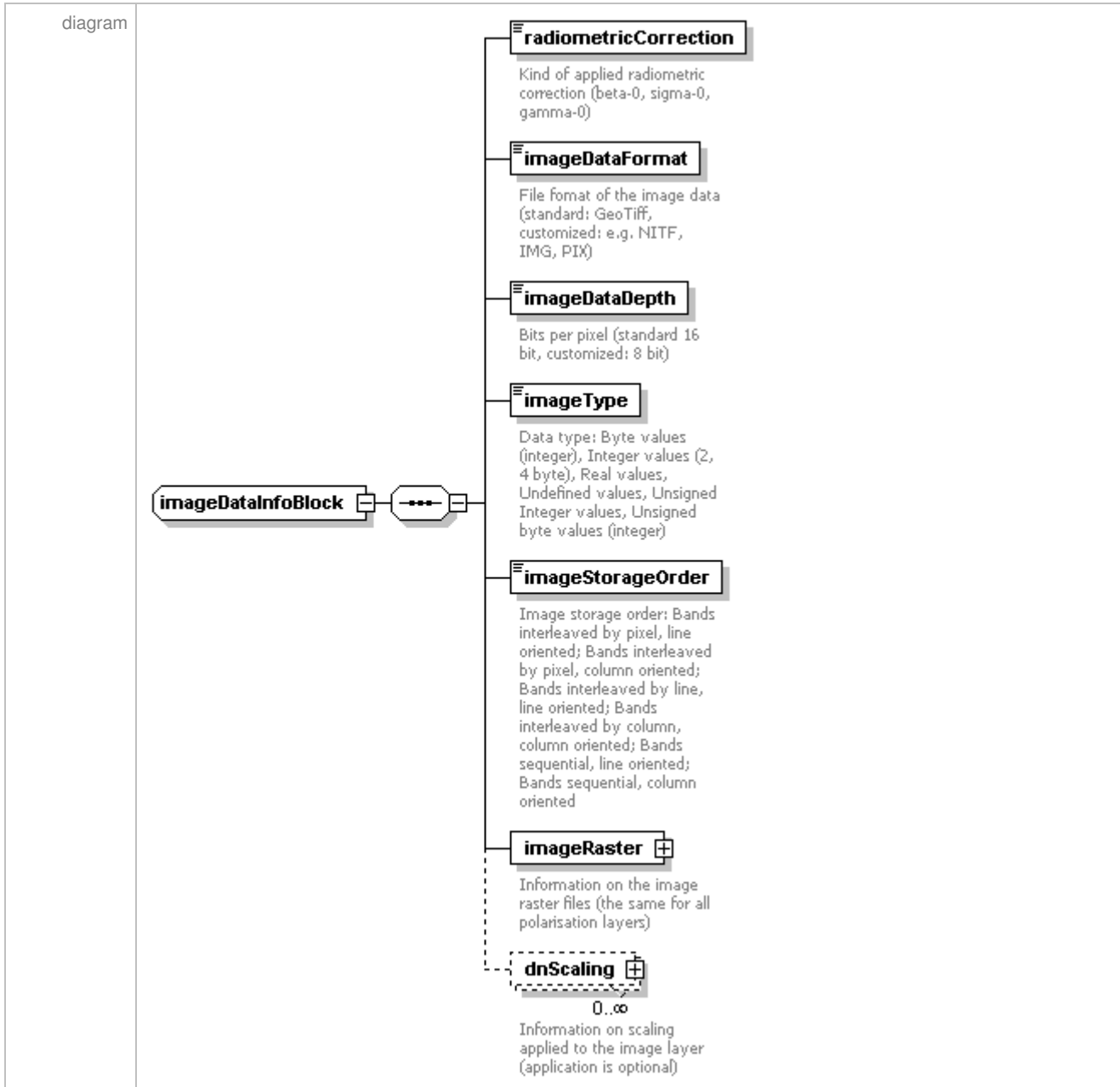
element **productVariantInfoBlock/resolutionVariant**

diagram	 <p>Resolution variant of the input basic image product (RE or SE). Only for multilooked RaN or ORI products.</p>
type	resolutionVariantValues
annotation	documentation Resolution variant of the input basic image product (RE or SE). Only for multilooked RaN or ORI products.

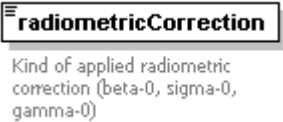
element **productInfoBlock/imageDataInfo**



complexType **imageDataInfoBlock**




element **imageDataInfoBlock/radiometricCorrection**

diagram	 <p>Kind of applied radiometric correction (beta-0, sigma-0, gamma-0)</p>
type	radiometricCorrectionValues
annotation	documentation Kind of applied radiometric correction (beta-0, sigma-0, gamma-0)


element **imageDataInfoBlock/imageDataFormat**

diagram	 <p>File format of the image data (standard: GeoTiff, customized: e.g. NITF, IMG, PIX)</p>
type	imageDataFormatValues
annotation	documentation File format of the image data (standard: GeoTiff, customized: e.g. NITF, IMG, PIX)


element **imageDataInfoBlock/imageDataDepth**

diagram	 <p>Bits per pixel (standard 16 bit, customized: 8 bit)</p>
type	xs:int
annotation	documentation Bits per pixel (standard 16 bit, customized: 8 bit)

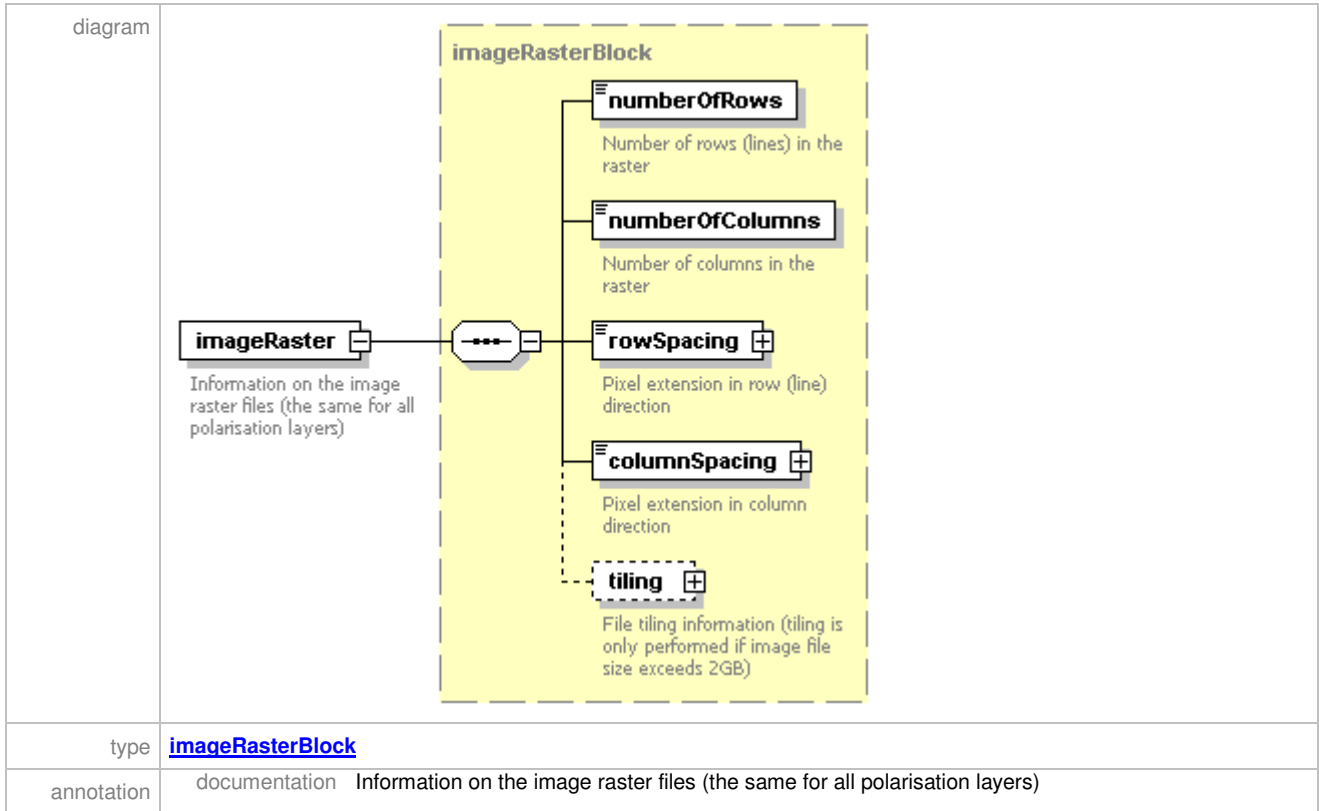
element **imageDataInfoBlock/imageType**

diagram	 <p>Data type: Byte values (integer), Integer values (2, 4 byte), Real values, Undefined values, Unsigned Integer values, Unsigned byte values (integer)</p>
type	imageTypeValues
annotation	documentation Data type: Byte values (integer), Integer values (2, 4 byte), Real values, Undefined values, Unsigned Integer values, Unsigned byte values (integer)

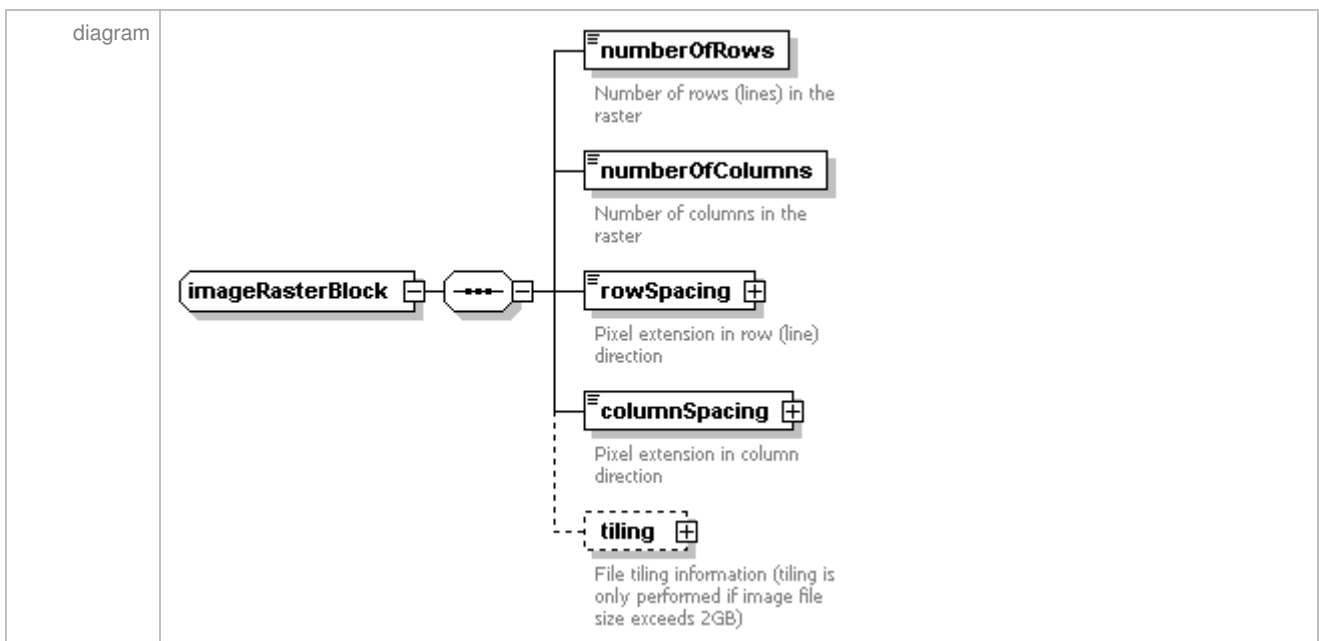
element **imageDataInfoBlock/imageStorageOrder**

diagram	 <p>Image storage order: Bands interleaved by pixel, line oriented; Bands interleaved by pixel, column oriented; Bands interleaved by line, line oriented; Bands interleaved by column, column oriented; Bands sequential, line oriented; Bands sequential, column oriented</p>
type	imageStorageOrderValues
annotation	documentation Image storage order: Bands interleaved by pixel, line oriented; Bands interleaved by pixel, column oriented; Bands interleaved by line, line oriented; Bands interleaved by column, column oriented; Bands sequential, line oriented; Bands sequential, column oriented

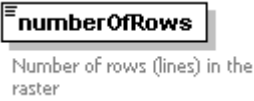
element **imageDataInfoBlock/imageRaster**




complexType **imageRasterBlock**



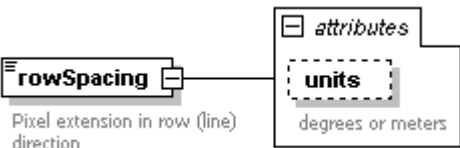
element imageRasterBlock/numberOfRows

diagram	
type	xs:int
annotation	documentation Number of rows (lines) in the raster

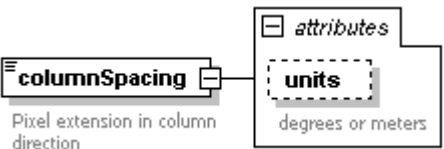
element imageRasterBlock/numberOfColumns

diagram	
type	xs:int
annotation	documentation Number of columns in the raster

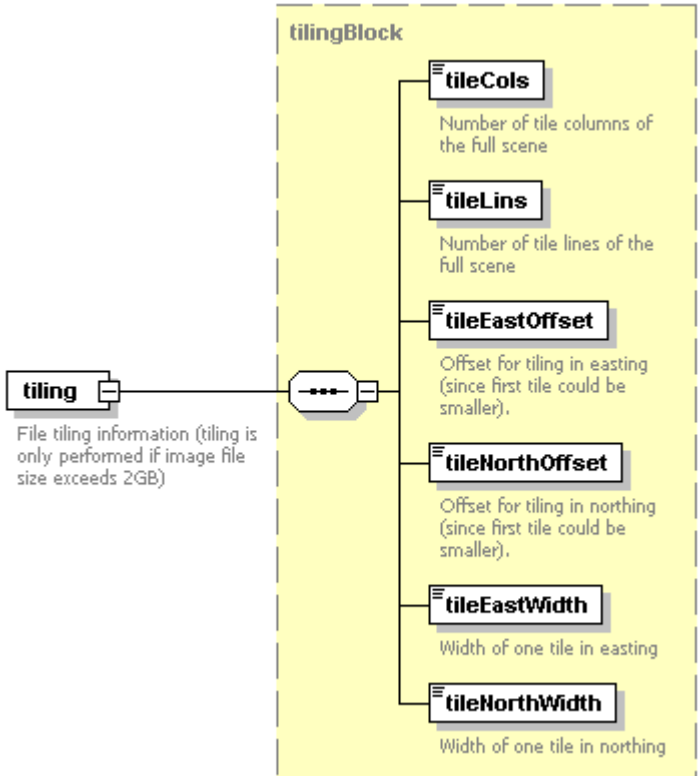
element imageRasterBlock/rowSpacing

diagram													
type	extension of xs:double												
attributes	<table border="1"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Use</th> <th>Default</th> <th>Fixed</th> <th>Annotation</th> </tr> </thead> <tbody> <tr> <td>units</td> <td>unitsValues</td> <td></td> <td></td> <td></td> <td>documentation degrees or meters</td> </tr> </tbody> </table>	Name	Type	Use	Default	Fixed	Annotation	units	unitsValues				documentation degrees or meters
Name	Type	Use	Default	Fixed	Annotation								
units	unitsValues				documentation degrees or meters								
annotation	documentation Pixel extension in row (line) direction												

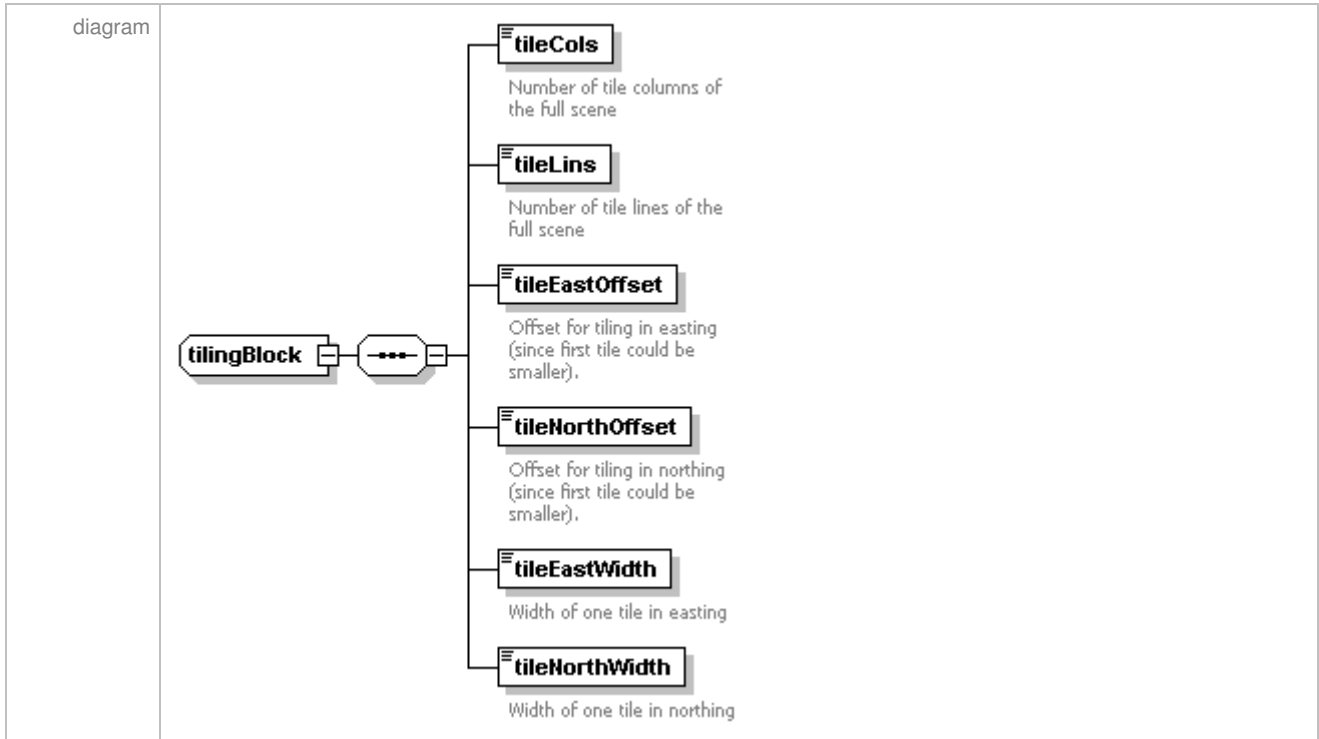
element imageRasterBlock/columnSpacing

diagram													
type	extension of xs:double												
attributes	<table border="1"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Use</th> <th>Default</th> <th>Fixed</th> <th>Annotation</th> </tr> </thead> <tbody> <tr> <td>units</td> <td>unitsValues</td> <td></td> <td></td> <td></td> <td>documentation degrees or meters</td> </tr> </tbody> </table>	Name	Type	Use	Default	Fixed	Annotation	units	unitsValues				documentation degrees or meters
Name	Type	Use	Default	Fixed	Annotation								
units	unitsValues				documentation degrees or meters								
annotation	documentation Pixel extension in column direction												


element **imageRasterBlock/tiling**

<p>diagram</p>	 <p>tiling File tiling information (tiling is only performed if image file size exceeds 2GB)</p> <p>tilingBlock</p> <ul style="list-style-type: none"> tileCols Number of tile columns of the full scene tileLins Number of tile lines of the full scene tileEastOffset Offset for tiling in easting (since first tile could be smaller). tileNorthOffset Offset for tiling in northing (since first tile could be smaller). tileEastWidth Width of one tile in easting tileNorthWidth Width of one tile in northing
<p>type</p>	<p>tilingBlock</p>
<p>annotation</p>	<p>documentation File tiling information (tiling is only performed if image file size exceeds 2GB)</p>


complexType **tilingBlock**



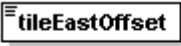
element **tilingBlock/tileCols**

diagram	
type	xs:int
annotation	documentation Number of tile columns of the full scene


element **tilingBlock/tileLins**

diagram	
type	xs:int
annotation	documentation Number of tile lines of the full scene

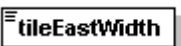
element **tilingBlock/tileEastOffset**

diagram	 <p>Offset for tiling in easting (since first tile could be smaller).</p>
type	xs:double
annotation	documentation Offset for tiling in easting (since first tile could be smaller).


element **tilingBlock/tileNorthOffset**

diagram	 <p>Offset for tiling in northing (since first tile could be smaller).</p>
type	xs:double
annotation	documentation Offset for tiling in northing (since first tile could be smaller).

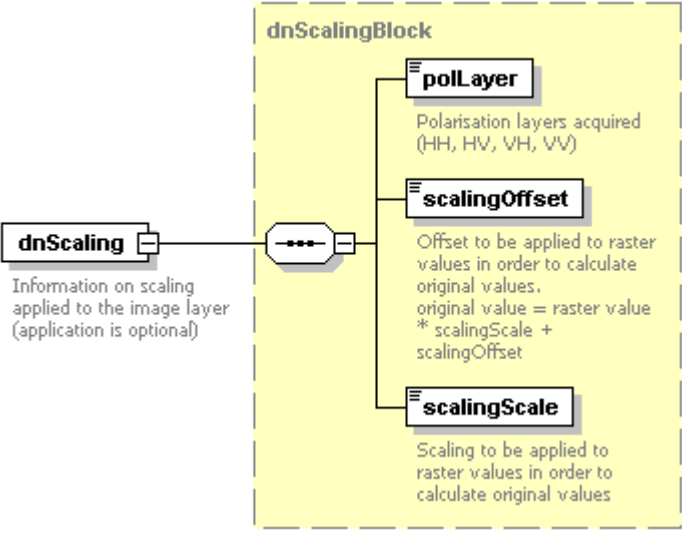
element **tilingBlock/tileEastWidth**

diagram	 <p>Width of one tile in easting</p>
type	xs:double
annotation	documentation Width of one tile in easting

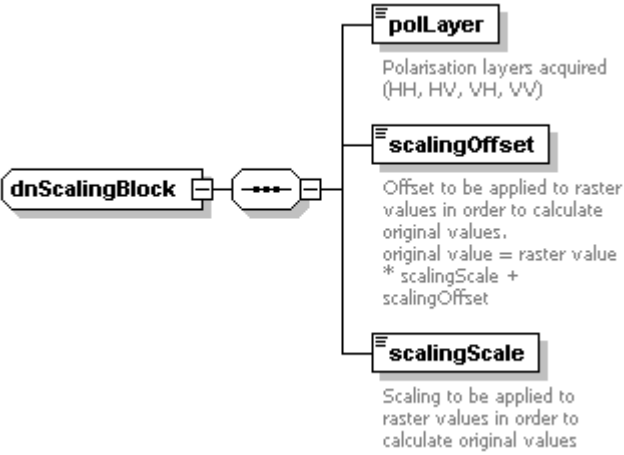
element **tilingBlock/tileNorthWidth**

diagram	 <p>Width of one tile in northing</p>
type	xs:double
annotation	documentation Width of one tile in northing


element **imageDataInfoBlock/dnScaling**

diagram	 <p>The diagram shows a dnScaling element connected to a dnScalingBlock. The dnScaling element is described as "Information on scaling applied to the image layer (application is optional)". The dnScalingBlock contains three sub-elements: polLayer (Polarisation layers acquired (HH, HV, VH, VV)), scalingOffset (Offset to be applied to raster values in order to calculate original values. original value = raster value * scalingScale + scalingOffset), and scalingScale (Scaling to be applied to raster values in order to calculate original values).</p>
type	dnScalingBlock
annotation	documentation Information on scaling applied to the image layer (application is optional)

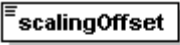
complexType **dnScalingBlock**

diagram	 <p>The diagram shows a dnScalingBlock element connected to a dashed-line box containing three sub-elements: polLayer (Polarisation layers acquired (HH, HV, VH, VV)), scalingOffset (Offset to be applied to raster values in order to calculate original values. original value = raster value * scalingScale + scalingOffset), and scalingScale (Scaling to be applied to raster values in order to calculate original values).</p>
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element **dnScalingBlock/polLayer**

diagram	 <p>The diagram shows a polLayer element described as "Polarisation layers acquired (HH, HV, VH, VV)".</p>
type	polLayerValue
annotation	documentation Polarisation layers acquired (HH, HV, VH, VV)

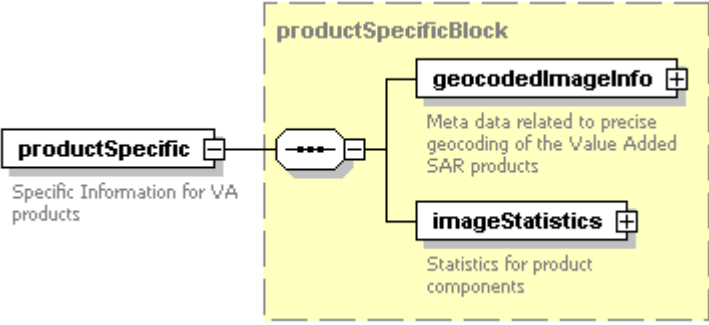
element **dnScalingBlock/scalingOffset**

diagram	 <p>Offset to be applied to raster values in order to calculate original values. original value = raster value * scalingScale + scalingOffset</p>
type	xs:double
annotation	documentation Offset to be applied to raster values in order to calculate original values. original value = raster value * scalingScale + scalingOffset

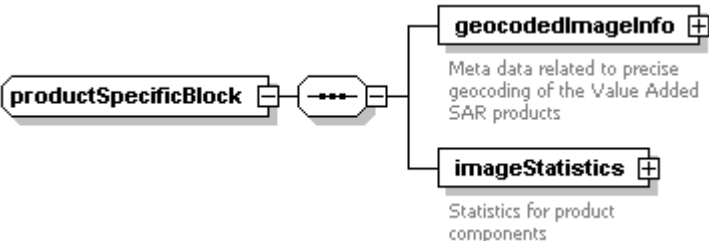
element **dnScalingBlock/scalingScale**

diagram	 <p>Scaling to be applied to raster values in order to calculate original values</p>
type	xs:double
annotation	documentation Scaling to be applied to raster values in order to calculate original values

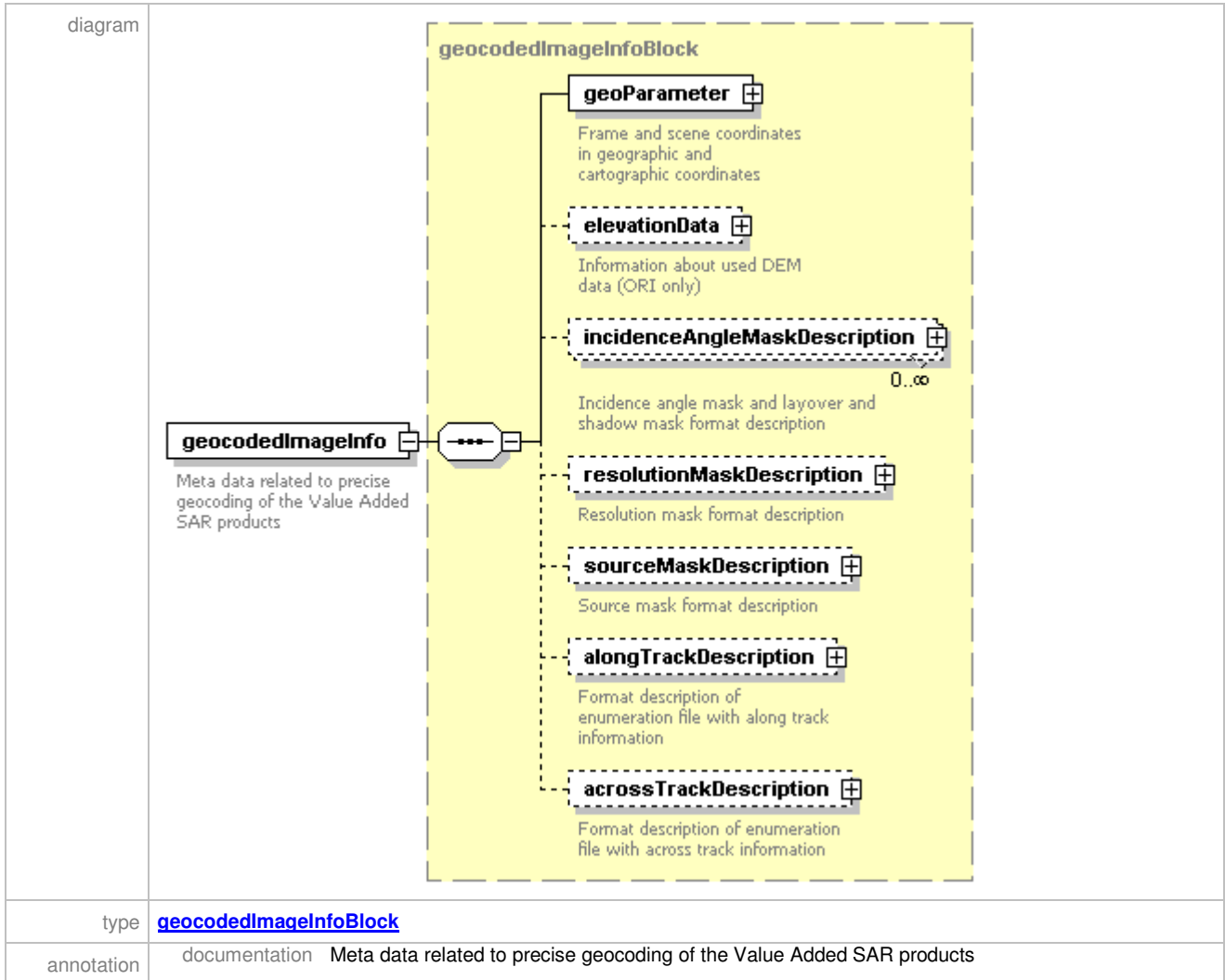
element **vaProduct/productSpecific**

diagram	
type	productSpecificBlock
annotation	documentation Specific Information for VA products

complexType **productSpecificBlock**

diagram	
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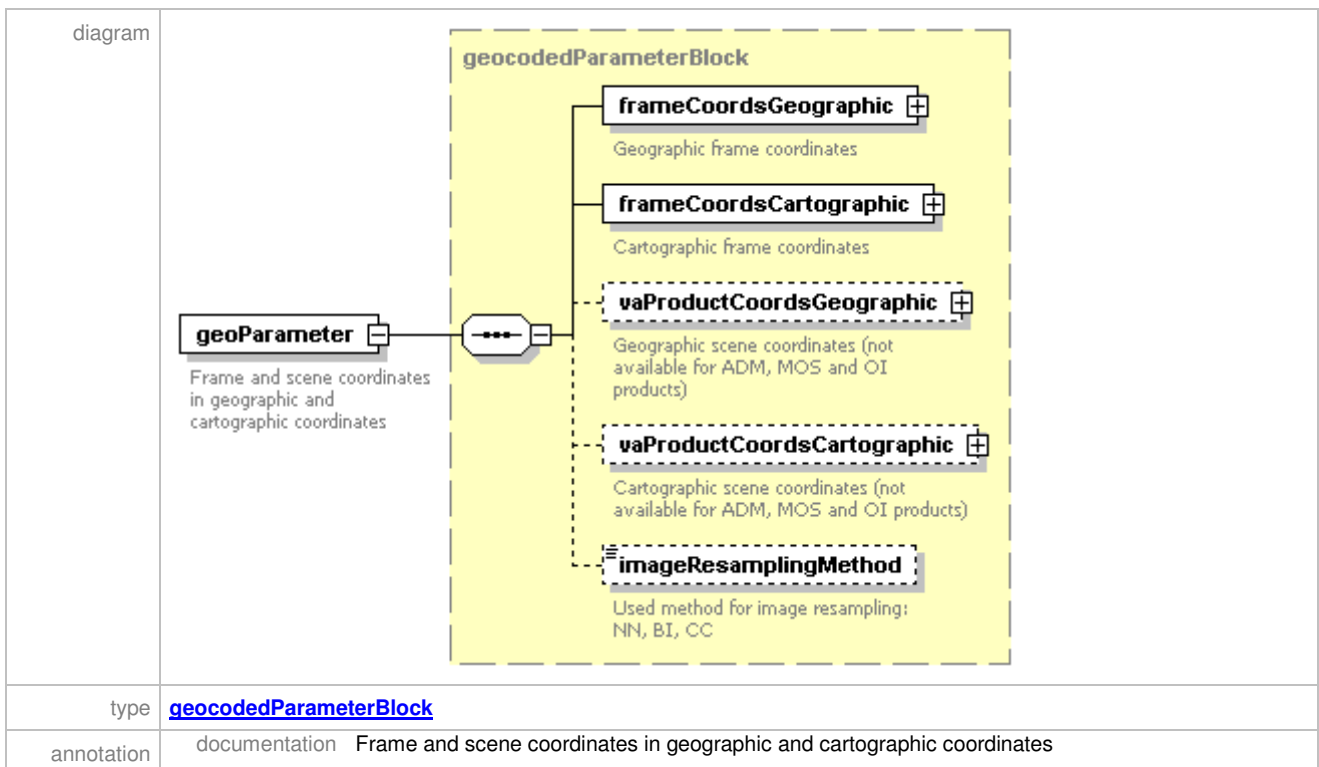
element **productSpecificBlock/geocodedImageInfo**



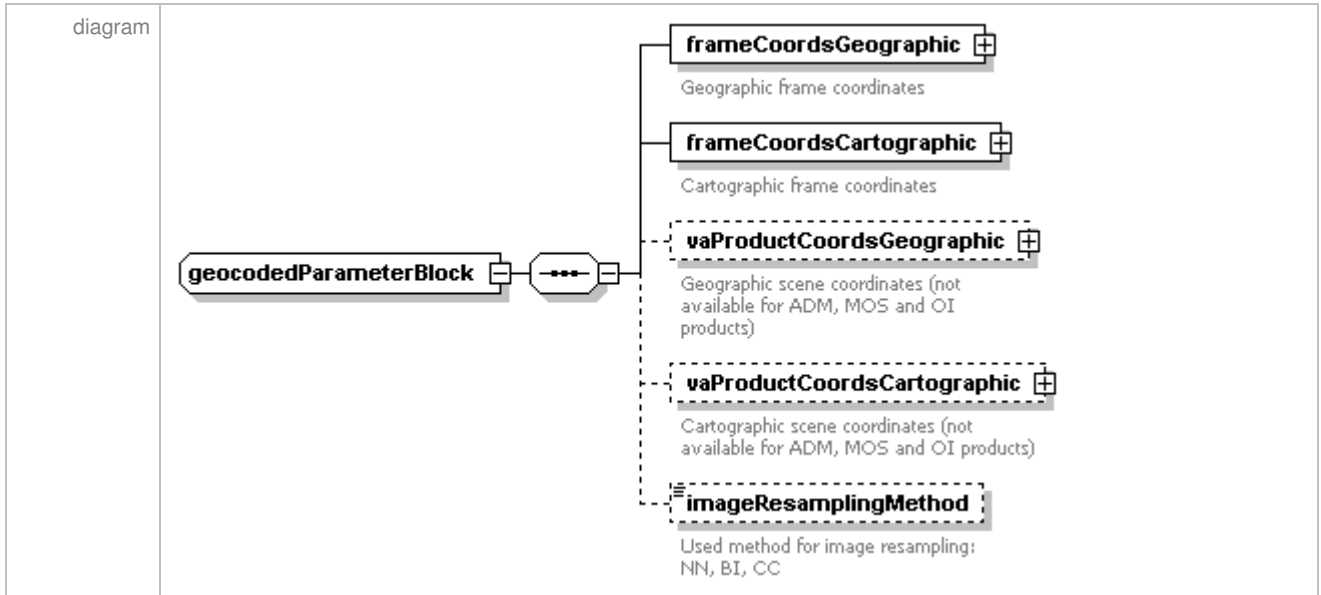
complexType **geocodedImageInfoBlock**



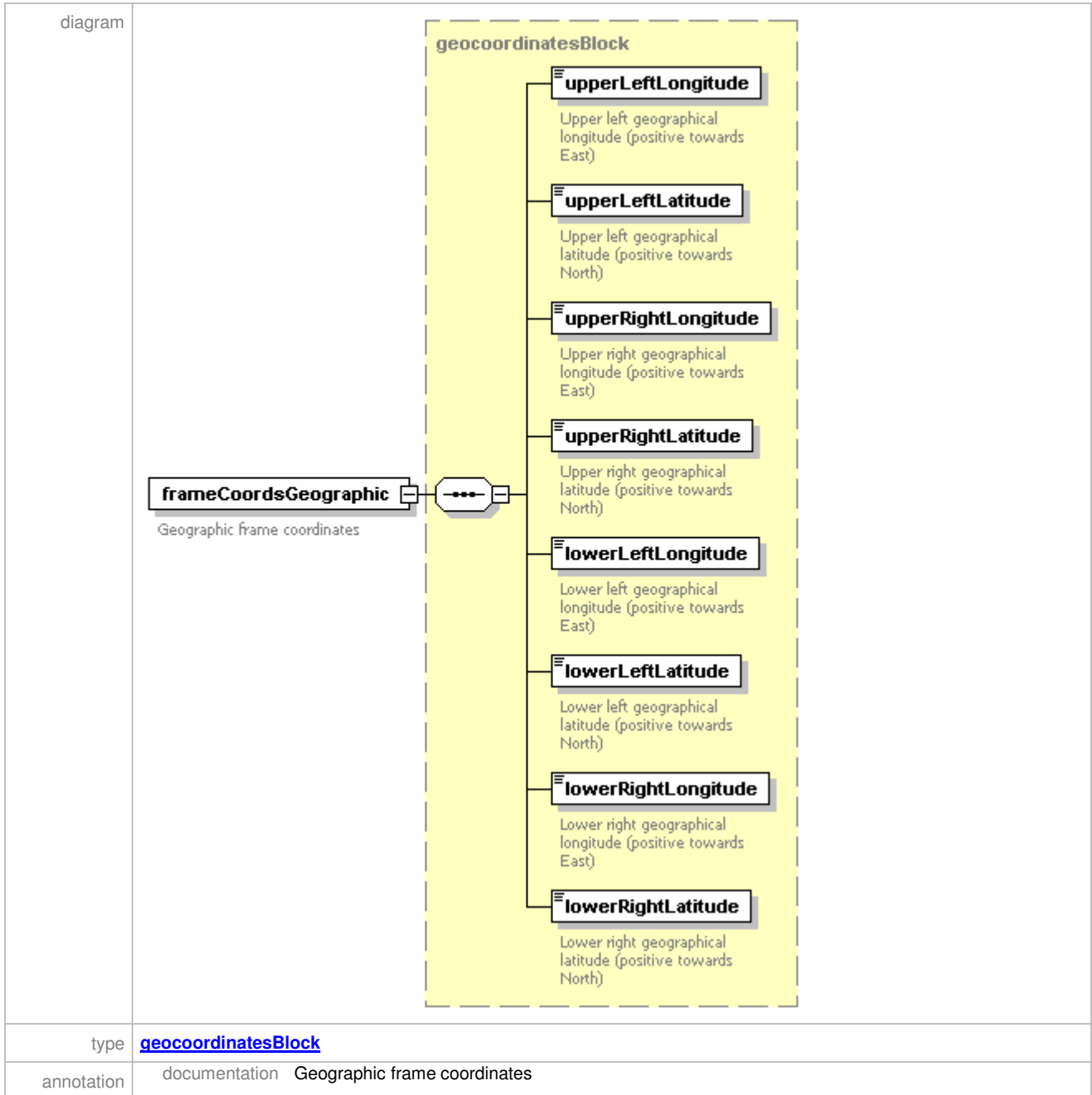
element **geocodedImageInfoBlock/geoParameter**



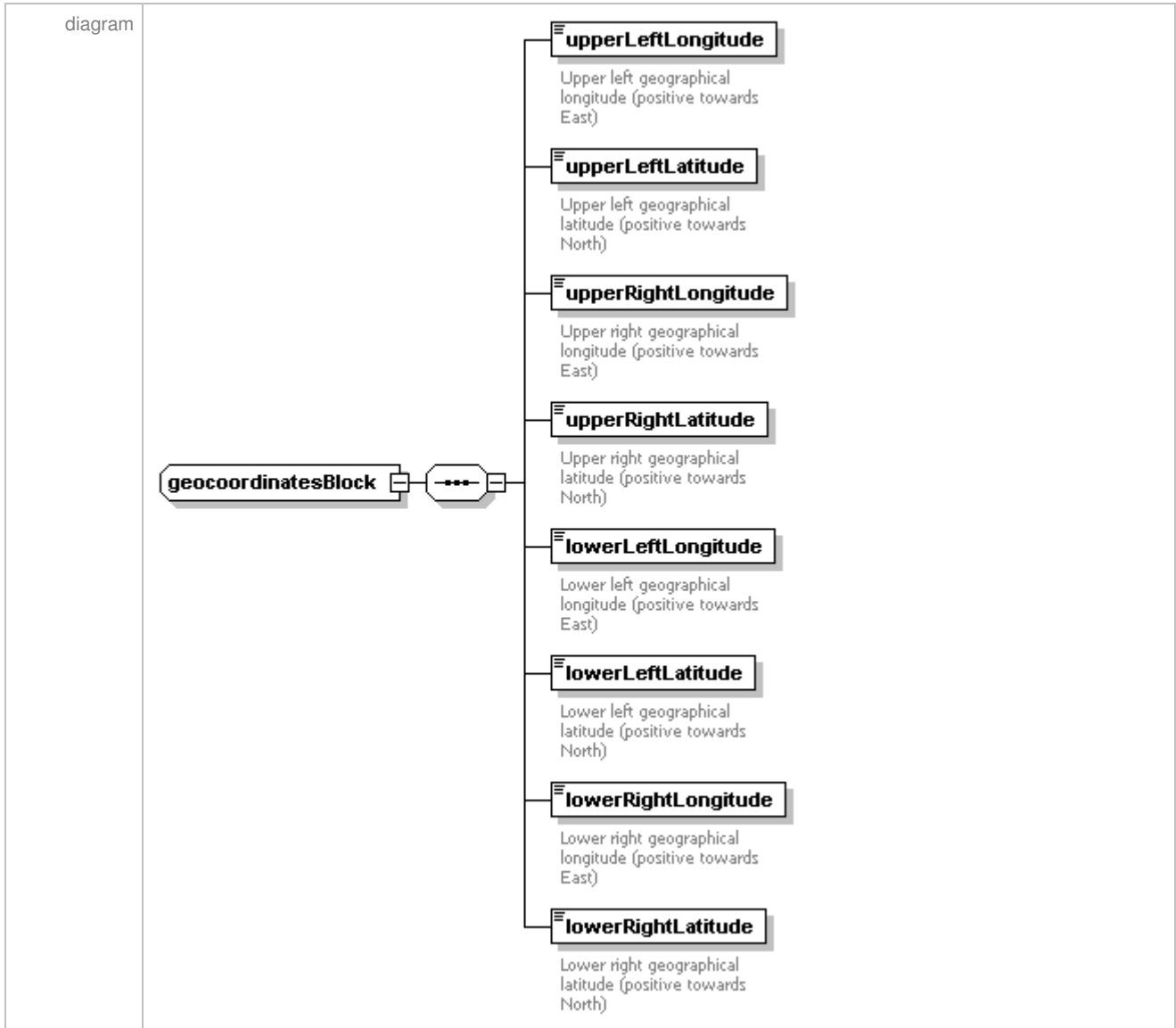
complexType **geocodedParameterBlock**




element **geocodedParameterBlock/frameCoordsGeographic**




complexType **geocoordinatesBlock**




element **geocoordinatesBlock/upperLeftLongitude**

diagram	 <pre> classDiagram class upperLeftLongitude { Upper left geographical longitude (positive towards East) } </pre>
type	xs:double
annotation	documentation Upper left geographical longitude (positive towards East)


element **geocoordinatesBlock/upperLeftLatitude**

diagram	 <p>Upper left geographical latitude (positive towards North)</p>
type	xs:double
annotation	documentation Upper left geographical latitude (positive towards North)


element **geocoordinatesBlock/upperRightLongitude**

diagram	 <p>Upper right geographical longitude (positive towards East)</p>
type	xs:double
annotation	documentation Upper right geographical longitude (positive towards East)


element **geocoordinatesBlock/upperRightLatitude**

diagram	 <p>Upper right geographical latitude (positive towards North)</p>
type	xs:double
annotation	documentation Upper right geographical latitude (positive towards North)


element **geocoordinatesBlock/lowerLeftLongitude**

diagram	 <p>Lower left geographical longitude (positive towards East)</p>
type	xs:double
annotation	documentation Lower left geographical longitude (positive towards East)


element **geocoordinatesBlock/lowerLeftLatitude**

diagram	 <p>Lower left geographical latitude (positive towards North)</p>
type	xs:double
annotation	documentation Lower left geographical latitude (positive towards North)

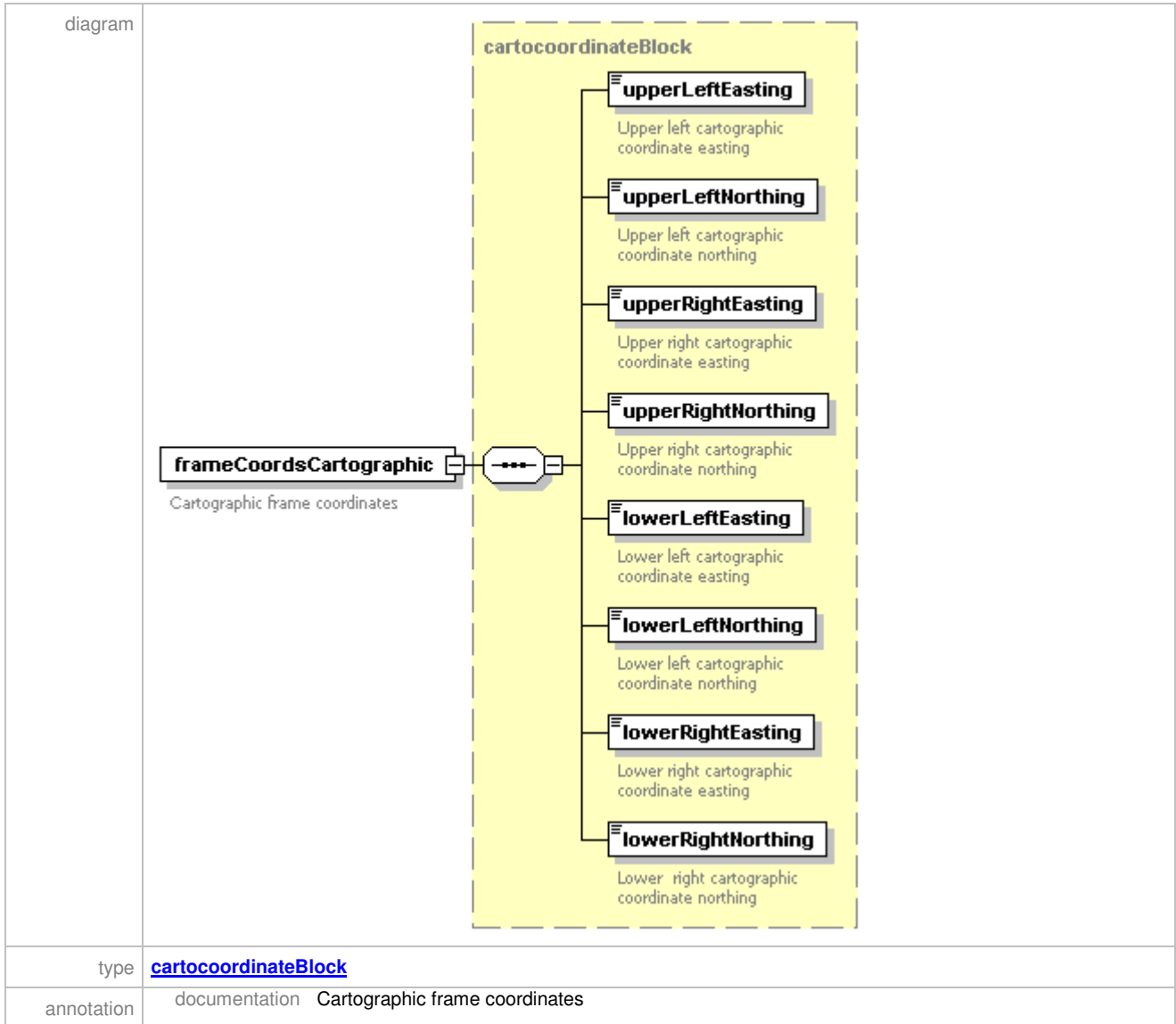
element **geocoordinatesBlock/lowerRightLongitude**

diagram	 <p>Lower right geographical longitude (positive towards East)</p>
type	xs:double
annotation	documentation Lower right geographical longitude (positive towards East)

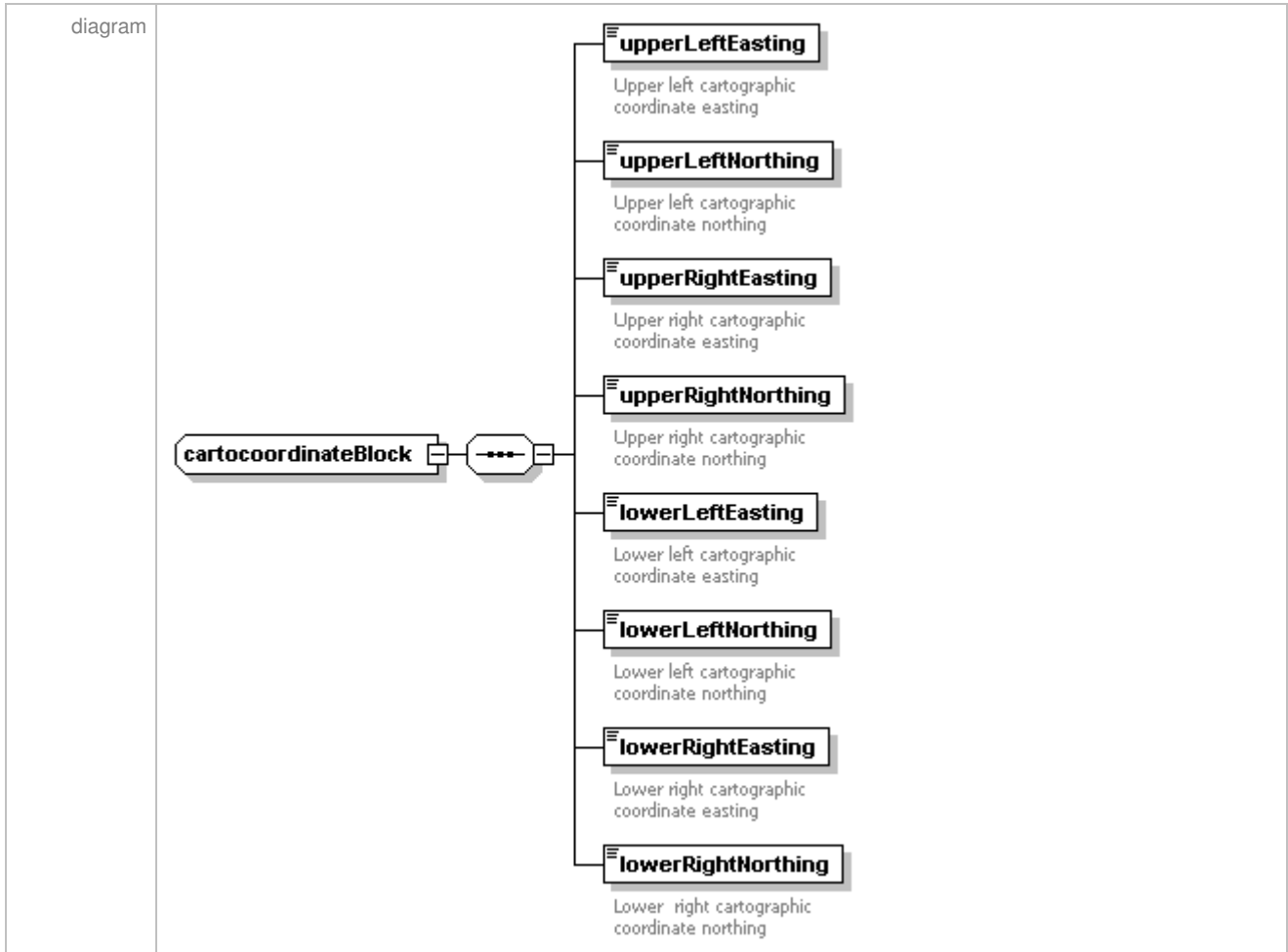
element **geocoordinatesBlock/lowerRightLatitude**

diagram	 <p>Lower right geographical latitude (positive towards North)</p>
type	xs:double
annotation	documentation Lower right geographical latitude (positive towards North)


element **geocodedParameterBlock/frameCoordsCartographic**




complexType **cartocoordinateBlock**




element **cartocoordinateBlock/upperLeftEasting**

diagram	 <p>Upper left cartographic coordinate easting</p>
type	xs:double
annotation	documentation Upper left cartographic coordinate easting


element **cartocoordinateBlock/upperLeftNorthing**

diagram	 <p>Upper left cartographic coordinate northing</p>
type	xs:double
annotation	documentation Upper left cartographic coordinate northing

element **cartocoordinateBlock/upperRightEasting**

diagram	 <p>Upper right cartographic coordinate easting</p>
type	xs:double
annotation	documentation Upper right cartographic coordinate easting


element **cartocoordinateBlock/upperRightNorthing**

diagram	 <p>Upper right cartographic coordinate northing</p>
type	xs:double
annotation	documentation Upper right cartographic coordinate northing


element **cartocoordinateBlock/lowerLeftEasting**

diagram	 <p>Lower left cartographic coordinate easting</p>
type	xs:double
annotation	documentation Lower left cartographic coordinate easting


element **cartocoordinateBlock/lowerLeftNorthing**

diagram	 <p>Lower left cartographic coordinate northing</p>
type	xs:double
annotation	documentation Lower left cartographic coordinate northing

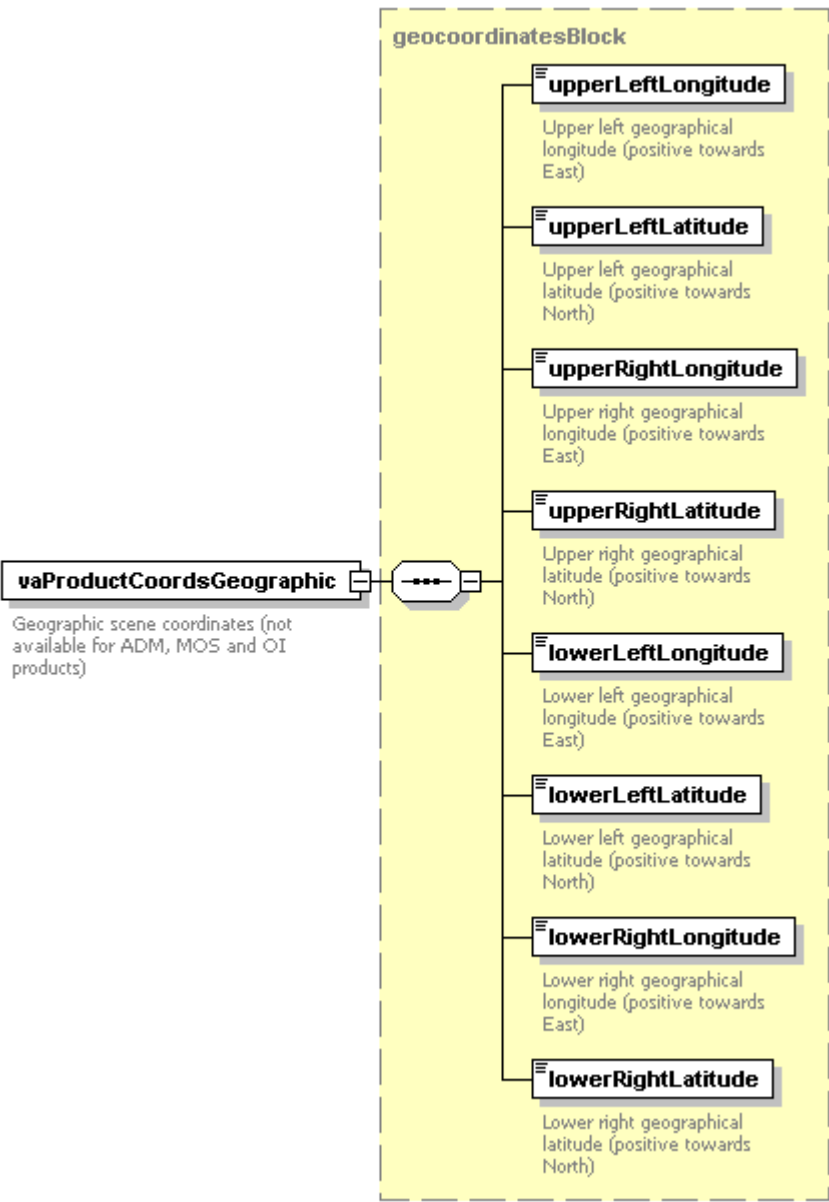
element **cartocoordinateBlock/lowerRightEasting**

diagram	 <p>Lower right cartographic coordinate easting</p>
type	xs:double
annotation	documentation Lower right cartographic coordinate easting

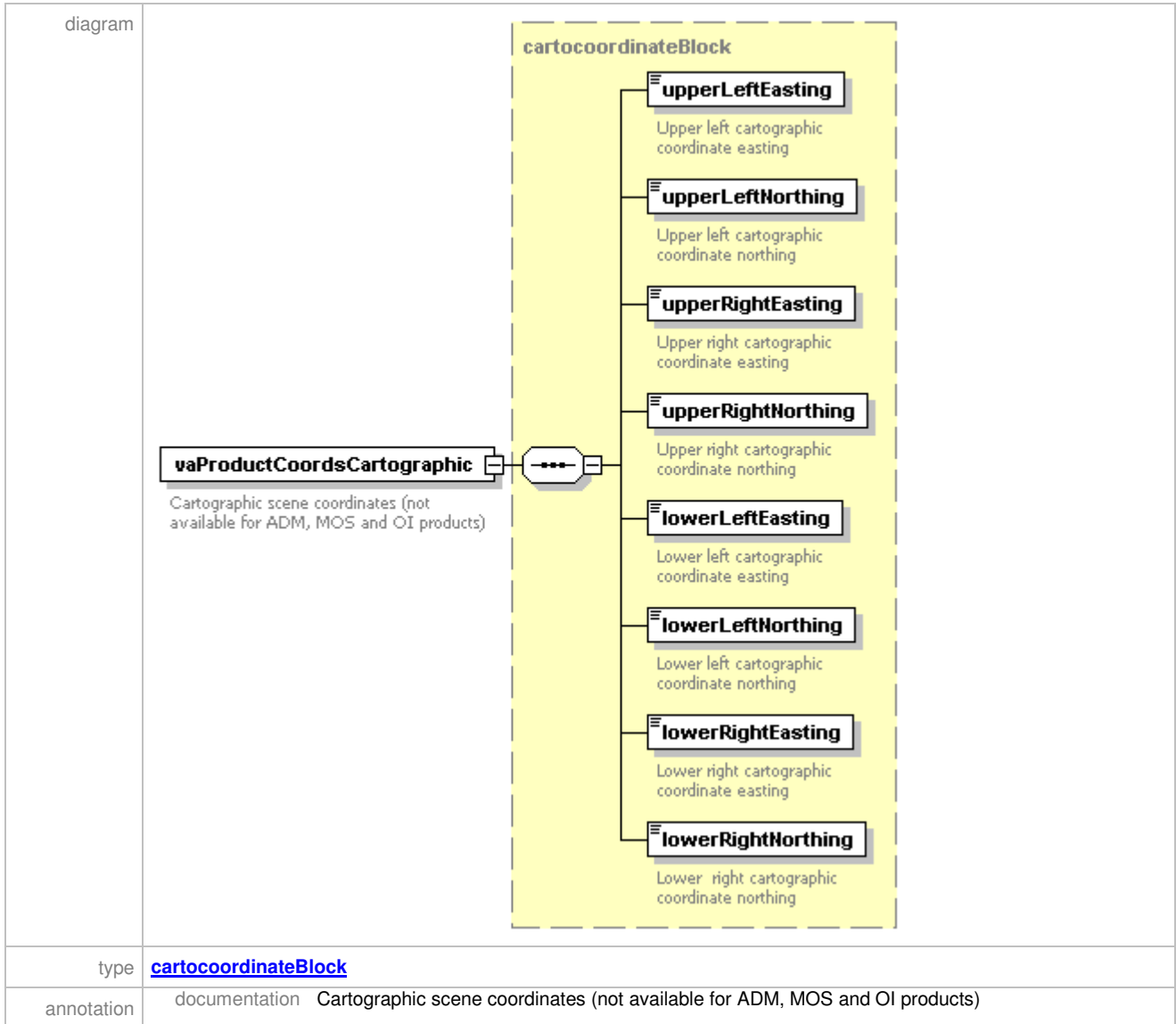
element **cartocoordinateBlock/lowerRightNorthing**

diagram	 <p>Lower right cartographic coordinate northing</p>
type	xs:double
annotation	documentation Lower right cartographic coordinate northing

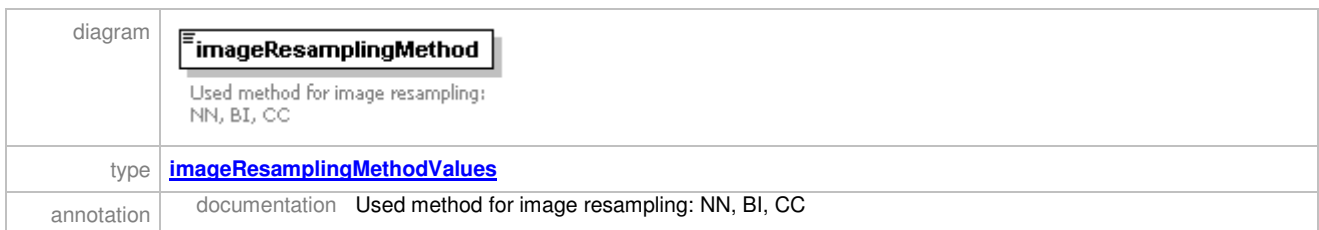
element **geocodedParameterBlock/vaProductCoordsGeographic**

diagram	 <p>vaProductCoordsGeographic Geographic scene coordinates (not available for ADM, MOS and OI products)</p> <p>geocoordinatesBlock</p> <ul style="list-style-type: none"> upperLeftLongitude Upper left geographical longitude (positive towards East) upperLeftLatitude Upper left geographical latitude (positive towards North) upperRightLongitude Upper right geographical longitude (positive towards East) upperRightLatitude Upper right geographical latitude (positive towards North) lowerLeftLongitude Lower left geographical longitude (positive towards East) lowerLeftLatitude Lower left geographical latitude (positive towards North) lowerRightLongitude Lower right geographical longitude (positive towards East) lowerRightLatitude Lower right geographical latitude (positive towards North)
type	geocoordinatesBlock
annotation	documentation Geographic scene coordinates (not available for ADM, MOS and OI products)

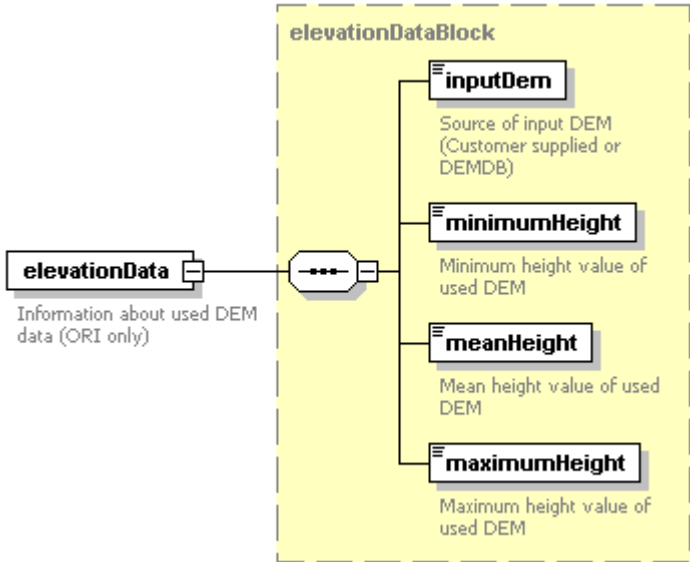
element **geocodedParameterBlock/vaProductCoordsCartographic**



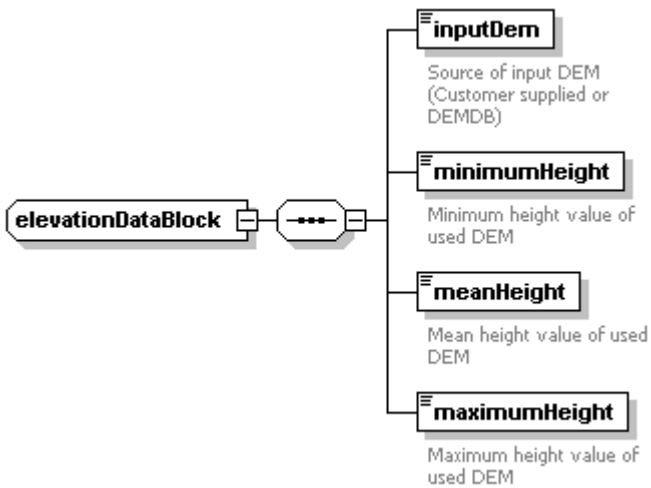
element **geocodedParameterBlock/imageResamplingMethod**




element **geocodedImageInfoBlock/elevationData**

<p>diagram</p>	 <pre> classDiagram class elevationData { Information about used DEM data (ORI only) } class elevationDataBlock { inputDem minimumHeight meanHeight maximumHeight } elevationData "1" *-- "1" elevationDataBlock </pre>
<p>type</p>	<p>elevationDataBlock</p>
<p>annotation</p>	<p>documentation Information about used DEM data (ORI only)</p>


complexType **elevationDataBlock**

<p>diagram</p>	 <pre> classDiagram class elevationDataBlock { inputDem minimumHeight meanHeight maximumHeight } </pre>
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element **elevationDataBlock/inputDem**

<p>diagram</p>	 <pre> classDiagram class inputDem { Source of input DEM (Customer supplied or DEMDB) } </pre>
<p>type</p>	<p>inputDemValues</p>
<p>annotation</p>	<p>documentation Source of input DEM (Customer supplied or DEMDB)</p>


element **elevationDataBlock/minimumHeight**

diagram	 <p>Minimum height value of used DEM</p>
type	xs:double
annotation	documentation Minimum height value of used DEM

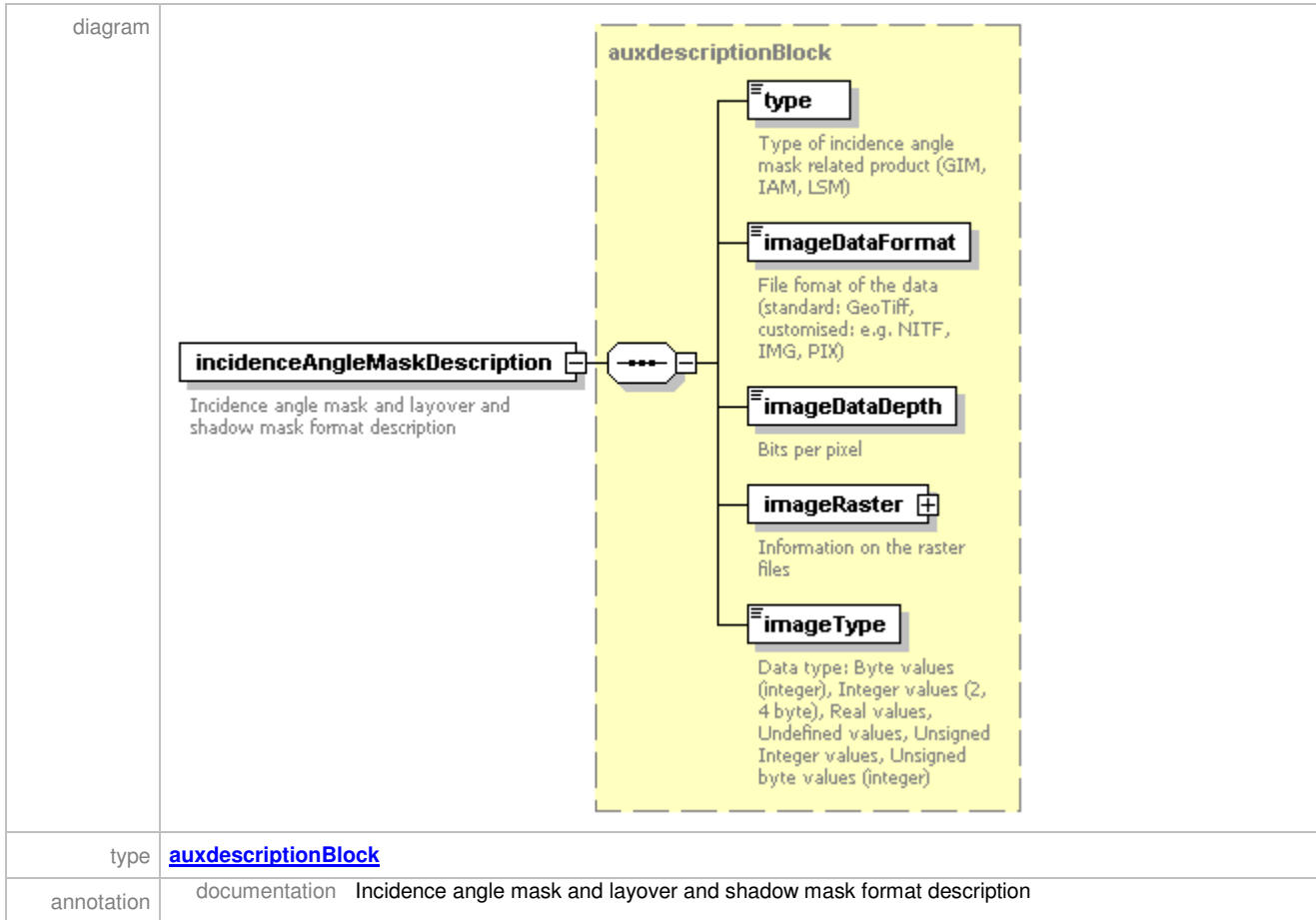
element **elevationDataBlock/meanHeight**

diagram	 <p>Mean height value of used DEM</p>
type	xs:double
annotation	documentation Mean height value of used DEM

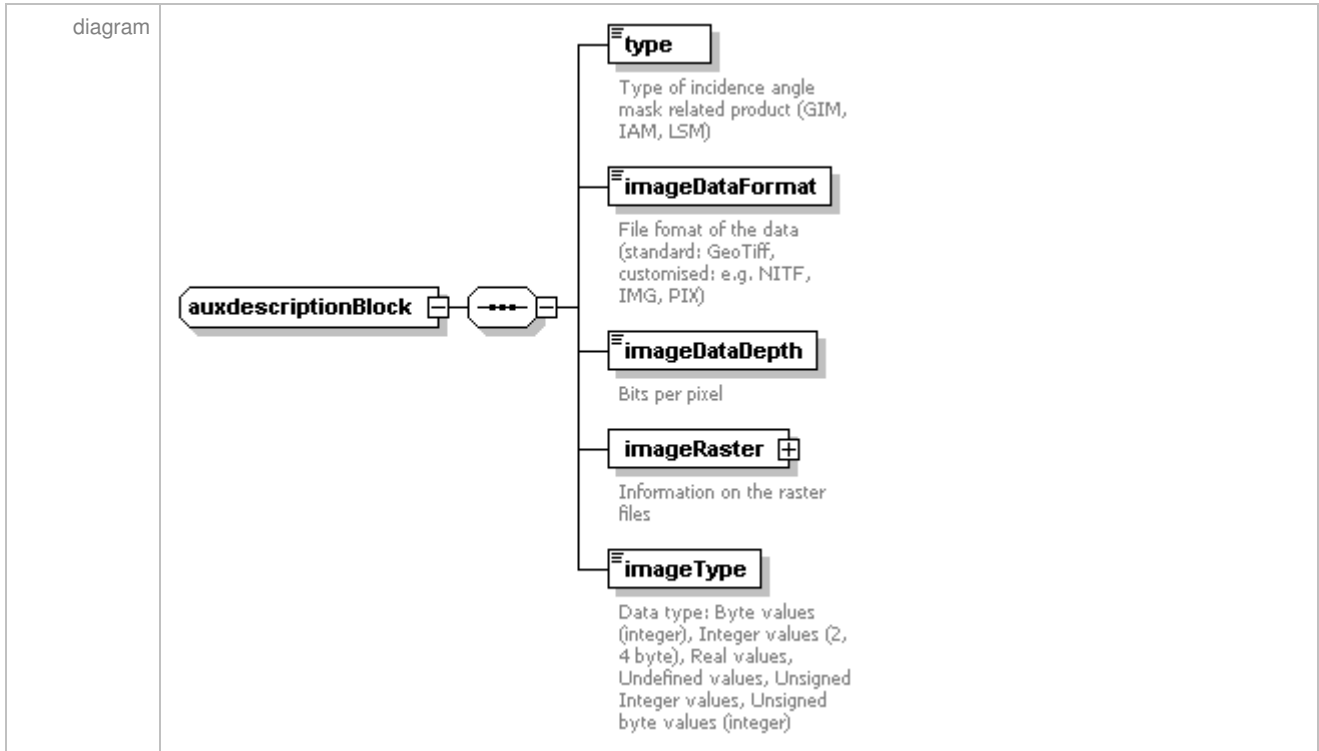
element **elevationDataBlock/maximumHeight**

diagram	 <p>Maximum height value of used DEM</p>
type	xs:double
annotation	documentation Maximum height value of used DEM

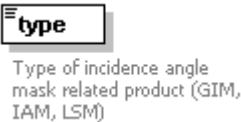
element **geocodedImageInfoBlock/incidenceAngleMaskDescription**



complexType **auxdescriptionBlock**



element **auxdescriptionBlock/type**

diagram	 <pre> classDiagram class type { Type of incidence angle mask related product (GIM, IAM, LSM) } </pre>
type	iamTypeValues
annotation	documentation Type of incidence angle mask related product (GIM, IAM, LSM)

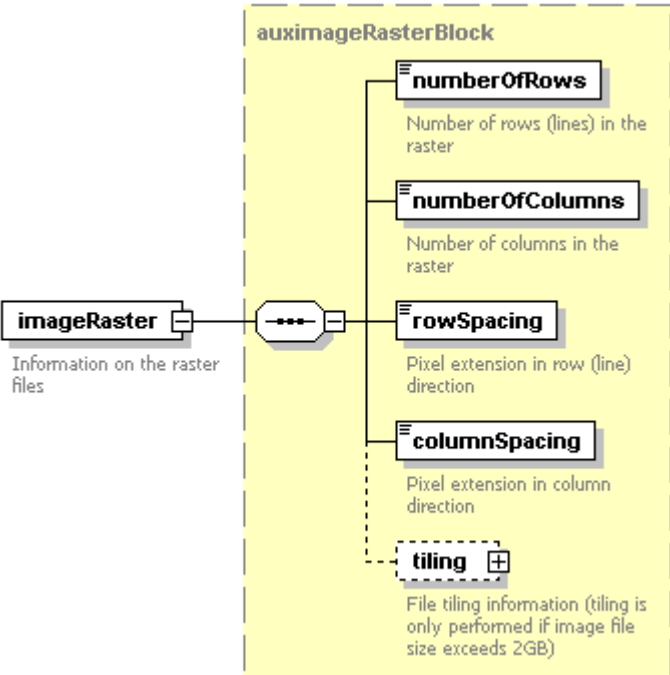
element **auxdescriptionBlock/imageDataFormat**

diagram	 <pre> classDiagram class imageDataFormat { File format of the data (standard: GeoTiff, customised: e.g. NITF, IMG, PIX) } </pre>
type	imageDataFormatValues
annotation	documentation File format of the data (standard: GeoTiff, customised: e.g. NITF, IMG, PIX)

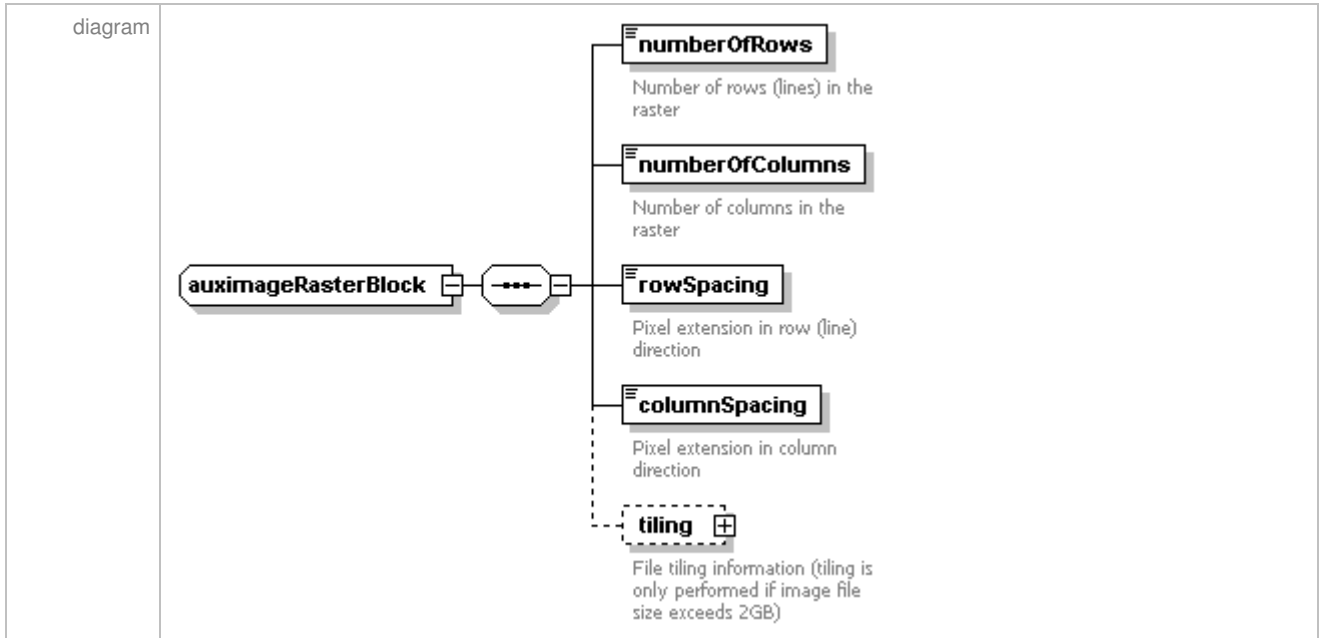
element **auxdescriptionBlock/imageDataDepth**

diagram	 <p>imageDataDepth Bits per pixel</p>
type	xs:int
annotation	documentation Bits per pixel


element **auxdescriptionBlock/imageRaster**

diagram	 <p>imageRaster Information on the raster files</p> <p>auximageRasterBlock</p> <ul style="list-style-type: none"> numberOfRows Number of rows (lines) in the raster numberOfColumns Number of columns in the raster rowSpacing Pixel extension in row (line) direction columnSpacing Pixel extension in column direction tiling + File tiling information (tiling is only performed if image file size exceeds 2GB)
type	auximageRasterBlock
annotation	documentation Information on the raster files


complexType **auximageRasterBlock**




element **auximageRasterBlock/numberOfRows**

diagram	 <p>Number of rows (lines) in the raster</p>
type	xs:int
annotation	documentation Number of rows (lines) in the raster

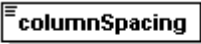
element **auximageRasterBlock/numberOfColumns**

diagram	 <p>Number of columns in the raster</p>
type	xs:int
annotation	documentation Number of columns in the raster

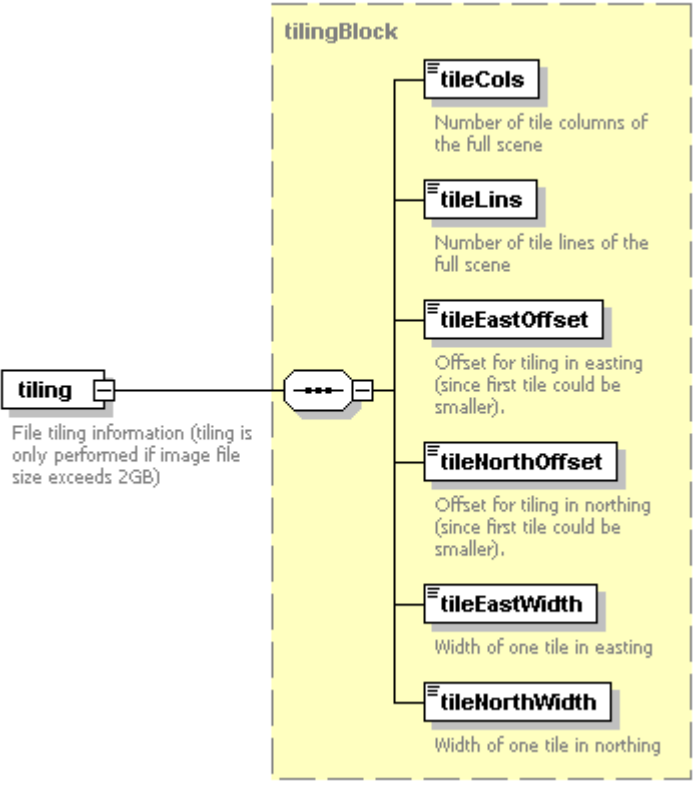
element **auximageRasterBlock/rowSpacing**

diagram	 <p>Pixel extension in row (line) direction</p>
type	xs:double
annotation	documentation Pixel extension in row (line) direction


element `auximageRasterBlock/columnSpacing`

diagram	 <p>columnSpacing Pixel extension in column direction</p>
type	xs:double
annotation	documentation Pixel extension in column direction

element `auximageRasterBlock/tiling`

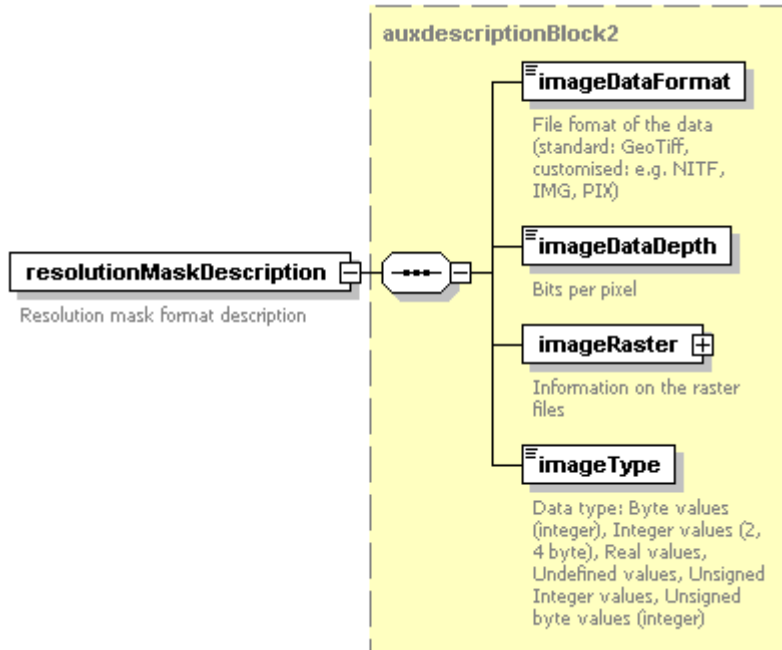
diagram	 <p>tiling File tiling information (tiling is only performed if image file size exceeds 2GB)</p> <p>tilingBlock</p> <ul style="list-style-type: none"> tileCols: Number of tile columns of the full scene tileLins: Number of tile lines of the full scene tileEastOffset: Offset for tiling in easting (since first tile could be smaller). tileNorthOffset: Offset for tiling in northing (since first tile could be smaller). tileEastWidth: Width of one tile in easting tileNorthWidth: Width of one tile in northing
type	tilingBlock
annotation	documentation File tiling information (tiling is only performed if image file size exceeds 2GB)

element `auxdescriptionBlock/imageType`

diagram	 <p>imageType Data type: Byte values (integer), Integer values (2, 4 byte), Real values, Undefined values, Unsigned Integer values, Unsigned byte values (integer)</p>
type	imageTypeValues
annotation	documentation Data type: Byte values (integer), Integer values (2, 4 byte), Real values, Undefined values, Unsigned Integer values, Unsigned byte values (integer)

element **geocodedImageInfoBlock/resolutionMaskDescription**

diagram

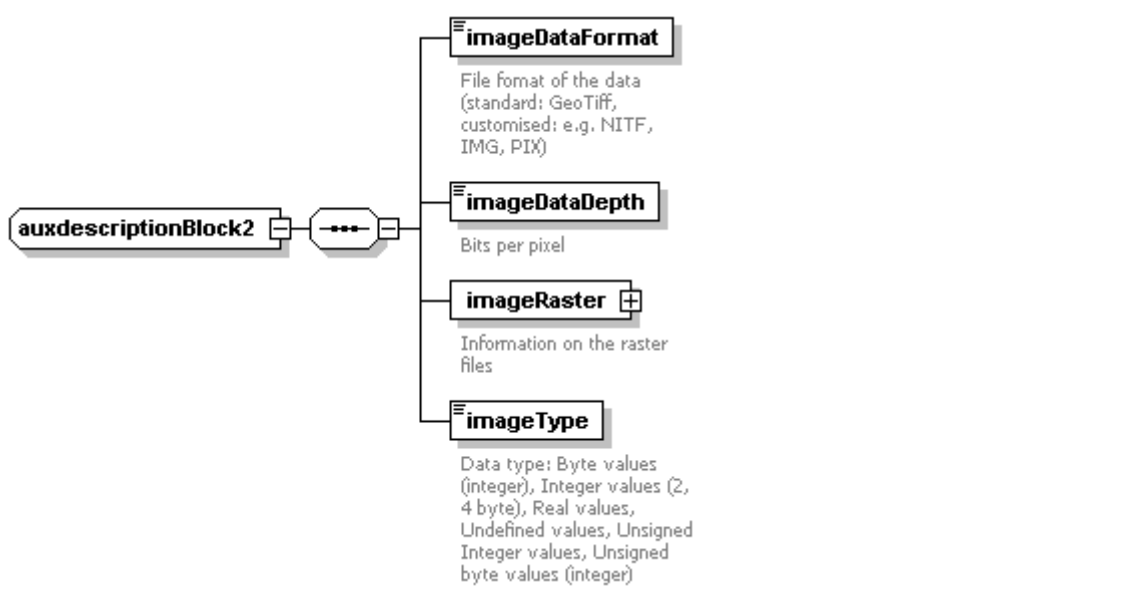


type [auxdescriptionBlock2](#)

annotation documentation Resolution mask format description

complexType **auxdescriptionBlock2**

diagram



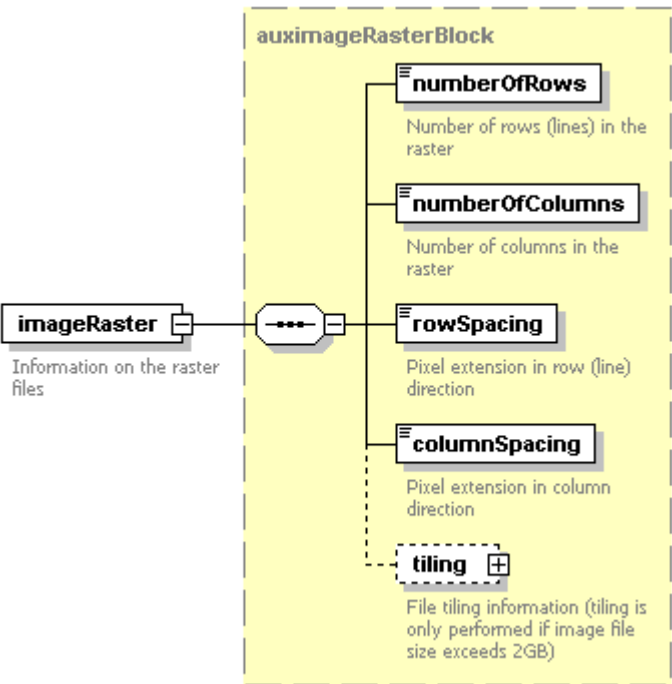
element **auxdescriptionBlock2/imageDataFormat**

diagram	 <p>File format of the data (standard: GeoTiff, customised: e.g. NITF, IMG, PIX)</p>
type	imageDataFormatValues
annotation	documentation File format of the data (standard: GeoTiff, customised: e.g. NITF, IMG, PIX)


element **auxdescriptionBlock2/imageDataDepth**

diagram	 <p>Bits per pixel</p>
type	xs:int
annotation	documentation Bits per pixel

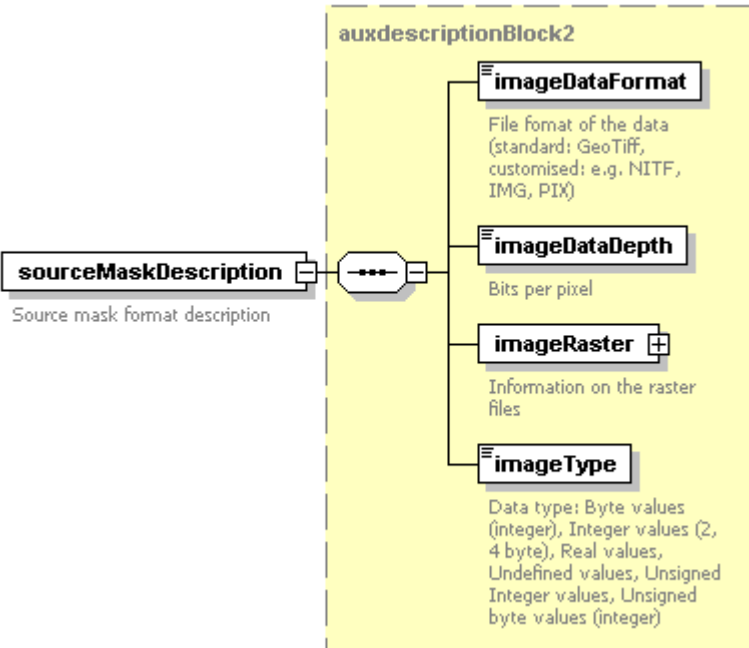
element **auxdescriptionBlock2/imageRaster**

diagram	 <p>The diagram shows the imageRaster element (Information on the raster files) connected to the auximageRasterBlock. The auximageRasterBlock contains the following sub-elements:</p> <ul style="list-style-type: none"> numberOfRows: Number of rows (lines) in the raster numberOfColumns: Number of columns in the raster rowSpacing: Pixel extension in row (line) direction columnSpacing: Pixel extension in column direction tiling: File tiling information (tiling is only performed if image file size exceeds 2GB)
type	auximageRasterBlock
annotation	documentation Information on the raster files

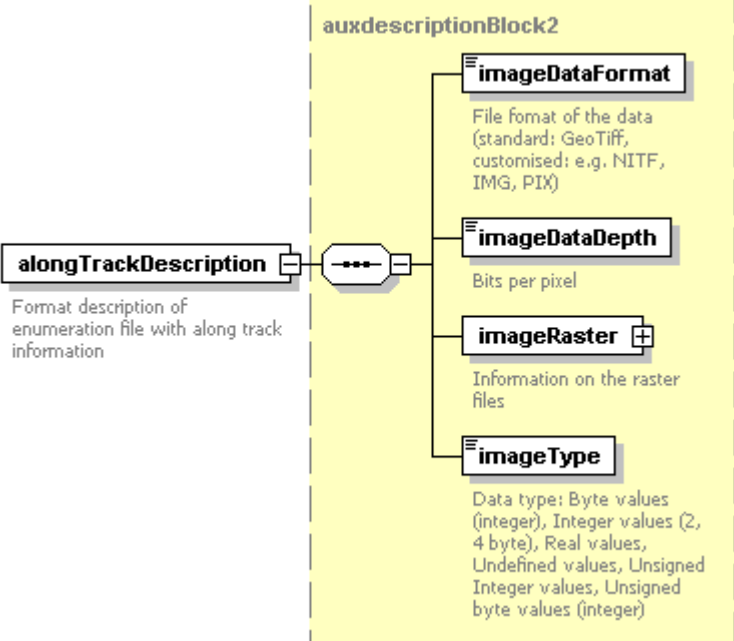
element **auxdescriptionBlock2/imageType**

diagram	 <p>imageType Data type: Byte values (integer), Integer values (2, 4 byte), Real values, Undefined values, Unsigned Integer values, Unsigned byte values (integer)</p>
type	imageTypeValues
annotation	documentation Data type: Byte values (integer), Integer values (2, 4 byte), Real values, Undefined values, Unsigned Integer values, Unsigned byte values (integer)

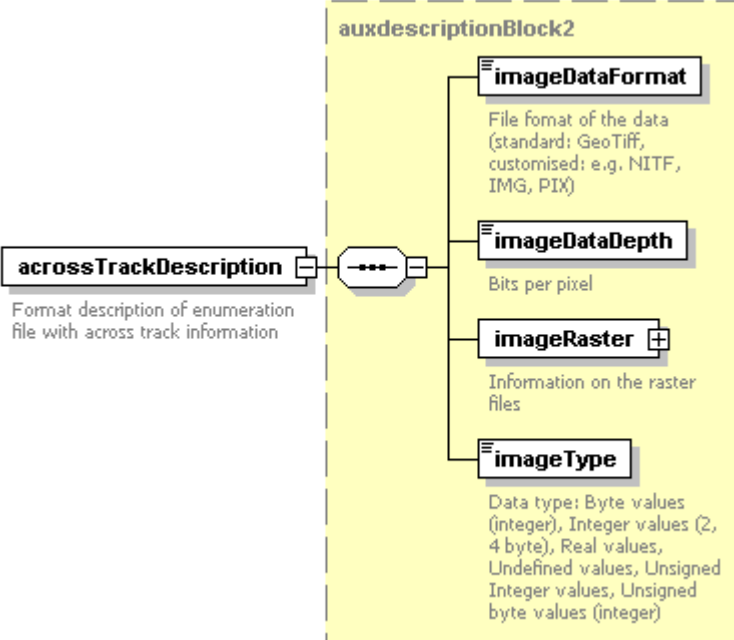
element **geocodedImageInfoBlock/sourceMaskDescription**

diagram	 <p>sourceMaskDescription Source mask format description</p> <p>auxdescriptionBlock2</p> <ul style="list-style-type: none"> imageDataFormat File format of the data (standard: GeoTiff, customised: e.g. NITF, IMG, PIX) imageDataDepth Bits per pixel imageRaster + Information on the raster files imageType Data type: Byte values (integer), Integer values (2, 4 byte), Real values, Undefined values, Unsigned Integer values, Unsigned byte values (integer)
type	auxdescriptionBlock2
annotation	documentation Source mask format description

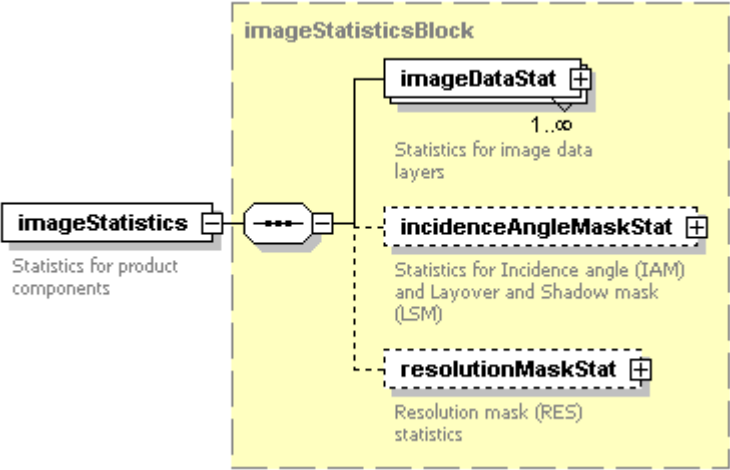
element **geocodedImageInfoBlock/alongTrackDescription**

<p>diagram</p>	 <p>The diagram shows a class alongTrackDescription with a description: "Format description of enumeration file with along track information". It is connected to a dashed box labeled auxdescriptionBlock2. Inside this box, alongTrackDescription has four associations: imageDataFormat (File format of the data (standard: GeoTiff, customised: e.g. NITF, IMG, PIX)), imageDataDepth (Bits per pixel), imageRaster (Information on the raster files), and imageType (Data type: Byte values (integer), Integer values (2, 4 byte), Real values, Undefined values, Unsigned Integer values, Unsigned byte values (integer)).</p>
<p>type</p>	<p>auxdescriptionBlock2</p>
<p>annotation</p>	<p>documentation Format description of enumeration file with along track information</p>

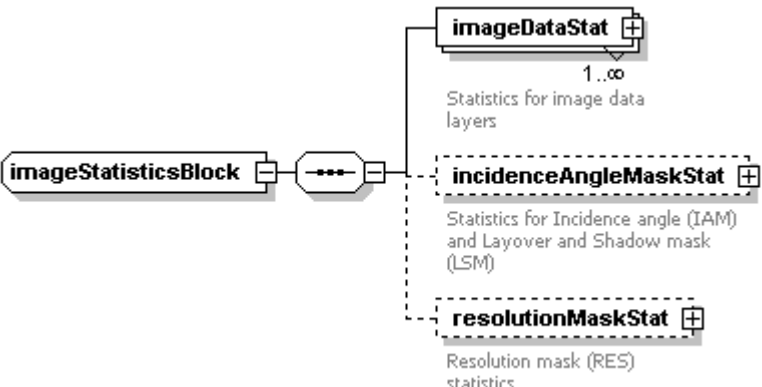
element **geocodedImageInfoBlock/acrossTrackDescription**

<p>diagram</p>	 <p>The diagram shows a class acrossTrackDescription with a description: "Format description of enumeration file with across track information". It is connected to a dashed box labeled auxdescriptionBlock2. Inside this box, acrossTrackDescription has four associations: imageDataFormat (File format of the data (standard: GeoTiff, customised: e.g. NITF, IMG, PIX)), imageDataDepth (Bits per pixel), imageRaster (Information on the raster files), and imageType (Data type: Byte values (integer), Integer values (2, 4 byte), Real values, Undefined values, Unsigned Integer values, Unsigned byte values (integer)).</p>
<p>type</p>	<p>auxdescriptionBlock2</p>
<p>annotation</p>	<p>documentation Format description of enumeration file with across track information</p>

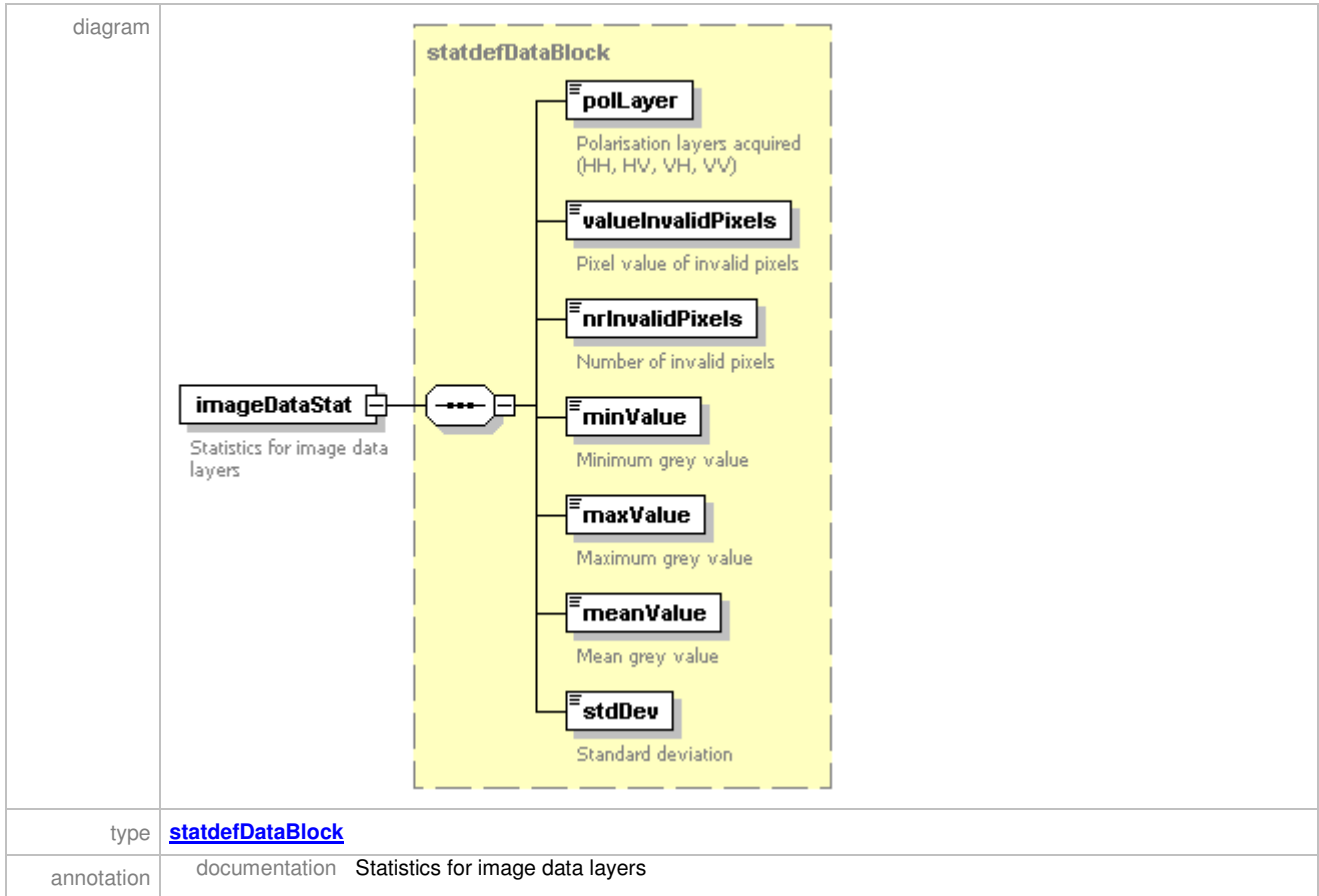
element **productSpecificBlock/imageStatistics**

<p>diagram</p>	 <p>The diagram shows the structure of the imageStatistics element. It is a container element (rectangle with a small square on the left) containing a sequence of three elements: imageDataStat, incidenceAngleMaskStat, and resolutionMaskStat. The imageDataStat element is connected to the container with a multiplicity of 1..∞. The other two elements are connected with a multiplicity of 1. The imageDataStat element is described as "Statistics for image data layers". The incidenceAngleMaskStat element is described as "Statistics for Incidence angle (IAM) and Layover and Shadow mask (LSM)". The resolutionMaskStat element is described as "Resolution mask (RES) statistics".</p>
<p>type</p>	<p>imageStatisticsBlock</p>
<p>annotation</p>	<p>documentation Statistics for product components</p>

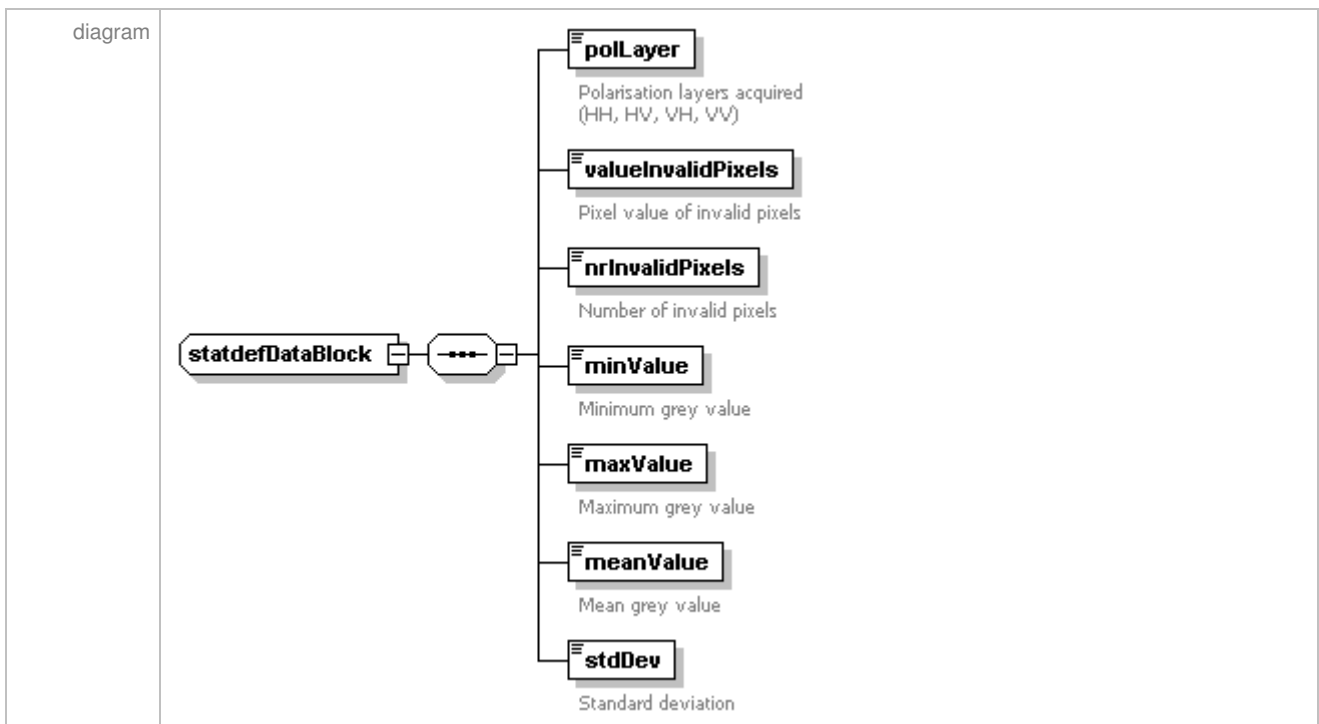
complexType **imageStatisticsBlock**

<p>diagram</p>	 <p>The diagram shows the structure of the imageStatisticsBlock complexType. It is a container element (rectangle with a small square on the left) containing a sequence of three elements: imageDataStat, incidenceAngleMaskStat, and resolutionMaskStat. The imageDataStat element is connected to the container with a multiplicity of 1..∞. The other two elements are connected with a multiplicity of 1. The imageDataStat element is described as "Statistics for image data layers". The incidenceAngleMaskStat element is described as "Statistics for Incidence angle (IAM) and Layover and Shadow mask (LSM)". The resolutionMaskStat element is described as "Resolution mask (RES) statistics".</p>
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element **imageStatisticsBlock/imageDataStat**



complexType **statdefDataBlock**




element **statdefDataBlock/polLayer**

diagram	 <p>Polarisation layers acquired (HH, HV, VH, VV)</p>
type	polLayerValue
annotation	documentation Polarisation layers acquired (HH, HV, VH, VV)

element **statdefDataBlock/valueInvalidPixels**

diagram	 <p>Pixel value of invalid pixels</p>
type	xs:double
annotation	documentation Pixel value of invalid pixels

element **statdefDataBlock/nrInvalidPixels**

diagram	 <p>Number of invalid pixels</p>
type	xs:int
annotation	documentation Number of invalid pixels

element **statdefDataBlock/minValue**

diagram	 <p>Minimum grey value</p>
type	xs:double
annotation	documentation Minimum grey value

element **statdefDataBlock/maxValue**

diagram	 <p>Maximum grey value</p>
type	xs:double
annotation	documentation Maximum grey value

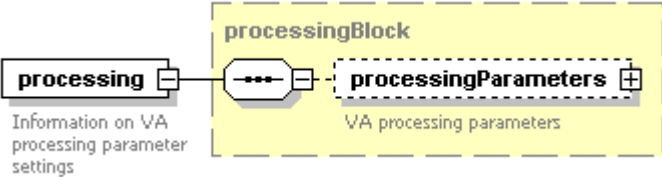
element **statdefDataBlock/meanValue**

diagram	 <p>Mean grey value</p>
type	xs:double
annotation	documentation Mean grey value

element **statdefDataBlock/stdDev**

diagram	 <p>Standard deviation</p>
type	xs:double
annotation	documentation Standard deviation

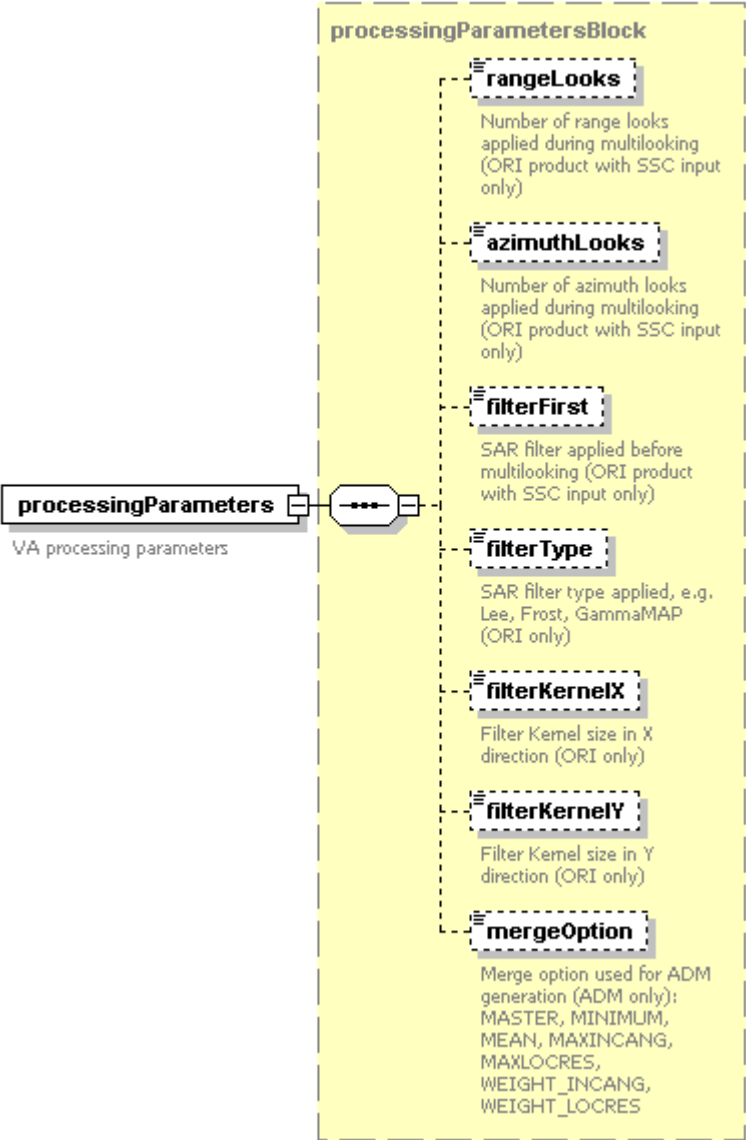
element **vaProduct/processing**

diagram	 <p>Information on VA processing parameter settings</p>
type	processingBlock
annotation	documentation Information on VA processing parameter settings

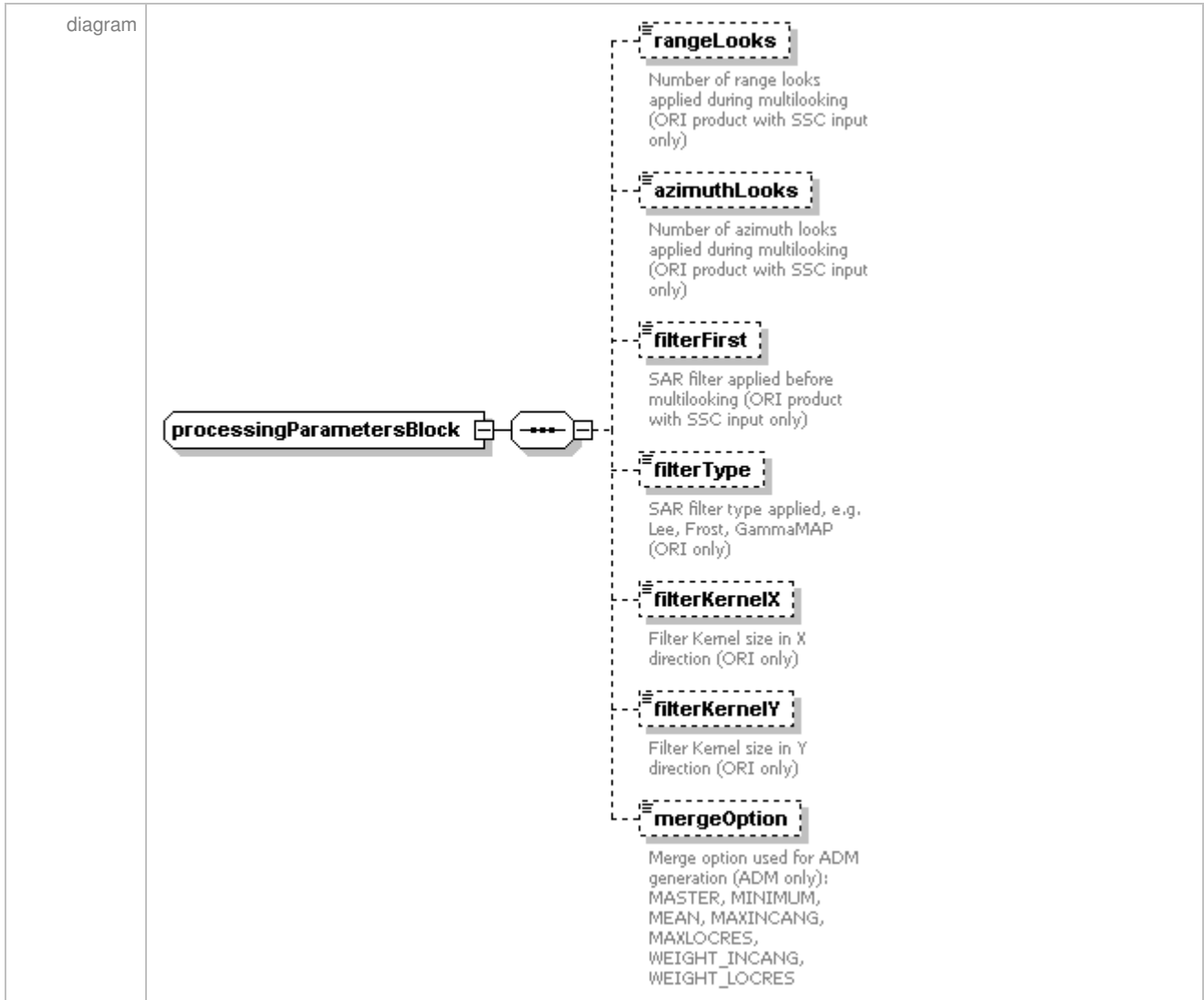
complexType **processingBlock**

diagram	 <p>VA processing parameters</p>
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element **processingBlock/processingParameters**

<p>diagram</p>	 <p>processingParameters VA processing parameters</p> <p>processingParametersBlock</p> <ul style="list-style-type: none"> rangeLooks Number of range looks applied during multilooking (ORI product with SSC input only) azimuthLooks Number of azimuth looks applied during multilooking (ORI product with SSC input only) filterFirst SAR filter applied before multilooking (ORI product with SSC input only) filterType SAR filter type applied, e.g. Lee, Frost, GammaMAP (ORI only) filterKernelX Filter Kernel size in X direction (ORI only) filterKernelY Filter Kernel size in Y direction (ORI only) mergeOption Merge option used for ADM generation (ADM only): MASTER, MINIMUM, MEAN, MAXINCANG, MAXLOCRES, WEIGHT_INCANG, WEIGHT_LOGRES
<p>type</p>	<p>processingParametersBlock</p>
<p>annotation</p>	<p>documentation VA processing parameters</p>


complexType **processingParametersBlock**




element **processingParametersBlock/rangeLooks**

diagram	 <p>rangeLooks Number of range looks applied during multilooking (ORI product with SSC input only)</p>
type	xs:int
annotation	documentation Number of range looks applied during multilooking (ORI product with SSC input only)

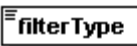
element processingParametersBlock/azimuthLooks

diagram	 <p>Number of azimuth looks applied during multilooking (ORI product with SSC input only)</p>
type	xs:int
annotation	documentation Number of azimuth looks applied during multilooking (ORI product with SSC input only)


element processingParametersBlock/filterFirst

diagram	 <p>SAR filter applied before multilooking (ORI product with SSC input only)</p>
type	xs:boolean
annotation	documentation SAR filter applied before multilooking (ORI product with SSC input only)


element processingParametersBlock/filterType

diagram	 <p>SAR filter type applied, e.g. Lee, Frost, GammaMAP (ORI only)</p>
type	filterTypeValues
annotation	documentation SAR filter type applied, e.g. Lee, Frost, GammaMAP (ORI only)


element processingParametersBlock/filterKernelX

diagram	 <p>Filter Kernel size in X direction (ORI only)</p>
type	xs:int
annotation	documentation Filter Kernel size in X direction (ORI only)

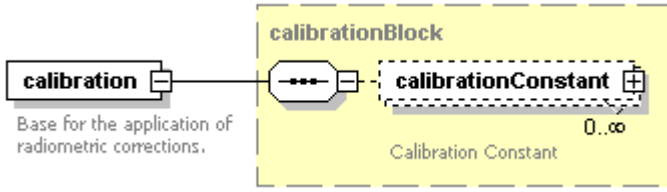
element processingParametersBlock/filterKernelY

diagram	 <p>Filter Kernel size in Y direction (ORI only)</p>
type	xs:int
annotation	documentation Filter Kernel size in Y direction (ORI only)

element processingParametersBlock/mergeOption

diagram	 <p>Merge option used for ADM generation (ADM only): MASTER, MINIMUM, MEAN, MAXINCANG, MAXLOCRES, WEIGHT_INCANG, WEIGHT_LOGRES</p>
type	mergeOptionValues
annotation	documentation Merge option used for ADM generation (ADM only): MASTER, MINIMUM, MEAN, MAXINCANG, MAXLOCRES, WEIGHT_INCANG, WEIGHT_LOGRES

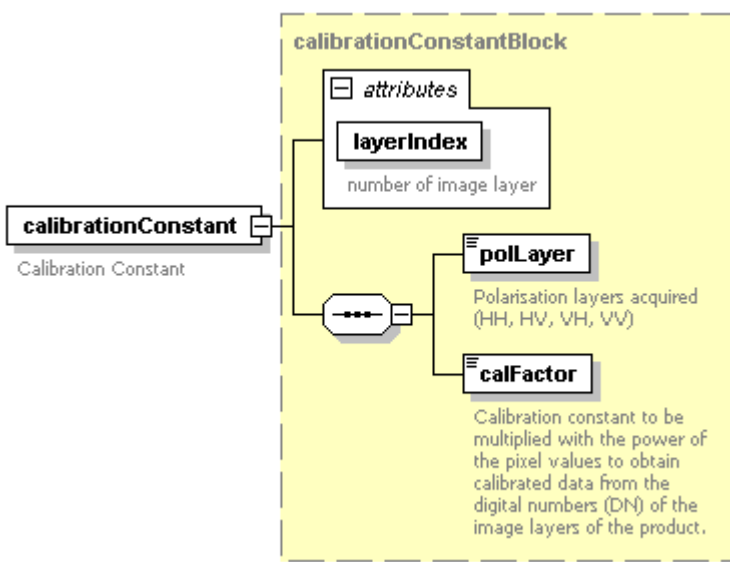
element **vaProduct/calibration**

diagram	 <p>The diagram shows a calibration element (rectangle) connected to a calibrationBlock element (rounded rectangle). Inside calibrationBlock, there is a calibrationConstant element (dashed rectangle) with a multiplicity of 0..∞. Below calibrationConstant is the text "Calibration Constant".</p>
type	calibrationBlock
annotation	documentation Base for the application of radiometric corrections.

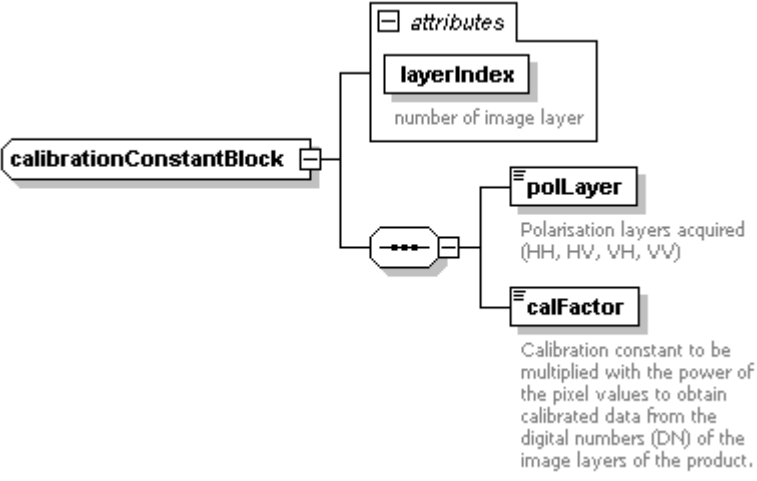
complexType **calibrationBlock**

diagram	 <p>The diagram shows a calibrationBlock element (rounded rectangle) connected to a calibrationConstant element (dashed rectangle) with a multiplicity of 0..∞. Below calibrationConstant is the text "Calibration Constant".</p>
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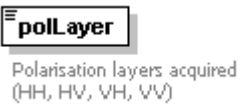
element **calibrationBlock/calibrationConstant**

diagram	 <p>The diagram shows a calibrationConstant element (rectangle) connected to a calibrationConstantBlock element (dashed rounded rectangle). Inside calibrationConstantBlock, there is an attributes container (rectangle) containing a layerIndex element (rectangle) with the description "number of image layer". Below attributes is a polLayer element (rectangle) with the description "Polarisation layers acquired (HH, HV, VH, VV)". Below polLayer is a calFactor element (rectangle) with the description "Calibration constant to be multiplied with the power of the pixel values to obtain calibrated data from the digital numbers (DN) of the image layers of the product.".</p>												
type	calibrationConstantBlock												
attributes	<table border="1"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Use</th> <th>Default</th> <th>Fixed</th> <th>Annotation</th> </tr> </thead> <tbody> <tr> <td>layerIndex</td> <td>xs:int</td> <td>required</td> <td></td> <td></td> <td>documentation number of image layer</td> </tr> </tbody> </table>	Name	Type	Use	Default	Fixed	Annotation	layerIndex	xs:int	required			documentation number of image layer
Name	Type	Use	Default	Fixed	Annotation								
layerIndex	xs:int	required			documentation number of image layer								
annotation	documentation Calibration Constant												

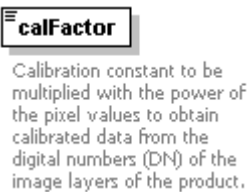
complexType **calibrationConstantBlock**

diagram							
attributes	Name	Type	Use	Default	Fixed	Annotation	
	layerIndex	xs:int	required			documentation	number of image layer

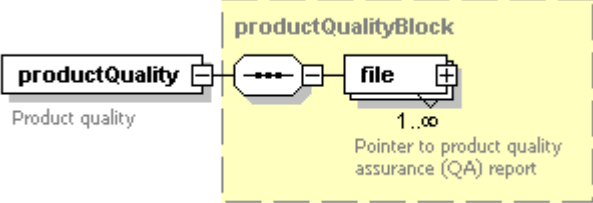
element **calibrationConstantBlock/polLayer**

diagram							
type	polLayerValue						
annotation	documentation	Polarisation layers acquired (HH, HV, VH, VV)					

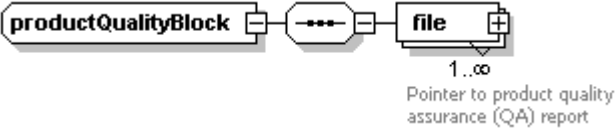
element **calibrationConstantBlock/calFactor**

diagram							
type	xs:double						
annotation	documentation	Calibration constant to be multiplied with the power of the pixel values to obtain calibrated data from the digital numbers (DN) of the image layers of the product.					

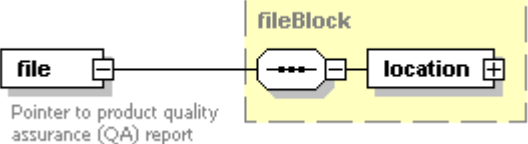
element **vaProduct/productQuality**

diagram	 <p>The diagram shows a productQuality element (labeled 'Product quality') connected to a productQualityBlock container. Inside the container, there is a pointer element (represented by a box with three dots) connected to a file element (labeled '1..∞' and 'Pointer to product quality assurance (QA) report').</p>
type	productQualityBlock
annotation	documentation Product quality

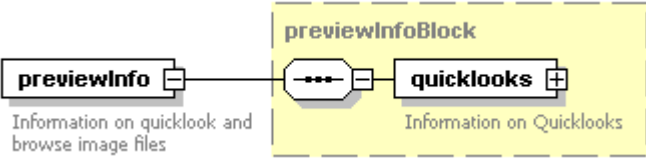
complexType **productQualityBlock**

diagram	 <p>The diagram shows a productQualityBlock element connected to a pointer element (represented by a box with three dots), which is then connected to a file element (labeled '1..∞' and 'Pointer to product quality assurance (QA) report').</p>
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element **productQualityBlock/file**

diagram	 <p>The diagram shows a file element (labeled 'Pointer to product quality assurance (QA) report') connected to a fileBlock container. Inside the container, there is a pointer element (represented by a box with three dots) connected to a location element.</p>
type	fileBlock
annotation	documentation Pointer to product quality assurance (QA) report

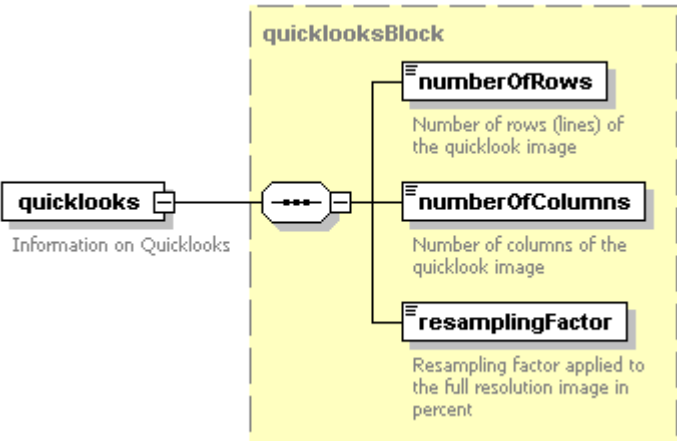
element **vaProduct/previewInfo**

diagram	 <p>The diagram shows a box labeled 'previewInfo' with the text 'Information on quicklook and browse image files' below it. A line connects this box to a dashed yellow box labeled 'previewInfoBlock'. Inside 'previewInfoBlock', there is a connector box with three dots, which is connected to a box labeled 'quicklooks' with the text 'Information on Quicklooks' below it.</p>
type	previewInfoBlock
annotation	documentation Information on quicklook and browse image files

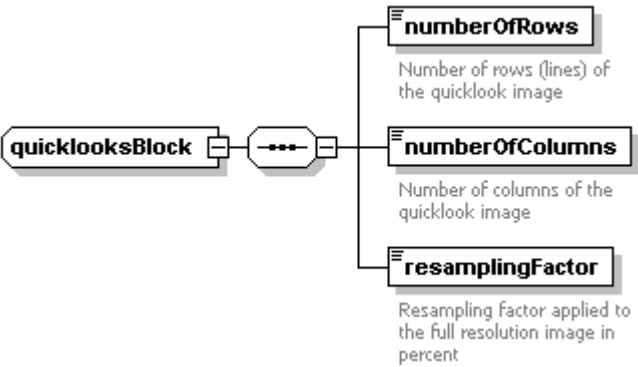
complexType **previewInfoBlock**

diagram	 <p>The diagram shows a box labeled 'previewInfoBlock' connected to a connector box with three dots, which is then connected to a box labeled 'quicklooks' with the text 'Information on Quicklooks' below it.</p>
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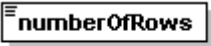
element **previewInfoBlock/quicklooks**

diagram	 <p>The diagram shows a box labeled 'quicklooks' with the text 'Information on Quicklooks' below it. A line connects this box to a dashed yellow box labeled 'quicklooksBlock'. Inside 'quicklooksBlock', there are three elements: 'numberOfRows' (Number of rows (lines) of the quicklook image), 'numberOfColumns' (Number of columns of the quicklook image), and 'resamplingFactor' (Resampling factor applied to the full resolution image in percent).</p>
type	quicklooksBlock
annotation	documentation Information on Quicklooks

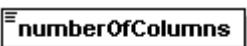
complexType **quicklooksBlock**

diagram	 <p>The diagram shows a box labeled 'quicklooksBlock' connected to a connector box with three dots, which is then connected to three elements: 'numberOfRows' (Number of rows (lines) of the quicklook image), 'numberOfColumns' (Number of columns of the quicklook image), and 'resamplingFactor' (Resampling factor applied to the full resolution image in percent).</p>
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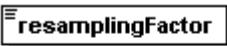
element **quicklooksBlock/numberOfRows**

diagram	 <p>Number of rows (lines) of the quicklook image</p>
type	xs:int
annotation	documentation Number of rows (lines) of the quicklook image

element **quicklooksBlock/numberOfColumns**

diagram	 <p>Number of columns of the quicklook image</p>
type	xs:int
annotation	documentation Number of columns of the quicklook image

element **quicklooksBlock/resamplingFactor**

diagram	 <p>Resampling Factor applied to the full resolution image in percent</p>
type	xs:double
annotation	documentation Resampling factor applied to the full resolution image in percent