

# ***HMA-S SRR Meeting***

16 May 2013, ESA-ESRIN

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Wim Desmet  
GIM

- Summary of Work performed
- Overview of Change Requests
  - Philosophy
  - CR1: Improved expression of EO Product Quality and status
  - CR2: Addition of optional productGroupId property
  - CR3: Addition of Optional timeliness property
  - CR4: Improved description of EO Product Masks
  - CR5: Correct inconsistencies between UML and tables
  - CR6: Editorial Changes
  - Suggestions not taken into account
- Outstanding Issues

## ➤ Collecting Requirements

- Input received from ESA concerning Sentinel 2 & ngEO
- Contacts with SAFE Community (P. Sacramento)
- Critical review existing spec (inconsistencies Model and tables)
- INSPIRE Orthoimagery data specifications being analysed

## ➤ Documentation update

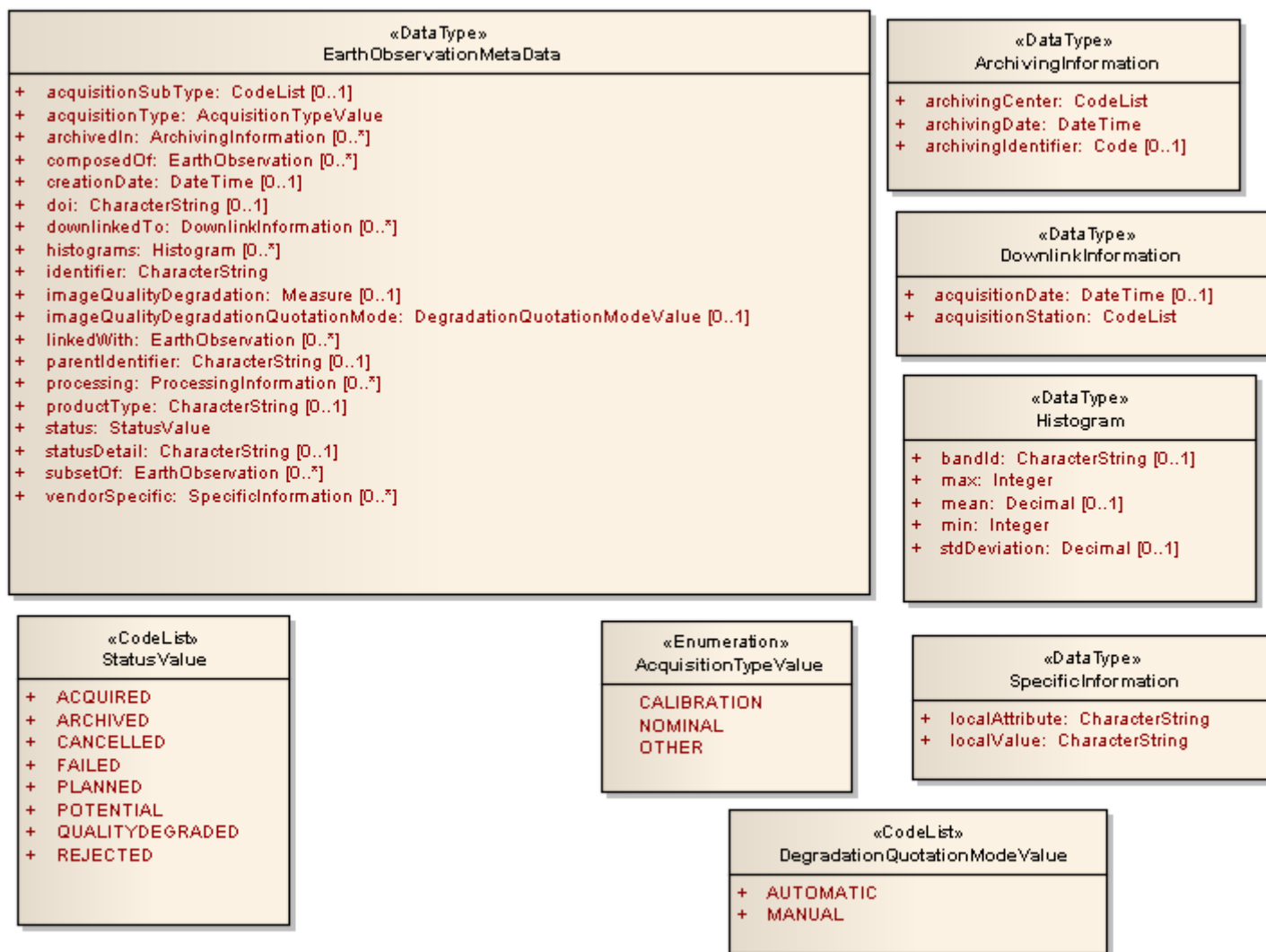
- Contacts with OGC TC Chair
- Technical Note HMA-S-TN-001-GIM-V10 uploaded on HMA WIKI which summarises the change requests
- UML Model recuperated and adapted in line with Change requests
- Update version of OGC10-157 available
- Draft revision notes document

- OGC 10-157 is an official OGC Profile
- Maintain backwards compatibility
  - Propose new optional elements
  - Exceptions are corrigenda – bug fixes that by definition cannot be backwards compatible
- Fully inline with ngEO and GSCDA proposed evolutions to OGC10-157

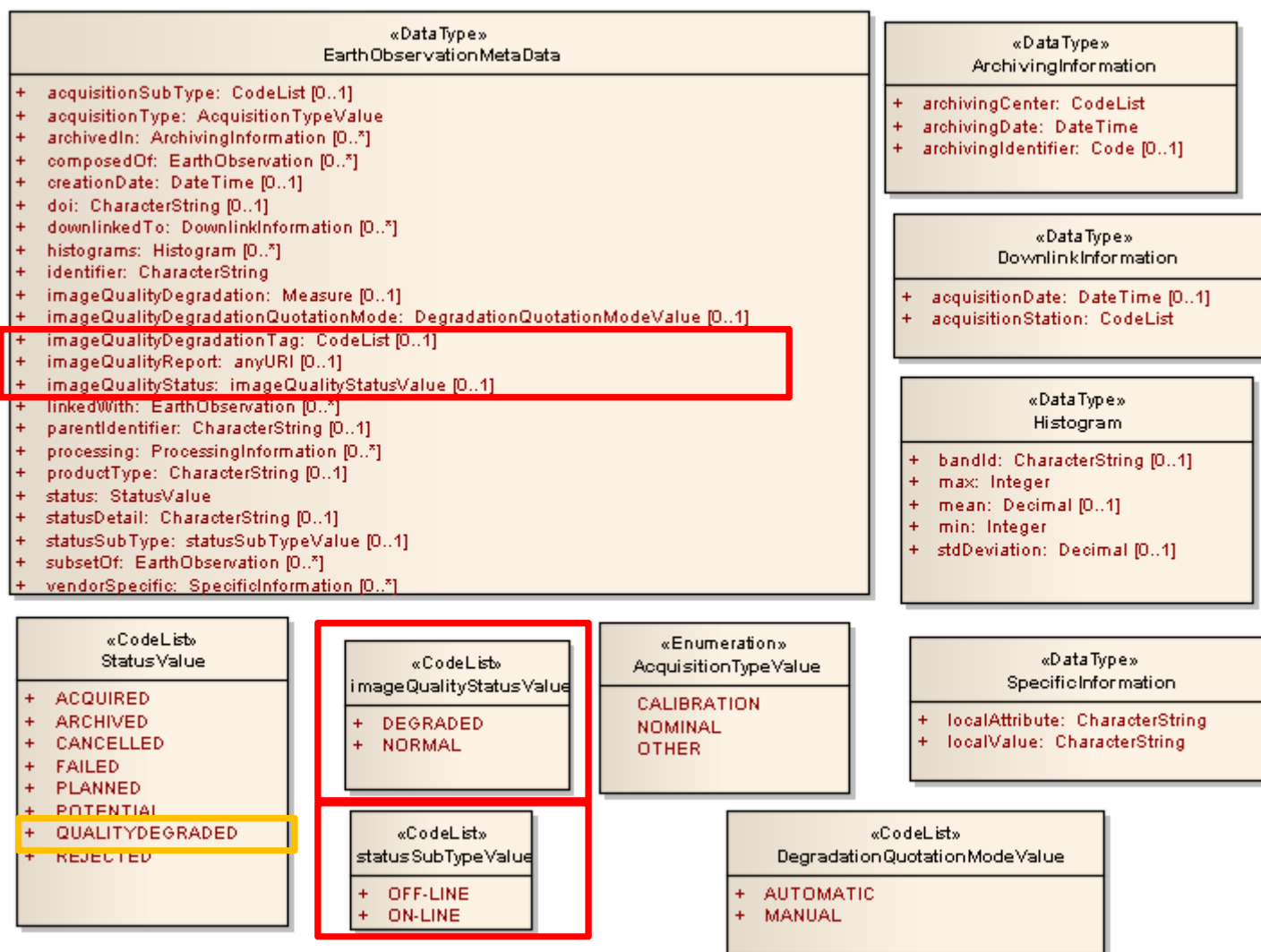
- CR1: Improved expression of EO Product Quality and status
  - Current situation
    - Currently the EO Product Metadata Profile of O&M allows within the EOP::EarthObservationMetaData element to specify the imageQualitydegradation as a **percentage**.
    - In addition, there is a value QUALITYDEGRADED “ in the EarthObservationMetadata/**status code** list to signal quality degradation. However this is not at the correct place since QualityDegraded is not a status in the lifecycle of an EO Product like the other entries in this code list (Acquired, Archived, Cancelled, ...).

- CR1: Improved expression of EO Product Quality and status
  - Proposed evolution
    - Additional optional attribute imageQualityStatus that can take the values “DEGRADED” or “NORMAL”
    - Additional optional imageQualityDegradationTag that can contain further textual information concerning the quality degradation. Mission specific Codelists. Shall be provided if imageQualityStatus is degraded.
    - Additional optional imageQualityReportURL property – reference to an external quality report
    - the QUALITYDEGRADED in the status code list is to be set to deprecated.
    - Add an optional statusSubType element that refines the status of a product when the “status” is set to “ARCHIVE”. Possible values for this statusSubType element are “Online” and “Offline”.

## Original



## Evolution





### ➤ CR2: ADDITION OF OPTIONAL PRODUCTGROUPID PROPERTY

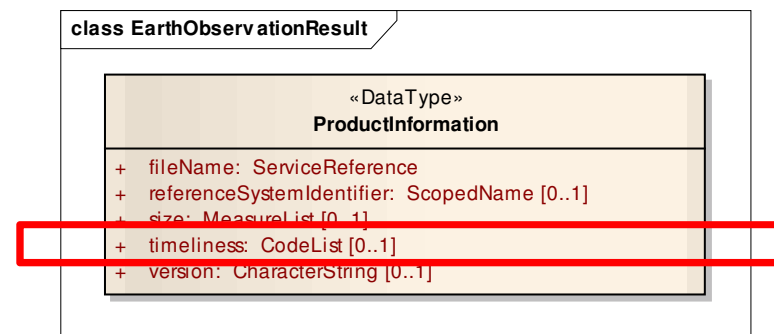
- Addition within the EarthObservationMetaData element of an optional property **productGroupid** that holds the identifier of a particular group to which the product belongs to.
- Group members represent then "granules" or "portions" of end-user products that are eligible for specific aggregations (e.g. all Sentinel-2 granules having the same productGroupid can be assembled together to form a Sentinel-2 end-user product)

## ➤ CR2: ADDITION OF OPTIONAL PRODUCTGROUPID PROPERTY

«DataType» EarthObservationMetaData	
+	acquisitionSubType: CodeList [0..1]
+	acquisitionType: AcquisitionTypeValue
+	archivedIn: ArchivingInformation [0..*]
+	composedOf: EarthObservation [0..*]
+	creationDate: DateTime [0..1]
+	doi: CharacterString [0..1]
+	downlinkedTo: DownlinkInformation [0..*]
+	histograms: Histogram [0..*]
+	identifier: CharacterString
+	imageQualityDegradation: Measure [0..1]
+	imageQualityDegradationQuotationMode: DegradationQuotationModeValue [0..1]
+	imageQualityDegradationTag: CodeList [0..1]
+	imageQualityReport: anyURI [0..1]
+	imageQualityStatus: imageQualityStatusValue [0..1]
+	linkedWith: EarthObservation [0..*]
+	parentIdentifier: CharacterString [0..1]
+	processing: ProcessingInformation [0..*]
+	productGroupId: CharacterString [0..1]
+	productType: CharacterString [0..1]
+	status: StatusValue
+	statusDetail: CharacterString [0..1]
+	statusSubType: statusSubTypeValue [0..1]
+	subsetOf: EarthObservation [0..*]
+	vendorSpecific: SpecificInformation [0..*]

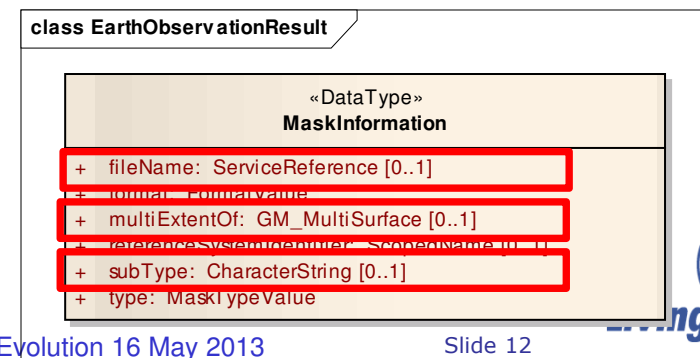
## ➤ CR3: ADDITION OF OPTIONAL TIMELINESS PROPERTY

- Addition within the EarthObservationResult/product/ProductInformation element of an optional property “**timeliness**”.
- It specifies the timeliness of the product, such as "near real time" or "rush". Possible values are mission specific and shall refer to mission/ground segment dedicated codeSpace. Example of values could be "NRT" or "NOMINAL"



## ➤ CR4: IMPROVED DESCRIPTION OF EO PRODUCT MASKS

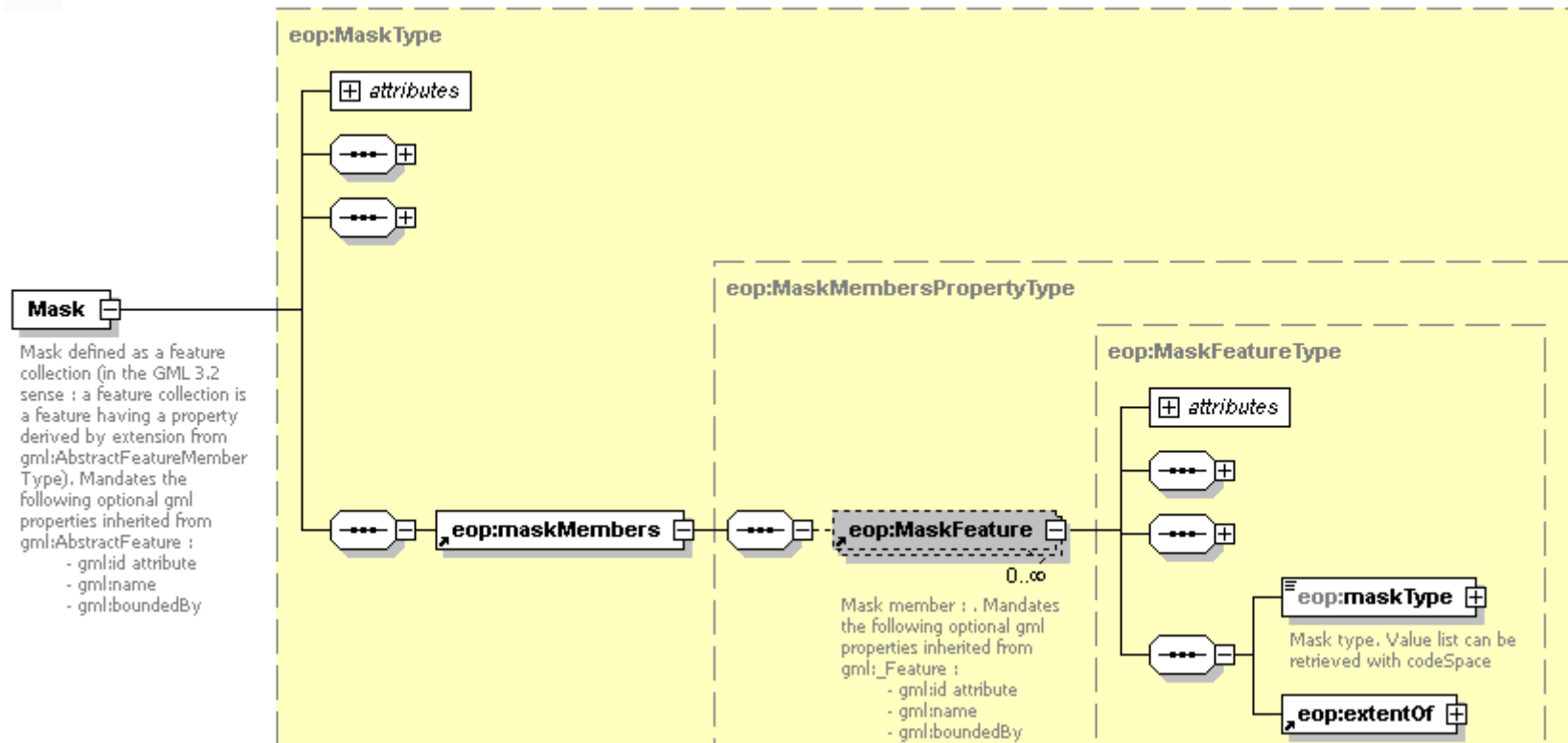
- Addition of new optional property subType within the MaskInformation to further specify the type of Mask (of type string instead of mission specific ColeList)
- a new optional property multiExtentOf will be added to the MaskInformation element that allows inline encoding of mask polygon geometries using the gml:MultiSurface/gml:SurfaceMembers/gml :Polygon construct. Either the fileName or the multiExtentOf shall be provided.
- fileName made optional



### ➤ CR4: IMPROVED DESCRIPTION OF EO PRODUCT MASKS

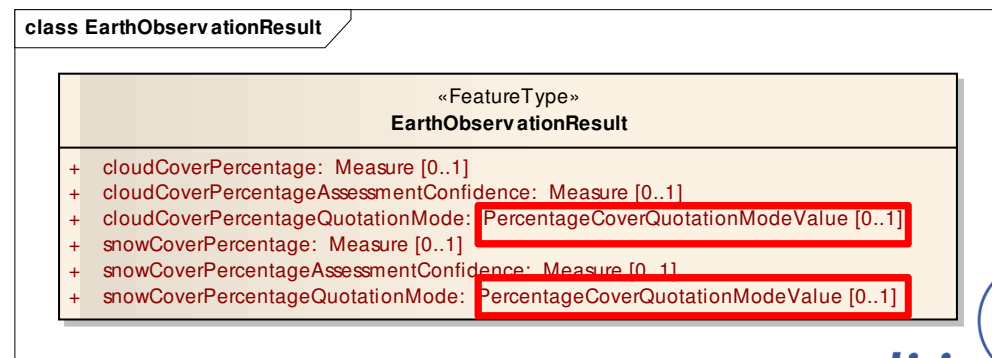
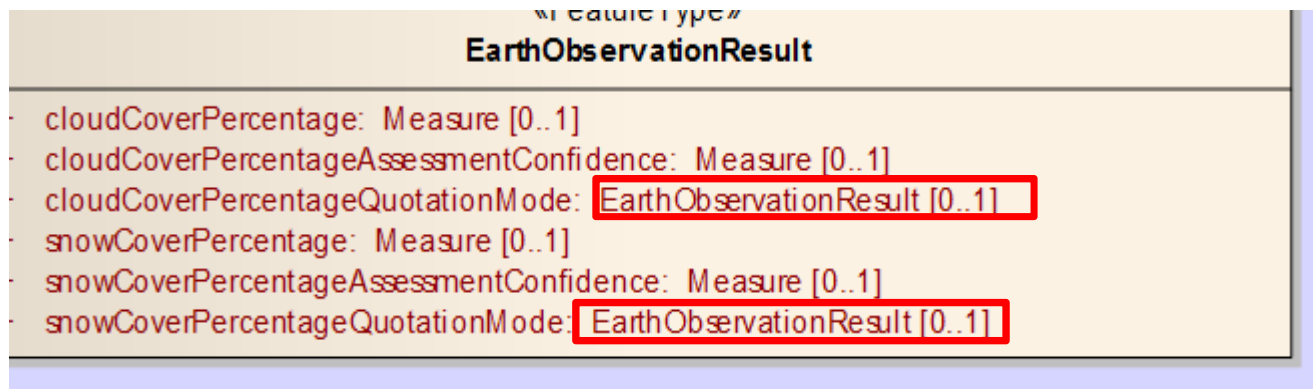
- When using the filename property to reference an external mask, neither the information model or encoding is specified.
- In order to further improve interoperability, a new Informative Annex is added that gives the recommended GML 3.2.1 Application Schema that is preferred to be used when using an external mask file.
- The root element is Mask, a feature collection that contains a set of MaskFeatures as its members.
- Each MaskFeature characterised by standard gml:Feature properties as well as maskType (Codelist) and extentOf (Polygon geometries)

## ➤ CR4: IMPROVED DESCRIPTION OF EO PRODUCT MASKS



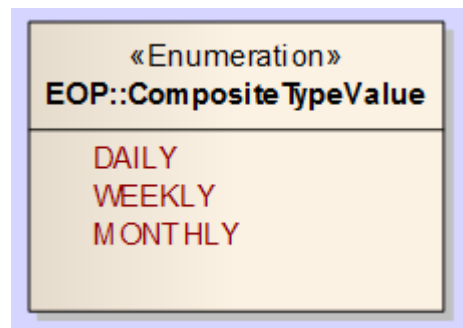
## ➤ CR5: CORRECT INCONSISTENCIES BETWEEN UML MODEL AND TABLES

- CloudCoverPercentageQuotationMode has wrong type in UML



## ➤ CR5: CORRECT INCONSISTENCIES BETWEEN UML MODEL AND TABLES

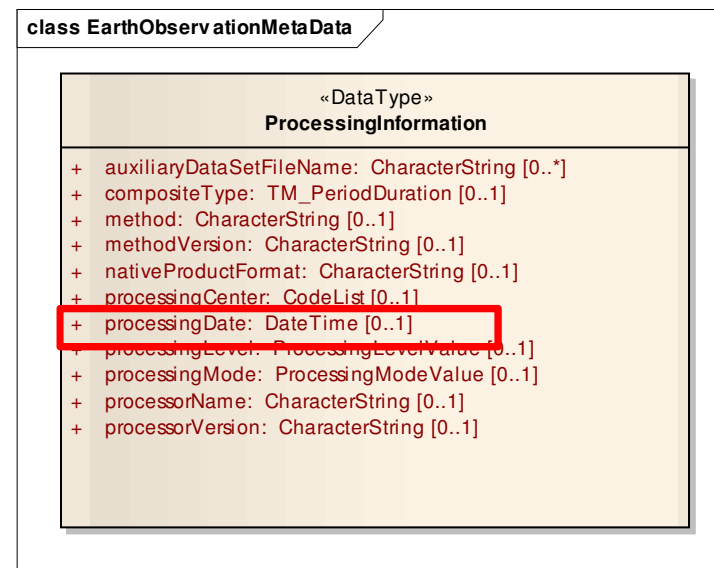
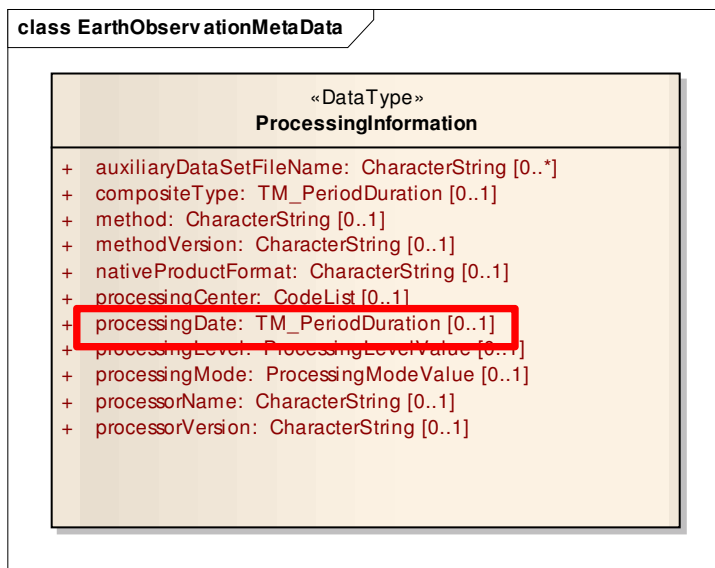
- CompositeTypeValue has become obsolete
- Used to be a fixed enumeration in OGC06-080r4: DAILY, WEEKLY, MONTHLY
- Changed in OGC10-157 into TM\_PeriodDuration
- Enumeration list to be removed from model





## ➤ CR5: CORRECT INCONSISTENCIES BETWEEN UML MODEL AND TABLES

In the Processing Information class diagram, the type of the processingDate property is TM\_PeriodDuration. The table specifies that this should be a datetime. The model is wrong and the type of processingDate should be changed to DateTime.

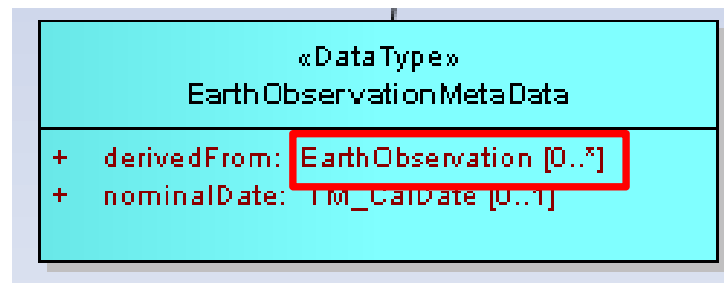


### ➤ CR5: CORRECT INCONSISTENCIES BETWEEN UML MODEL AND TABLES

- Table 6 lists the possible values for the OrbitDirectionValue as Ascending and Descending. The UML model specifies ASCENDING and DESCENDING. The model is correct and table 6 should be amended.
- Table 9 lists properties cloudCoverPercentageAssessmentPercentage and snowCoverPercentageAssessmentPercentage. The opt:EarthObservationResult class diagram has instead the properties cloudCoverPercentageAssessmentConfidence and snowCoverPercentageAssessmentConfidence. The UML is correct and Table 9 should be corrected.

## ➤ CR5: CORRECT INCONSISTENCIES BETWEEN UML MODEL AND TABLES

- The class diagram for Synthesis and Systematic Products metadata has a derivedFrom property of type CharacterString. The associated table 22 specifies that this property should be a link to the EO Products that were used in the generation of the ssp products. Like the similar eop:linkedWith and subsetOf properties, the type of the element should be EarthObservation encoded by reference.



### ➤ CR5: CORRECT INCONSISTENCIES BETWEEN UML MODEL AND TABLES

- The class diagram for altimetry products has the cardinality of the property alt:auxiliaryInstrument/alt:**instrumentType** as 1. The corresponding table 12 has 0..1 . Original HMA-FO requirements document had 0..1. Model has preference.
- atm:earthObservationResult model contains cloudCover and snowCover related properties, table does not. Table needs to be updated. It was checked with results from HMA-FO questionnaire that there was a requirement for this.

## ➤ CR6: Editorial Changes

- Preface refers to document as draft report
- Foreword/Introduction: clarify that the scope is Earth Observation **Product** Metadata
- References: update reference of O&M and add informative reference to OGC06-103r4 which is referred to from within table 7.
- Terms and Definitions: Update reference to definition of geographic information(remove draft)
- Abbreviated terms: add missing abbreviations used elsewhere in the document – PHR
- General concepts: correction of typo in altimetry
- Figure 2 – add reference to OGC10- 004r3 within caption

## ➤ CR6: Editorial Changes

- All tables and text: consistent use of upper and lower case for element and properties names
- All tables: consistent presentation of enumeration values and codelists
- Table 5: clarifying description for processing/ProcessingInformation/compositeType acquisitionSubType
- Table 11: correction of description of atm:speciesError
- Add class diagrams for alt:ProcessingInformation and lmb:acquisition, ....
- Table 19: clarifying description for ssp:footprint
- Annex C: correct “References not found”
- Correct Captions of Tables to refer to the appropriate Type

- Evolution suggestion not taken into account:
  - Rename properties that contain “image” by their equivalents containing “product” as this would create backwards compatibility issues.

## ➤ Outstanding Issues

- OGC Document number, version and version of schemas and namespaces to be verified with OGC
  - Version of document was 1.0 (first approved version of OGC10-157)
  - Namespace URIs were <http://www.opengis.net/eop/2.0>
  - Some class diagrams still contained document 0.8
  - Model has EarthObservation/Version at **2.0**
  - Since proposed evolutions are a combination of backwards compatible additions and bug fixes (do not need to be backwards compatible) it could pass as a minor revision. However inconsistency between namespaces and document version – TBC
  
- Comparision/mapping of INSPIRE orthoImagery metadata elements on EO O&M to be provided as separate Technical Note



- Submit change requests following this meeting
- Submit updated O&M SWG charter
- Further liaison with OGC on version numbering
- Vote on Change Requests in SWG