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OGC GEOSPATIAL USER FEEDBACK STANDARD. XML ENCODING EXTENSION. V.2.0

STANDARD Implementation

DRAFT

Version: 1.0

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Editor: Alaitz Zabala, Joan Masó, Oscar González

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CONTENTS

l.	ABSTRACT	۰۰۰۰۰۰۰۰
II.	KEYWORDS	V
III.	PREFACE	V
IV.	SECURITY CONSIDERATIONS	vi
V.	SUBMITTING ORGANIZATIONS	vii
VI.	SUBMITTERS	vii
1.	SCOPE	2
2.	CONFORMANCE	4
3.	NORMATIVE REFERENCES	6
4.	TERMS AND DEFINITIONS	8
5.	CONVENTIONS	
6.	GEOSPATIAL USER FEEDBACK XML ENCODING	12
7.	GEOSPATIAL USER FEEDBACK MODEL. CORE	14
8.	8. GEOSPATIAL USER FEEDBACK MODEL. EXTENSIONS	24
9.	ANNEX A: CONFORMANCE CLASS ABSTRACT TEST SUITE (NORMATIVE) 9.1. A.1 Conformance class: Quality Common	
AN	NEX A (INFORMATIVE) CONFORMANCE CLASS ABSTRACT TEST SUITE (NORMATIVE)	
ΔN	NEX B (INFORMATIVE) XML SCHEMA DOCUMENTS	37

	ANNEX C (INFORMATIVE) REVISION HISTORY	39
LIST	OF TABLES	
	Table — Submitters Table 1 — Namespaces Table C.1 — Revision History	10
LIST	OF RECOMMENDATIONS	
	REQUIREMENTS CLASS 1: REQUIREMENTS CLASS 'QUALITY COMMON'	20
	REQUIREMENTS CLASS 3: REQUIREMENTS CLASS 'FEEDBACK SUMMARY'	•••

1 ABSTRACT

The Geospatial User Feedback XML encoding standard is based on the OGC Geospatial User Feedback conceptual model [2]. Geospatial User Feedback is metadata that is predominantly produced by the consumers of geospatial data products based on their use and experience with those products. This standard complements the existing metadata conventions whereby documents recording dataset characteristics and production workflows are generated by the creator, publisher or curator of a data product. As a part of metadata, the GUF data model internally reuses some elements of ISO 19115-1 (the updated version of the OGC Abstract Specification topic 11) but not the general structure. This selective use of ISO metadata elements prioritizes future interoperability with developing ISO metadata models.

This standard can be used in combination with [2]. In the future, other encodings may be considered, being an alternative using the JSON-LD encoding based on parts of schema.org.



KEYWORDS

The following are keywords to be used by search engines and document catalogues. ogcdoc, OGC document, API, openapi, html

PREFACE

NOTE: This standard is based on work done in two European Union 7th Framework program projects called GeoViQua (FP7 FP7/2007-2013 under grant agreement n°265178) and CHARMe (FP7/2007-2013 under grant agreement n°312641). GeoViQua considers user feedback as part of the metadata that allows users to assess the quality and fitness-for-use of geospatial datasets. GeoViQua developed its quality model based on ISO 19115-1:2014 and drafts of ISO19157:2013. The GeoViQua model is divided into the Producer Quality Model and the User Feedback Model. Both models are encoded in XML based on the ISO 19139 rules. The GeoViQua User Feedback Model¹ formed the initial basis of the model defined in this standard. CHARMe also focused on developing means for users to annotate datasets. The approach used in that project was based on W3C annotations and developed annotation conventions in RDF. Parts of the CHARMe conceptual model have been incorporated in the OGC GUF standards.

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¹http://schemas.geoviqua.org

No security considerations have been made for this document.



SUBMITTING ORGANIZATIONS

The following organizations submitted this Document to the Open Geospatial Consortium (OGC):

UAB-CREAF



SUBMITTERS

All questions regarding this submission should be directed to the editor or the submitters:

Table — Submitters

Name	Affiliation
Joan Masó	UAB-CREAF
Alaitz Zabala	UAB-CREAF
Oscar González	UAB-CREAF
Lucy Bastin	Aston University

1 SCOPE

1 SCOPE

NOTE: This OGC[™] Standard defines an XML encoding for encoding user feedback about geospatial datasets or metadata records describing datasets. This standard reuses and extends the ISO 19115-1:2014 model [3] and follows the ISO 19139 [4] encoding rules. The XML encoding is based on the Geospatial User Feedback Conceptual Model Standard [2].

This OGC® Standard is applicable to metadata catalogue servers and clients that want to exchange geospatial user feedback information.

This OGC® Standard is defined to allow implementation of catalogue clients that are able to complement the discovery of geospatial datasets. Catalogue clients present query results, commonly based on summaries of detailed metadata records created and maintained by the producers. With this standard, the metadata responses can also provide user feedback summaries and detailed user feedback reports. Clients using this standard can provide a user interface to support provision of additional comments or inquiries about datasets or to complement the producer metadata by presenting additional user feedback information about the data.

Geospatial User Feedback as used in this standard encompasses: user comments, questions and answers, user reports of dataset problems and proposed solutions to those problems, ratings, usage reports, citations of related datasets or publications describing usage, quality reports, relevant additional provenance information, significant events related to the use or interpretation of a dataset.

This standard does not define any query language to request or send user feedback to/from metadata catalogues.

CONFORMANCE

CONFORMANCE

This standard defines 4 conformance classes.

Requirements for some standardization targets types are considered:

- Requirement Quality Common: [http://www.opengis.net/spec/geospatial-user-feedback-xml/1.0/req/quality-common] has a single conformance class, Quality Common: [http://www.opengis.net/spec/geospatial-user-feedback-xml/1.0/conf/quality-common]. This conformance class targets clients and services implementing quality or user feedback models.
- Requirement Feedback-item: [http://www.opengis.net/spec/geospatial-user-feedback-xml/1.0/req/feedback-item] has a single pertaining conformance class, Feedback-item [http://www.opengis.net/spec/geospatial-user-feedback-xml/1.0/conf/ feedback-item]. This conformance class targets clients and services implementing user feedback models.
- Requirement Feedback-summary: [http://www.opengis.net/spec/geospatial-user-feedback-xml/1.0/req/feedback-summary] has a single conformance class, Feedback-summary:, [http://www.opengis.net/spec/geospatial-user-feedback-xml/1.0/conf/feedback-summary]. This conformance class targets clients and services implementing user feedback models.
- Requirement Feedback-collection: [http://www.opengis.net/spec/geospatial-user-feedback-xml/1.0/req/feedback-collection] has a single pertaining conformance class, Feedback-collection, [http://www.opengis.net/spec/geospatial-user-feedback-xml/1.0/conf/feedback-collection]. This conformance class targets clients and services implementing user feedback models.

Conformance with this standard shall be checked using all the relevant tests specified in Annex A (normative) of this document. The framework, concepts, and methodology for testing, and the criteria to be achieved to claim conformance are specified in the OGC Compliance Testing Policies and Procedures and the OGC Compliance Testing web site².

All requirements-classes and conformance-classes described in this document are owned by the standard(s) identified.

OPEN GEOSPATIAL CONSORTIUM 23-061

²www.opengeospatial.org/cite

NORMATIVE REFERENCES



NORMATIVE REFERENCES

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

- Joan Masó and Lucy Bastin: OGC 15-097r1, OGC® Geospatial User Feedback Standard: Conceptual Model. Open Geospatial Consortium (2016). http://www.opengis.net/doc/IS/guf-conceptual/1.0.0.
- ISO: ISO/TS 19139:2007, Geographic information Metadata XML schema implementation. International Organization for Standardization, Geneva (2007). https://www.iso.org/standard/32557.html.
- ISO: ISO 19115-3:2023, Geographic information Metadata Part 3: XML schema implementation for fundamental concepts. International Organization for Standardization, Geneva (2023). https://www.iso.org/standard/80874.html.
- ISO: ISO/TS 19157-2:2016, Geographic information Data quality Part 2: XML schema implementation. International Organization for Standardization, Geneva (2016). https://www.iso.org/standard/66197.html.

TERMS AND DEFINITIONS



TERMS AND DEFINITIONS

No terms and definitions are listed in this document.

This document uses the terms defined in Sub-clause 5.3 of [5], which is based on the ISO/IEC Directives, Part 2, Rules for the structure and drafting of International Standards. In particular, the word "shall" (not "must") is the verb form used to indicate a requirement to be strictly followed to conform to this standard.

This document uses the Terms and Definition provided by the OGC 15-097 Geospatial UserFeedback Conceptual Model standard [2]. No additional terms and definitions apply.

CONVENTIONS

5.1. Namespace prefix conventions

The following namespaces are used in this document. The prefix abbreviations used constitute conventions used here, but are not normative. The namespaces to which the prefixes refer to are normative.

Table 1 − Namespaces

Prefix	Namespace URI	Description
xsd	http://www.w3.org/2001/XMLSchema	XML Schema namespace
gco	http://standards.iso.org/iso/19115/-3/gco/1.0	ISO 19115 Common classes
mcc	http://standards.iso.org/iso/19115/-3/mcc/1.0	http://standards.iso.org/iso/19115/-3/mcc/1.0
mri	http://standards.iso.org/iso/19115/-3/mri/1.0	ISO 19115-1 Identification
mrl	http://standards.iso.org/iso/19115/-3/mrl/1.0	ISO 19115-1 Lineage
gex	http://standards.iso.org/iso/19115/-3/gex/1.0	ISO 19115-1 Extent
cit	http://standards.iso.org/iso/19115/-3/cit/1.0"	ISO 19115-1 Citation
mdq	http://standards.iso.org/iso/19157/-2/mdq/1.0	ISO 19157 Quality
lan	http://standards.iso.org/iso/19115/-3/lan/1.0	ISO 19115-3 Language
qcm	http://www.opengis.net/guf/2.0/common	Quality common
guf	http://www.opengis.net/guf/2.0/core	User feedback core
ufc	http://www.opengis.net/guf/2.0/collection	User feedback collection
ufs	http://www.opengis.net/guf/2.0/summary	User feedback summary

GEOSPATIAL USER FEEDBACK XML ENCODING



GEOSPATIAL USER FEEDBACK XML ENCODING

The encoding rules for creating a XML encoding from a UML model documented in ISO 19139 [4] were used to elaborate the XML schemas described here. These encoding rules are coded in the ShapeChange [6] application. ShapeChange was used to automatically transform the UML model coming from the OGC 15-097 Geospatial User Feedback Conceptual Model [8] into the XML schemas that are complementing this standard. Since the conversion is automatic, this document will not provide tables describing the semantics of each element and the reader should refer to the conceptual model for details.

This encoding is intended for applications where the use of producer's metadata encoded in ISO 19115-1:2014 [3] is common. This way it we pave the terrain for extending the current ISO 19115-1:2014 metadata editors and catalogues to support this model. It also aims for an easy integration of the producer metadata and the user feedback in client applications.

GEOSPATIAL USER FEEDBACK MODEL. CORE

GEOSPATIAL USER FEEDBACK MODEL. CORE

This section describes three requirements classes that are fundamental for encoding Geospatial User Feedback items in XML: the Quality Common, the User Feedback Item and the User Feedback Summary.

7.1. 7.1 Requirements Class Quality Common

This requirements class defines the XML encoding for data model classes that are common to, and useful for, both quality metadata generated by producers and user feedback metadata. For this reason they are kept in a separate conformance class. In essence, this conformance class represents the foundations for building a user feedback model. This requirements class inherits all the necessary elements from the ISO 19115-1:2014 [3] and the ISO 19157:2013 [7] metadata models (such as CI_Citation, CI_Date etc) and adds two extra classes for citing publications (QCM_Publications) and for reporting discovery issues (QCM_DiscoveredIssues).

REQUIREMENTS CLASS 1: REQUIREMENTS CLASS 'QUALITY COMMON'	
IDENTIFIER	https://www.opengis.net/spec/guf-schema/2.0/req/quality-common
TARGET TYPE	Quality Common
PREREQUISITE	ISO 19115-3, ISO 19157-2 and ISO 19139 schemas
NORMATIVE STATEMENTS	Requirement 1-1: /req/quality-common/mime-type Requirement 1-2: /req/quality-common/file-extension Requirement 1-3: /req/quality-common/xmlrules Requirement 1-4: /req/quality-common/iso-schema Requirement 1-5: /req/quality-common/qcm-schema

The qcm.xsd schema has been derived automatically from the OGC 15-097 UML model [8]. No tables describing the naming of the elements and subelements are reproduced here due to they will be the same specified in the conceptual model.

The following code shows a xml encoding example for QCM_Publication

<qcm:QCM Publication

```
xmlns:cit="http://standards.iso.org/iso/19115/-3/cit/2.0"
xmlns:qcm="http://www.opengis.net/guf/2.0/common"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:gco="http://standards.iso.org/iso/19115/-3/gco/1.0"
xmlns:mcc="http://standards.iso.org/iso/19115/-3/mcc/1.0"
xmlns:mri="http://standards.iso.org/iso/19115/-3/mri/1.0"
```

```
xsi:schemaLocation="http://www.opengis.net/guf/2.0/common https://schemas.
opengis.net/guf/2.0/qcm.xsd">
 <cit:title>
  <gco:CharacterString>Earth observations for sustainable development goals
monitoring based on essential variables and driver-pressure-state-impact-
response indicators</gco:CharacterString>
 </cit:title>
 <cit:date>
  <cit:CI_Date>
   <cit:date>
    <gco:DateTime>2020-01-01T00:00:00Z
   </cit:date>
   <cit:dateType>
    <cit:CI_DateTypeCode codeList="http://wis.wmo.int/2008/catalogues/draft
version 1-1/WMO Codelists ver1 1.xml#CI DateTypeCode" codeListValue="creation"/
   </cit:dateType>
  </cit:CI Date>
 </cit:date>
 <cit:identifier>
  <mcc:MD Identifier>
   <mcc:code>
    <gco:CharacterString>10.1080/17538947.2019.1576787/gco:CharacterString>
   </mcc:code>
   <mcc:codeSpace>
    <gco:CharacterString>https://doi.org/</gco:CharacterString>
   </mcc:codeSpace>
  </mcc:MD Identifier>
 </cit:identifier>
 <cit:citedResponsibleParty>
  <cit:CI Responsibility>
   <cit:role>
    <cit:CI_RoleCode codeListValue="author" codeList="http://www.opengis.net/
guf/2.0/resources/codeList.xml#CI RoleCode"/>
   </cit:role>
   <cit:party>
    <cit:CI Índividual>
     <cit:name>
      <gco:CharacterString>Joan Masó/gco:CharacterString>
     </cit:name>
     <cit:contactInfo>
      <cit:CI Contact>
       <cit:address>
        <cit:CI Address>
         <cit:electronicMailAddress>
          <gco:CharacterString>joan.maso@uab.cat</gco:CharacterString>
         </cit:electronicMailAddress>
        </cit:CI Address>
       </cit:address>
      </cit:CI_Contact>
     </cit:contactInfo>
    </cit:CI Individual>
   </cit:party>
  </cit:CI Responsibility>
 </cit:citedResponsibleParty>
 <cit:citedResponsibleParty>
  <cit:CI_Responsibility>
   <cit:role>
    <cit:CI RoleCode codeListValue="author" codeList="http://www.opengis.net/</pre>
guf/2.0/resources/codeList.xml#CI_RoleCode"/>
   </cit:role>
   <cit:party>
    <cit:CI_Individual>
```

```
<cit:name>
      <gco:CharacterString>Ivette Serral/gco:CharacterString>
     </cit:name>
    </cit:CI Individual>
   </cit:party>
 </cit:CI Responsibility>
 </cit:citedResponsibleParty>
 <cit:citedResponsibleParty>
  <cit:CI_Responsibility>
   <cit:role>
    <cit:CI_RoleCode codeListValue="author" codeList="http://www.opengis.net/
guf/2.0/resources/codeList.xml#CI RoleCode"/>
   </cit:role>
   <cit:party>
   <cit:CI_Individual>
     <cit:name>
      <gco:CharacterString>Cristina Domingo-Marimon/gco:CharacterString>
     </cit:name>
    </cit:CI Individual>
   </cit:party>
 </cit:CI_Responsibility>
 </cit:citedResponsibleParty>
 <cit:citedResponsiblePartv>
 <cit:CI Responsibility>
   <cit:role>
    <cit:CI_RoleCode codeListValue="author" codeList="http://www.opengis.net/</pre>
guf/2.0/resources/codeList.xml#CI_RoleCode"/>
   </cit:role>
   <cit:party>
    <cit:CI_Individual>
     <cit:name>
      <gco:CharacterString>Alaitz Zabala/gco:CharacterString>
     </cit:name>
    </cit:CI Individual>
   </cit:party>
 </cit:CI Responsibility>
 </cit:citedResponsibleParty>
 <cit:presentationForm>
  <cit:CI PresentationFormCode codeListValue="documentDigital" codeList="http:
//www.opengis.net/guf/2.0/resources/codeList.xml#CI RoleCode"/>
 </cit:presentationForm>
 <cit:series>
  <cit:CI Series>
   <cit:name>
    <gco:CharacterString>International Journal of Digital Earth </gco:</pre>
CharacterString>
   </cit:name>
   <cit:issueIdentification>
   <gco:CharacterString>Volume 13, number 2</gco:CharacterString>
   </cit:issueIdentification>
   <cit:page>
   <gco:CharacterString>217-235</gco:CharacterString>
   </cit:page>
  </cit:CI Series>
 </cit:series>
 <cit:otherCitationDetails>
 <gco:CharacterString>2020, VOL. 13, NO. 2, 217-235/gco:CharacterString>
 </cit:otherCitationDetails>
 <cit:onlineResource>
  <cit:CI OnlineResource>
   <cit:linkage>
    <gco:CharacterString>https://www.tandfonline.com/doi/epdf/10.1080/
17538947.2019.1576787</gco:CharacterString>
```

```
</cit:linkage>
   <cit:description>
    <gco:CharacterString>Paper information (and possible download)</gco:
CharacterString>
   </cit:description>
   <cit:function>
    <cit:CI OnLineFunctionCode codeListValue="information" codeList=
"http://www.isotc211.org/2005/resources/Codelist/ML_gmxCodelists.xml#CI_
OnLineFunctionCode">information
    </cit:CI OnLineFunctionCode>
   </cit:function>
  </cit:CI_OnlineResource>
 </cit:onlineResource>
 <qcm:abstract>
  <gco:CharacterString>
 In recent years, researchers of different communities have increased their
efforts in formalizing a set of measurements regularly collected for analysing
changes in Drivers, States, Impacts and Responses of a given discipline. In
some cases, different actors have converged in a minimum set of Essential
Variables (EVs), such as for Climate, Biodiversity or Oceans. The definition
of such EVs is an ongoing evolution and in extension (e.g. EVs for water)
although some communities have not even started (e.g. agriculture and energy).
This paper characterizes the Earth Observation (EO) networks and creates a
graph representation of their relations. Secondly, this graph is enriched with
the EVs produced by each network creating a knowledge base. Finally, an effort
has been done to identify links between EVs and Sustainable Development Goals
(SDG) indicators in a way that they indirectly connect the EO. An analysis
to detect gaps in EO variables due to a lack of observational networks is
performed. Several suggestions for improving SDG indicators framework by
considering EVs are exposed, as well as proposing new necessary EVs and
suggesting new EO based indicators. The complete graph is available in the
ENEON website (http://www.eneon.net/graph-ev-sdg/).
  </gco:CharacterString>
 </qcm:abstract>
 <qcm:highlights>
  <gco:CharacterString>There is a need for a common and comprehensive list
of Essential Variables. Research infrastructures need to be characterized in
terms of the EV they are able to produce. Policy monitoring can benefit from
Earth observation.</gco:CharacterString>
 </acm:highlights>
 <qcm:kevwords>
  <mri:MD Keywords>
   <mri:kevword>
    <gco:CharacterString>gap analysis/gco:CharacterString>
   </mri:keyword>
   <mri:keyword>
    <gco:CharacterString>policy monitoring</gco:CharacterString>
   </mri:keyword>
   <mri:keyword>
    <gco:CharacterString>essential variables</gco:CharacterString>
   </mri:keyword>
   <mri:keyword>
    <gco:CharacterString>earth observation/gco:CharacterString>
   </mri:kevword>
  </mri:MD Kevwords>
 </gcm:keywords>
 <qcm:categorv>
  <qcm:QCM PublicationCategoryCode codeListValue="journalArticle"</pre>
codeList="http://www.opengis.net/guf/1.0/resources/codeList.xml#QCM_
PublicationCategoryCode"/>
 </qcm:category>
```

Listing 1

The following code shows a xml encoding example for QCM_DiscoveredIssue:

```
<qcm:QCM DiscoveredIssue
 xmlns:qcm="http://www.opengis.net/guf/2.0/common"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
 xmlns:gco="http://standards.iso.org/iso/19115/-3/gco/1.0"
 xsi:schemaLocation="http://www.opengis.net/guf/2.0/common
 https://schemas.opengis.net/guf/2.0/qcm.xsd">
 <qcm:knownProblem>
  <gco:CharacterString>
   These maps cannot be used for land cover change detection since the error
in the original map is higher than the change detected (e.g. GLC-2000 versus
GlobCover). Due to the large disagreements between these land cover products,
we recommend that the user community does not, by default, use the latest
product with the highest resolution, but carefully examines the sensitivity of
these products within a specific application.
  </gco:CharacterString>
 </gcm:knownProblem>
 <qcm:workAround>
  <gco:CharacterString>
   In the situation where the maps are used for national and regional
applications, we would recommend examining the disagreement of the products
in the areas of interest and also to compare them with high resolution ground
data or aerial photography. One way to do this would be to use geo-wiki.org
(Fritz et al 2009), a global land cover validation tool, which can be used to
visualize the global land cover products and the disagreement directly on top
of Google Earth. By exploring the discrepancies at the level of an individual
country in combination with local knowledge, the user can gain insight into
which product is better in a specific region and which product is better suited
for a particular application. Crowd-sourced data in the form of geo-tagged
photos and information collected through Web 2.0 applications like geo-wiki
and smart phones could also be harnessed as a rich source of training and
calibration data fo global land cover algorithms.
  </gco:CharacterString>
 </qcm:workAround>
</qcm:QCM DiscoveredIssue>
```

Listing 2

The following code shows a xml encoding example for QCM_ReproducibleUsage:

```
<qcm:QCM ReproducibleUsage
xmlns:mri="http://standards.iso.org/iso/19115/-3/mri/1.0"
xmlns:qcm="http://www.opengis.net/guf/2.0/common"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
 xmlns:gco="http://standards.iso.org/iso/19115/-3/gco/1.0"
 xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns:gcx= "http://standards.iso.org/iso/19115/-3/gcx/1.0"
xmlns:cit="http://standards.iso.org/iso/19115/-3/cit/2.0"
xsi:schemaLocation="http://www.opengis.net/guf/2.0/common
https://schemas.opengis.net/guf/2.0/qcm.xsd">
 <mri:specificUsage>
  <gco:CharacterString>Sharing style for an NDSI based snow coverage mask to
extract snow surfaces from Sentinel 2 L2A images</gco:CharacterString>
 </mri:specificUsage>
 <mri:usageDateTime>
  <gml:TimeInstant gml:id="usageDateTime id">
   <gml:timePosition>2023-06-16T13:38:00Z/gml:timePosition>
  </gml:TimeInstant>
```

```
</mri:usageDateTime>
 <mri:userDeterminedLimitations><gco:CharacterString>Water bodies
may be detected as snow covered surfaces</gco:CharacterString></mri:
userDeterminedLimitations>
 <mri:userContactInfo>
   <cit:CI Responsibility>
    <cit:role>
     <cit:CI_RoleCode codeListValue="author" codeList="http://www.opengis.net/
guf/2.0/resources/codeList.xml#CI RoleCode"/>
    </cit:role>
    <cit:party>
     <cit:CI_Individual>
       <cit:name>
        <gco:CharacterString>Olaf Banzai/gco:CharacterString>
       </cit:name>
       <cit:contactInfo>
        <cit:CI Contact>
         <cit:address>
           <cit:CI Address>
            <cit:electronicMailAddress>
              <gco:CharacterString>olaf.banzai@mail.com/gco:CharacterString>
            </cit:electronicMailAddress>
           </cit:CI Address>
          </cit:address>
        </cit:CI Contact>
       </cit:contactInfo>
     </cit:CI_Individual>
    </cit:party>
   </cit:CI_Responsibility>
 </mri:userContactInfo>
 <qcm:codeSnippet>
<gco:CharacterString>{"nom":null,"desc":"SnowMask","TipusObj":"P",
"component":[{"calcul":"(({\"i_capa\":235,\"i_valor\":2}-{\"i_capa\":235,
"component":[{"calcul":"(({\"i_capa\":235,\"i_valor\":2}-{\"i_capa\":235,\\"i_valor\\":2}+{\\"i_capa\\":235,\\"i_valor\\":10})/({\\"i_capa\\":235,\\"i_valor\\":2}+{\\"i_capa\\":235,\\"i_valor\\":10}))>0.4","estiramentPaleta":{\"auto\":false,\"valorMaxim\":1.60182954451864,\\"valorMinim\":-0.02371909222285906},\"FormulaConsulta\":\"((v[2]-v[10])/(v[2]+v[10]))>0.4\",\"formulaInterna\":\"((v[2]-v[10])/(v[2]+v[10]))>0.4\"}],\"metadades\":null,\"nItemLlegAuto\":20,\"ncol\":4,\"descColorMultiplesDe\":0.01,\"origen\":\"usuari\"}</gco:CharacterString>
 </gcm:codeSnippet>
 <qcm:codeMediaType>
   <gcx:MimeFileType type="application/json">application/json/gcx:MimeFileType>
 </gcm:codeMediaType>
 <qcm:platform>
   <gco:CharacterString>https://github.com/joanma747/MiraMonMapBrowser</gco:</pre>
CharacterString>
 </qcm:platform>
 <qcm:version>
   <gco:CharacterString>6.0</gco:CharacterString>
 </acm:version>
 <qcm:schema>
   <gco:CharacterString>config-schema.json#/definitions/estil</gco:</pre>
CharacterString>
 </gcm:schema>
 <qcm:suggestedApplication>
   <gco:CharacterString>http://maps.ecopotential-project.eu/</gco:</pre>
CharacterString>
 </qcm:suggestedApplication>
</qcm:QCM_ReproducibleUsage>
```

Listing 3

7.2. 7.2 Requirements Class User Feedback Item

This requirements class defines the data model classes that are involved in the definition of an individual user feedback item. The GUF model makes an effort to remain as simple as possible but comprehensive enough, in order to allow for simple user interfaces that can cover different levels of expertise on geospatial data usage. The following are examples of what the GUF model allows: commenting, asking questions, providing answers (the GUF_UserComment class), rating data (GUF_Rating), citing publications (QCM_Publication), providing a quality measure (additionalQuality), documenting additional lineage information (additional LineageSteps) or emphasizing a significant event that conditions the interpretation of a dataset (GUF_SignificantEvent).

Each one of the previous examples is considered an "item" of feedback. Geospatial User Every item is set into a context by a combination of target, citations and scope. Feedback can be provided both about data or metadata.

REQUIREMENTS CLASS 2: REQUIREMENTS CLASS 'USER FEEDBACK ITEM'	
IDENTIFIER	https://www.opengis.net/spec/guf-schema/2.0/req/user-feedback-item
TARGET TYPE	Feedback Item
PREREQUISITE	/req/quality-common
NORMATIVE STATEMENT	Requirement 2-1: /req/feedback-item/guf-schema

The guf.xsd schema has been derived automatically from the OGC 15-097 UML model. No tables describing the naming of the elements and subelements are reproduced here due to they will be the same specified in the conceptual model.

The following code shows a xml encoding example for GUF_FeedbackItem

```
<gco:CharacterString>Comparison with other land cover products is difficult
because legends are not compatible</gco:CharacterString>
 </guf:abstract>
 <guf:contactRole>
  <guf:GUF UserRoleCode codeListValue="researchEndUser" codeList="http://www.</pre>
opengis.net/guf/2.0/resources/codeList.xml#CI RoleCode#GUF UserRoleCode"></guf:
GUF UserRoleCode>
 </guf:contactRole>
 <guf:dateInfo>
  <cit:CI_Date>
   <cit:date>
    <gco:DateTime>2006-03-01T00:00:00Z
   </cit:date>
   <cit:dateType>
    <cit:CI DateTypeCode codeList="http://wis.wmo.int/2008/catalogues/draft</pre>
version 1-1/WMO Codelists ver1 1.xml#CI DateTypeCode" codeListValue="creation"/
   </cit:dateType>
  </cit:CI Date>
 </guf:dateInfo>
 <guf:contact>
  <guf:GUF UserInformation>
   <guf:userDetails>
    <cit:CI Individual>
     <cit:name>
      <gco:CharacterString>Henrique M. Pereira</gco:CharacterString>
     </cit:name>
    </cit:CI_Individual>
   </guf:userDetails>
   <guf:applicationDomain>
    <guf:GUF_ApplicationDomain>
     <guf:domain>
      <cit:CI_RoleCode codeListValue="use" codeList="http://wis.wmo.int/2008/</pre>
catalogues/draft version 1-1/WMO Codelists ver1 1.xml#CI RoleCode"></cit:CI
RoleCode>
     </guf:domain>
     <guf:expertiseLevel><guf:GUF RatingCode codeListValue="5" codeList="http:</pre>
//www.opengis.net/guf/1.0/resources/codeList.xml#GUF RatingCode"></guf:GUF
RatingCode></guf:expertiseLevel>
    </guf:GUF_ApplicationDomain>
   </guf:applicationDomain>
  </guf:GUF_UserInformation>
 </guf:contact>
 <guf:userComment>
  <guf:GUF UserComment>
   <guf:comment>
    <gco:CharacterString>Surprisingly, there are no directly comparable
sets of global land-cover data for two different dates. For instance, the
Global Land Cover for the year 2000 (GLC 2000) based on SPOT VEGETATION
(https://forobs.jrc.ec.europa.eu/products/glc2000) is not directly comparable
with the International Geosphere-Biosphere Programme (IGBP) Land Cover
(1992-1993, https://www.usgs.gov/centers/eros/science/usgs-eros-archive-
land-cover-products-global-land-cover-characterization-glcc) based on
the National Oceanic and Atmospheric Administration Advanced Very High
Resolution Radiometer (NOAA-AVHRR). The difficulties arise from the use
of different sensors, different land-cover classification systems (including
different definitions of forest) and different classification methods.</gco:
CharacterString>
   </guf:comment>
  </guf:GUF UserComment>
 </guf:userComment>
 <guf:target>
  <guf:GUF FeedbackTarget>
```

```
<guf:resourceRef>
    <cit:CI Citation>
     <cit:title><gco:CharacterString>Global Land Cover 2000</gco:</pre>
CharacterString></cit:title>
     <cit:onlineResource><cit:CI OnlineResource>
      <cit:linkage><gco:CharacterString>https://forobs.jrc.ec.europa.eu/
products/glc2000/products.php</gco:CharacterString></cit:linkage>
     </cit:CI OnlineResource></cit:onlineResource>
    </cit:CI_Citation>
   </guf:resourceRef>
   <guf:scope>
    <mcc:MD_Scope>
     <mcc:level>
      <mcc:MD_ScopeCode codeListValue="dataset" codeList="http://standards.</pre>
iso.org/iso/19115/resources/Codelist/cat/codeLists.xml#MD ScopeCode"></mcc:MD
ScopeCode>
     </mcc:level>
    </mcc:MD Scope>
   </guf:scope>
   <guf:role>
    <guf:GUF TargetRoleCode codeListValue="primary" codeList="http://www.</pre>
opengis.net/guf/1.0/resources/codeList.xml#GUF TargetRoleCode"></guf:GUF
TargetRoleCode>
   </guf:role>
  </guf:GUF FeedbackTarget>
 </guf:target>
 <guf:target>
  <guf:GUF_FeedbackTarget>
   <guf:resourceRef>
    <cit:CI_Citation>
     <cit:title><gco:CharacterString>Global Land Cover Characterization</gco:
CharacterString></cit:title>
     <cit:onlineResource><cit:CI_OnlineResource>
      <cit:linkage><gco:CharacterString>https://www.usgs.gov/centers/
eros/science/usgs-eros-archive-land-cover-products-global-land-cover-
characterization-glcc</gco:CharacterString></cit:linkage>
     </cit:CI OnlineResource></cit:onlineResource>
    </cit:CI Citation>
   </guf:resourceRef>
   <guf:scope>
    <mcc:MD Scope>
     <mcc:level>
      <mcc:MD_ScopeCode codeListValue="dataset" codeList="http://standards.</pre>
iso.org/iso/19115/resources/Codelist/cat/codeLists.xml#MD ScopeCode"></mcc:MD
ScopeCode>
     </mcc:level>
    </mcc:MD Scope>
   </guf:scope>
   <guf:role>
    <guf:GUF TargetRoleCode codeListValue="primary" codeList="http://www.</pre>
opengis.net/guf/1.0/resources/codeList.xml#GUF TargetRoleCode"></guf:GUF
TargetRoleCode>
   </guf:role>
  </guf:GUF FeedbackTarget>
 </guf:target>
</guf:GUF_FeedbackItem>
```

Listing 4

8. GEOSPATIAL USER FEEDBACK MODEL. EXTENSIONS

8. GEOSPATIAL USER FEEDBACK MODEL. EXTENSIONS

This section describes two requirements classes that are considered extensions of the XML encoding core: the User Feedback Summary and the User Feedback Collection.

8.1. 8.1 Requirements Class User Feedback Summary Extension

This requirements class defines the XML encoding classes that allow for encoding summary statistics of feedback items that share the same target.

REQUIREMENTS CLASS 3: REQUIREMENTS CLASS 'FEEDBACK SUMMARY'	
IDENTIFIER	https://www.opengis.net/spec/guf-schema/2.0/req/feedback-summary
TARGET TYPE	Feedback Summary
PREREQUISITE	/req/feedback-item
NORMATIVE STATEMENT	Requirement 3-1: /req/feedback-summary/ufs-schema

The ufs.xsd schema has been derived automatically from the OGC 15-097 UML model [8]. No tables describing the naming of the elements and subelements are reproduced here as they are specified in the conceptual model.

The following code shows a xml encoding example for UFS FeedbackSummary

<UFS_FeedbackSummary xmlns:mcc="http://standards.iso.org/iso/19115/-3/mcc/1.0" xmlns:mri="http://standards.iso.org/iso/19115/-3/mri/1.0" xmlns:cit="http://standards.iso.org/iso/19115/-3/cit/1.0" xmlns:gco="http://standards.iso.org/iso/19115/-3/gco/1.0" xmlns:guf="http://www.opengis.net/guf/1.0/core" xmlns="http://www.opengis.net/guf/1.0/summary" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xlink="http://www.w3.org/1999/xlink" xsi:schemaLocation="http://www.opengis.net/guf/1.0/summary ../ufs.xsd"> <target> <cit:CI_Citation> <cit:title></cit:title> <cit:identifier> <mcc:MD Identifier>

```
<mcc:code>
      <gco:CharacterString>GLC2000</gco:CharacterString>
     </mcc:code>
     <mcc:codeSpace>
      <gco:CharacterString>jrc.ec.europa.eu</gco:CharacterString>
     </mcc:codeSpace>
    </mcc:MD Identifier>
   </cit:identifier>
  </cit:CI_Citation>
 </target>
 <numberOfFeedbackItems><gco:Integer>4</gco:Integer></numberOfFeedbackItems>
 <minimumPossibleRating><gco:Real>1.0</gco:Real></minimumPossibleRating>
 <maximumPossibleRating><gco:Real>5.0</gco:Real></maximumPossibleRating>
 <averageRating><gco:Real>5.0</gco:Real></averageRating>
 <numberOfRatings><gco:Integer>0</gco:Integer></numberOfRatings>
 <numberOfUserComments><gco:Integer>3</gco:Integer></numberOfUserComments>
 <numberOfUsageReports><gco:Integer>2</gco:Integer></numberOfUsageReports>
 <numberOfCitations><gco:Integer>4</gco:Integer></numberOfCitations>
 <numberOfAdditionalQualities><gco:Integer>3</gco:Integer></</pre>
numberOfAdditionalQualities>
 <numberOfAdditionalLineages><gco:Integer>0</gco:Integer>
numberOfAdditionalLineages>
 <numberOfSignificantEvents><gco:Integer>0</gco:Integer>
numberOfSignificantEvents>
</UFS FeedbackSummary>
```

Listing 5

8.2. 8.2 Requirements Class User Feedback Collection Extension

This requirements class defines the XML encoding classes that allow for grouping of feedback items into a feedback response and feedback collection with summary statistics. A feedback collection is a collection of a feedback items that share a common target and share the same rating code list.

REQUIREMENTS CLASS 4:	REQUIREMENTS CLASS 'FEEDBACK COLLECTION'
IDENTIFIER	https://www.opengis.net/spec/guf-schema/2.0/req/feedback-collection
TARGET TYPE	Feedback Collection
PREREQUISITE	/req/feedback-collection
NORMATIVE STATEMENT	Requirement 4-1: /req/feedback-collection/ufc-schema

The ufc.xsd schema has been derived automatically from the OGC 15-097 UML model [2]. No tables describing the naming of the elements and subelements are reproduced here as they are specified in the conceptual model.

The following code shows a xml encoding example for UFC FeedbackCollection

```
<?xml version="1.0" encoding="UTF-8"?>
<ufc:UFC FeedbackCollection
   xmlns:mcc="http://standards.iso.org/iso/19115/-3/mcc/1.0"
   xmlns:mdq="http://standards.iso.org/iso/19157/-2/mdq/1.0"
   xmlns:mri="http://standards.iso.org/iso/19115/-3/mri/1.0"
   xmlns:cit="http://standards.iso.org/iso/19115/-3/cit/1.0"
   xmlns:gco="http://standards.iso.org/iso/19115/-3/gco/1.0"
   xmlns:qcm="http://www.opengis.net/guf/1.0/common'
   xmlns:guf="http://www.opengis.net/guf/1.0/core"
   xmlns:ufc="http://www.opengis.net/guf/1.0/collection"
   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xlink="http://
www.w3.org/1999/xlink"
   xsi:schemaLocation="http://www.opengis.net/guf/1.0/collection ../ufc.xsd">
 <ufc:item>
 <guf:GUF FeedbackItem>
   <guf:itemIdentifier>
   <mcc:MD Identifier>
    <mcc:code>
     <gco:CharacterString>GCL2000 feedack item 2</gco:CharacterString>
    </mcc:code>
   </mcc:MD Identifier>
   </guf:itemIdentifier>
   <guf:abstract>
   <gco:CharacterString>Comparing several global land cover products, i.e.
the Global Land Cover Characterization Database (GLCC), Global Land Cover 2000
(GLC2000), and the MODIS land cover product, reveil individual strengths and
weaknesses of mapping approaches.</gco:CharacterString>
   </guf:abstract>
  <guf:contactRole>
   <guf:GUF UserRoleCode codeListValue="researchEndUser" codeList="">
researchEndUser</guf:GUF UserRoleCode>
   </guf:contactRole>
   <guf:dateInfo>
   <cit:CI Date>
    <cit:date>
     <gco:DateTime>2006-01-01T00:00:00Z
    </cit:date>
    <cit:dateType>
</cit:dateType>
   </cit:CI Date>
   </guf:dateInfo>
   <guf:citation>
   <cit:CI Citation>
    <cit:title>
     <gco:CharacterString>Exploiting synergies of global land cover products
for carbon cycle modeling</gco:CharacterString>
    </cit:title>
    <cit:date>
     <cit:CI Date>
      <cit:date>
       <gco:DateTime>2006-01-01T00:00:00Z</gco:DateTime>
      </cit:date>
      <cit:dateType>
```

```
<cit:CI DateTypeCode codeList="http://wis.wmo.int/2008/catalogues/</pre>
draft version 1-1/WMO Codelists ver1 1.xml#CI DateTypeCode" codeListValue=
"creation"/>
       </cit:dateType>
      </cit:CI Date>
     </cit:date>
     <cit:series>
      <cit:CI_Series>
       <cit:name>
        <gco:CharacterString>Remote Sensing of Environment/gco:
CharacterString>
       </cit:name>
      </cit:CI_Series>
     </cit:series>
     <cit:otherCitationDetails>
      <gco:CharacterString>101 (2006) 534-553/gco:CharacterString>
     </cit:otherCitationDetails>
    </cit:CI Citation>
   </guf:citation>
   <guf:additionalQuality>
    <mdq:DQ DataQuality><mdq:scope><mcc:MD Scope>
     <mcc:level><mcc:MD ScopeCode codeList="http://standards.iso.org/iso/19115/</pre>
resources/Codelist/cat/codeLists.xml#MD ScopeCode" codeListValue="dataset"/></
mcc:level>
    </mcc:MD Scope></mdq:scope>
    <mdq:report><mdq:DQ DomainConsistency>
     <mdq:result>
      <mdq:DQ DescriptiveResult>
       <mdq:statement><gco:CharacterString>14% of the area of the GLCC,
GLC2000, and MODIS land cover maps, reclassified to the SIMPLE legend disagree
in the all three land cover maps. Areas where all maps disagree or only
two maps agree seem to be associated with mainly transitional ecozones with
mixtures of the three main components trees, shrubs and grasses such as
tropical savannas including the Sahel, Mediterranean Europe, and tundra.</
gco:CharacterString></mdq:statement>
      </mdq:DQ DescriptiveResult>
     </mdq:result>
    </mdq:DQ DomainConsistency></mdq:report>
    </mdq:DQ DataQuality>
   </guf:additionalQuality>
   <guf:usage>
    <guf:GUF_UsageReport>
     <guf:usageDescription>
      <mri:MD Usage>
       <mri:specificUsage><gco:CharacterString>GLCC, GLC2000 and MODIS land
cover products comparison</gco:CharacterString></mri:specificUsage>
      </mri:MD Usage>
     </guf:usageDescription>
     <guf:discoveredIssue>
      <qcm:QCM DiscoveredIssue>
       <qcm:knownProblem>
        <gco:CharacterString>None of legends of all three global land
cover products are easily translated into the land cover classes of
 vegetation models without introducing uncertainty due to poor definition of
mixed
classes or a lack of information about leaf type and phenology.</gco:
CharacterString>
       </gcm:knownProblem>
      </qcm:QCM_DiscoveredIssue>
     </guf:discoveredIssue>
    </guf:GUF UsageReport>
   </guf:usage>
   <guf:contact>
```

```
<guf:GUF UserInformation>
      <guf:userDetails>
       <cit:CI Responsibility>
        <cit:role>
         <cit:CI RoleCode codeList="http://wis.wmo.int/2008/catalogues/draft</pre>
version 1-1/WMO Codelists ver1 1.xml#CI RoleCode" codeListValue="user"/>
        </cit:role>
        <cit:party>
         <cit:CI Individual>
          <cit:name>
           <gco:CharacterString>Martin Jung/gco:CharacterString>
          </cit:name>
         </cit:CI_Individual>
        </cit:party>
       </cit:CI Responsibility>
     </guf:userDetails>
     <guf:expertiseLevel>
       <guf:GUF RatingCode codeListValue="5" codeList="http://www.opengis.net/</pre>
guf/1.0/resources/codeList.xml#GUF_RatingCode"></guf:GUF_RatingCode>
     </guf:expertiseLevel>
    </guf:GUF UserInformation>
   </guf:contact>
   <guf:userComment>
    <guf:GUF UserComment>
     <guf:comment>
       <gco:CharacterString> GLCC is based on poorly or uncorrected raw data,
using only monthly NDVI composites that also have some geometric problems.
The VEGA data set of GLC2000 with daily composites of calibrated spectral
bands and NDVI offers significantly improved data and more flexibility
 for classification. A further advantage of the VEGA2000 is the effective
geometric correction procedures (Bartholomé & Belward, 2005). The input data sets of the MODIS product supersede GLCC and GLC2000 in terms
 of the spectral properties of the MODIS instrument, specifically designed
for land surface mapping. Also, the MODIS data are based on higher spatial resolution of the raw data (250m/500m) and comprehensive strategies of
data correction and calibration. Regarding the applied classification methods, MLCCA (MODIS land cover classification algorithm) clearly seems the
most sophisticated algorithm. In contrast to GLCC and GLC2000, it is purely
objective, reproducible and operational for the whole globe, thus seems most suitable for change detection. GLCC offers the most flexibility for users
in terms of available reclassifications including the Olsen classification
with 94 classes. MODIS is also available in different legends, which is
not the case for GLC2000. LCCS of GLC2000 is the most advanced and flexible
classification system with a clear rationale and standardized definition of
the classes. Although GLC2000 benefits strongly from the use of LCCS and its
regional bottom-up approach, its global map lacks some internal consistency
associated with the individual mapping initiatives by different project
participants.</gco:CharacterString>
     </guf:comment>
    </guf:GUF UserComment>
   </guf:userComment>
   <guf:target>
    <guf:GUF FeedbackTarget>
     <guf:resourceRef xlink:href="http://www-gvm.jrc.it/glc2000">
       <cit:CI Citation>
        <cit:title></cit:title>
        <cit:identifier>
         <mcc:MD Identifier>
          <mcc:code>
           <gco:CharacterString>GLC2000</gco:CharacterString>
          </mcc:code>
          <mcc:codeSpace>
           <gco:CharacterString>jrc.ec.europa.eu</gco:CharacterString>
```

```
</mcc:codeSpace>
        </mcc:MD Identifier>
       </cit:identifier>
      </cit:CI Citation>
     </guf:resourceRef>
     <guf:scope>
      <mcc:MD Scope>
       <mcc:level>
        <mcc:MD_ScopeCode codeListValue="dataset" codeList="http://standards.</pre>
iso.org/iso/19115/resources/Codelist/cat/codeLists.xml#MD ScopeCode"/>
       </mcc:level>
      </mcc:MD_Scope>
     </guf:scope>
     <guf:role>
      <guf:GUF_TargetRoleCode codeListValue="primary" codeList="http://www.</pre>
opengis.net/guf/1.0/resources/codeList.xml#GUF TargetRoleCode"></guf:GUF
TargetRoleCode>
     </guf:role>
    </guf:GUF FeedbackTarget>
   </guf:target>
   <guf:target>
    <guf:GUF FeedbackTarget>
     <guf:resourceRef xlink:href="http://edcdaac.usgs.gov/glcc/globdoc2 0.asp">
      <cit:CI Citation>
       <cit:title></cit:title>
       <cit:identifier>
        <mcc:MD Identifier>
         <mcc:code>
          <gco:CharacterString>Global Land Cover Characterization DataBase
(GLCC)</gco:CharacterString>
         </mcc:code>
        </mcc:MD Identifier>
       </cit:identifier>
      </cit:CI Citation>
     </guf:resourceRef>
     <guf:scope>
      <mcc:MD Scope>
       <mcc:level>
        <mcc:MD ScopeCode codeListValue="dataset" codeList="http://standards.</pre>
iso.org/iso/19115/resources/Codelist/cat/codeLists.xml#MD ScopeCode"/>
       </mcc:level>
      </mcc:MD Scope>
     </guf:scope>
     <guf:role>
      <guf:GUF_TargetRoleCode codeListValue="primary" codeList="http://www.</pre>
opengis.net/guf/1.0/resources/codeList.xml#GUF TargetRoleCode"></guf:GUF
TargetRoleCode>
     </guf:role>
    </guf:GUF_FeedbackTarget>
   </guf:target>
   <guf:target>
    <guf:GUF FeedbackTarget>
     <guf:resourceRef>
      <cit:CI Citation>
       <cit:title></cit:title>
       <cit:identifier>
        <mcc:MD Identifier>
         <mcc:code>
          <gco:CharacterString>The MODIS land cover product</gco:</pre>
CharacterString>
         </mcc:code>
        </mcc:MD Identifier>
       </cit:identifier>
```

```
</cit:CI_Citation>
     </guf:resourceRef>
     <guf:scope>
      <mcc:MD Scope>
       <mcc:level>
        <mcc:MD ScopeCode codeListValue="dataset" codeList="http://standards.</pre>
iso.org/iso/19115/resources/Codelist/cat/codeLists.xml#MD_ScopeCode"/>
       </mcc:level>
      </mcc:MD_Scope>
     </guf:scope>
     <guf:role>
      <guf:GUF_TargetRoleCode codeListValue="primary" codeList="http://www.</pre>
opengis.net/guf/1.0/resources/codeList.xml#GUF_TargetRoleCode"></guf:GUF_
TargetRoleCode>
     </guf:role>
    </guf:GUF_FeedbackTarget>
   </guf:target>
  </guf:GUF FeedbackItem>
 </ufc:item>
 <ufc:pagination>
  <ufc:UFC ResponsePagination>
   <ufc:numberOfFeedbackItems><gco:Integer>1</gco:Integer></ufc:
numberOfFeedbackItems>
   <ufc:count><gco:Integer>1</gco:Integer></ufc:count>
  </ufc:UFC ResponsePagination>
 </ufc:pagination>
</ufc:UFC_FeedbackCollection>
```

Listing 6

ANNEX A: CONFORMANCE CLASS ABSTRACT TEST SUITE (NORMATIVE)

ANNEX A: CONFORMANCE CLASS ABSTRACT TEST SUITE (NORMATIVE)

A GUF XML implementation of this standard must satisfy the following system characteristics to be conformant with this specification.

9.1. A.1 Conformance class: Quality Common

The OGC URI identifier of this conformance class is:

http://www.opengis.net/spec/geospatial-user-feedback-xml/1.0/conf/quality-common

Tests identifiers below are relative to http://www.opengis.net/spec/geospatial-user-feedback-xml/1.0

9.1.1. A.1.1 MIME type

Example

Test id	conf/quality-common/mime-type
Test Purpose	include:/requirements/requirement001.adoc[]
Test method	Validate the MIME type Test passes if the encoded instances have the associated MIME type application/xml.

9.1.2. A.1.2 File extension

Example

Test id	/conf/quality-common/file-extension
Test Purpose	include::./requirement002.adoc[]
Test method	Validate the file extension Test passes if a file system is used and the encoded instances are files with '.xml' file extension

9.1.3. A.1.3 ISO XML rules

Example

Test id	/conf/quality-common/encoding-rules
Test Purpose	include::./requirement003.adoc[]
Test method	Validate the encoding rules followed Test passes if the encoded instances follow ISO-19139 conformance classes.

9.1.4. A.1.4 ISO XML schema

Example

Test id	/conf/quality-common/iso-schema
Test Purpose	include::./requirement004.adoc[]
Test method	Validate the XML against the right XML schema Test passes if encoded instances validates under the ISO XML schemas for ISO19115-1 and ISO19157-1 that are provided by ISO19115-3 and ISO19157-2 respectively.

9.1.5. A.1.5 Quality common XML schema

Example

Test id	/conf/ quality-common/qcm-schema
Test Purpose	include::./requirement005.adoc[]
Test method	Validate the XML against the right XML schema Test passes if XML elements of the data type QCM_Publication and QCM_ DiscoveredIssue conform to the http://www.opengis.net/geospatial-user-feedback/1.0/conf/quality-common and validate against the quality common schema with the XML namespace http://www.opengis.net/guf/1.0/
	common and encoded in the qcm.xsd



ANNEX A (INFORMATIVE) CONFORMANCE CLASS ABSTRACT TEST SUITE (NORMATIVE)

A

ANNEX A (INFORMATIVE) CONFORMANCE CLASS ABSTRACT TEST SUITE (NORMATIVE)

NOTE: Ensure that there is a conformance class for each requirements class and a test for each requirement (identified by requirement name and number)

A.1. Conformance Class A

В

ANNEX B (INFORMATIVE) XML SCHEMA DOCUMENTS

В

ANNEX B (INFORMATIVE) XML SCHEMA DOCUMENTS

In addition to this document, this standard includes several XML Schema Documents. These XML Schema Documents are available at http://schemas.opengis.net/guf/2.0.

These XML Schema Documents and examples combine the XML schema fragments listed in various subclauses of this document, eliminating duplications. These XML Schema Documents match the GUF UML packages described in the OGC 15-097 Geospatial User Feedback Conceptual Model and were derived from them using ShapeChange application, and are named:

qcm.xsd guf.xsd ufs.xsd ufc.xsd

These XML Schema Documents use and build on the ISO 19115-3 and ISO 19157-2 XML Schema Documents specified by ISO and that are available at http://standards.iso.org/iso, named:

19115/-3/mcc/1.0/mcc.xsd 19157/-2/mdq/1.0/mdq.xsd 19115/-3/gex/1.0/gex.xsd 19115/-3/mri/1.0/mri.xsd 19115/-3/cit/2.0/cit.xsd 19115/-3/gco/1.0/gco.xsd 19115/-3/mrl/1.0/mrl.xsd 19115/-3/lan/1.0/lan.xsd 19115/-3/mdb/1.0/mdb.xsd

All these XML Schema Documents contain documentation of the meaning of each element and attribute, and this documentation shall be considered normative as specified in Subclause 11.6.3 of [1].



ANNEX C (INFORMATIVE) REVISION HISTORY

C ANNEX C (INFORMATIVE) **REVISION HISTORY**

Table C.1 — Revision History

DATE	RELEASE	EDITOR	PRIMARY CLAUSES MODIFIED	DESCRIPTION
2023- 06-07	0.1	Alaitz Zabala	All	GUF XML implementation v.1.0 transcribed to metanorma
2023- 11-24	0.2	Alaitz Zabala	All	First version of GUF XML implementation 2.0
2024- 05-23	0.3	Alaitz Zabala & Oscar González	all	Reviewed version to present to OGC GUF SWG