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OGC OWS Context Atom

Encoding Standard

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Contents Page

[1. Scope 8](#_Toc358030832)

[2. Conformance 9](#_Toc358030833)

[3. References 10](#_Toc358030834)

[4. Terms and Definitions 11](#_Toc358030835)

[4.1 Common Operating Picture 11](#_Toc358030836)

[4.2 Context Document 11](#_Toc358030837)

[4.3 Resource 11](#_Toc358030838)

[4.4 Area Of Interest 11](#_Toc358030839)

[5. Conventions 12](#_Toc358030840)

[5.1 Abbreviated Terms 12](#_Toc358030841)

[5.2 UML notation 13](#_Toc358030842)

[5.3 Data dictionary tables 13](#_Toc358030843)

[5.4 Core and Extension Breakdown 13](#_Toc358030844)

[6. Atom Encoding Specification 15](#_Toc358030845)

[6.1 Overview 15](#_Toc358030846)

[6.2 OWS Core Context Atom Encoding 15](#_Toc358030847)

[6.2.1 Class OWC:Context 16](#_Toc358030848)

[6.2.2 Class OWC:Resource 24](#_Toc358030849)

[6.2.3 DataType OWC:Offering 36](#_Toc358030850)

[6.2.4 DataType OWC:Operation 38](#_Toc358030851)

[6.2.5 DataType OWC:Content 44](#_Toc358030852)

[6.2.6 DataType OWC:StyleSet 45](#_Toc358030853)

[6.2.7 DataType OWC:Creator 49](#_Toc358030854)

[6.2.8 DataType OWC:Creator/OWC:CreatorApplication 49](#_Toc358030855)

[6.2.9 DataType OWC:Creator/OWC:CreatorDisplay 51](#_Toc358030856)

[6.3 Atom WMS Offering 52](#_Toc358030857)

[6.4 Atom WFS Offering 52](#_Toc358030858)

[6.5 Atom WCS Offering 53](#_Toc358030859)

[6.6 Atom WPS Offering 54](#_Toc358030860)

[6.7 Atom CSW Offering 56](#_Toc358030861)

[6.8 Atom WMTS Offering 57](#_Toc358030862)

[6.9 Atom GML Offering 58](#_Toc358030863)

[6.10 Atom KML Offering 59](#_Toc358030864)

[6.11 Atom GeoTIFF Offering 61](#_Toc358030865)

[6.12 Atom GMLJP2 Offering 61](#_Toc358030866)

[6.13 Atom GMLCOV Offering 62](#_Toc358030867)

[A.1 Conformance Test Class: core 65](#_Toc358030868)

[A.2 Conformance Test Class: wms 66](#_Toc358030869)

[A.3 Conformance Test Class: wfs 66](#_Toc358030870)

[A.4 Conformance Test Class: wcs 66](#_Toc358030871)

[A.5 Conformance Test Class: wps 67](#_Toc358030872)

[A.6 Conformance Test Class: csw 67](#_Toc358030873)

[A.7 Conformance Test Class: wmts 67](#_Toc358030874)

[A.8 Conformance Test Class: gml 67](#_Toc358030875)

[A.9 Conformance Test Class: kml 68](#_Toc358030876)

[A.10 Conformance Test Class: geotiff 68](#_Toc358030877)

[A.11 Conformance Test Class: gmljp2 68](#_Toc358030878)

[A.12 Conformance Test Class: gmlcov 68](#_Toc358030879)

**Tables** Page

[Table 1 - OWC:Context mapping to atom:feed 16](#_Toc337049096)

[Table 2 - OWC:Resource mapping to *atom:entry* 24](#_Toc337049097)

[Table 3 - Definitions of owc:Offering elements 36](#_Toc337049098)

[Table 4 - Definitions of owc:Operation elements 38](#_Toc337049099)

[Table 5 - Definitions of owc:Content elements 44](#_Toc337049100)

[Table 6 - Definitions of OWC:styleSet elements 45](#_Toc337049101)

**Figures** Page

[Figure 1 — OWS Context Requirement Class and Document Breakdown 14](#_Toc336985931)

[Figure 2 — OWS Context Standard Packages 15](#_Toc336985932)

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Abstract

This standard describes the Atom encoding of the OWC Context conceptual model. The goal of this standard is to provide a definition of how to encode a context document, which can be extended to allow a context referencing a fully configured service set to be defined and consistently interpreted by clients.

The OGC Web Services Context Document standard (OWS Context) was created to allow a set of configured information resources to be passed between applications primarily as a collection of services (but also potentially in-line content). The objective is to support use cases such as the distribution of search results, the exchange of a set of resources in a common operating picture (COP) or delivery of a set of configured processing services to allow the processing to be reproduced on different nodes.

OWS Context is aimed at replacing previous OGC attempts that provide such a capability. Web Map Context (WMC) has been reasonably successful but is limited to WMS. Other work on the Location Organiser Folder (LOF) was also taken into consideration. The concept of OWS Context and the first prototype document was produced as part of OWS-7 [OGC10-035r1], Information Sharing Engineering Report.

A principle goal of the OWS Context SWG was to develop an encoding that would appeal to the mass market yet also provide facilities for more advanced uses. OWS-7 originally considered the application of existing encoding standards for OWS Context. The group that has produced this standard has concluded that multiple encoding formats can be defined and that each encoding format will be described in a separate OGC Extension to the Core model.

This document concentrates on describing the encoding of the OWS Context Model that is described in abstract terms in a separate document. The goal of OWS Context has been to allow many types of OGC data delivery services to be referenced and therefore exploited (for example, not just OGC Web Map Service but also OGC Web Feature Service, OGC Web Coverage Service and OGC Web Processing Service) but it does not explicitly define the encoding of these services in the core, only the general approach to be used for different types of service interface.

Keywords

The following are keywords to be used by search engines and document catalogues:

OGCDOC, COP, Common Operating Picture, OWC, Context

Preface

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Submitting organizations

The following organizations submitted this Implementation Specification to the Open Geospatial Consortium Inc. as an Implementation Specification:

* Envitia
* Intergraph
* ImageMatters
* NGA
* Terradue
* USGS

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

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| Matt Tricomi | USGS |
| David Wesloh | NGA |
| Jeff Yutzler | Image Matters Inc |

# Scope

This document specifies how applications supporting the OWS Context Atom/xml encoding can exchange information context with other supporting applications in compliance with the OWS Context Conceptual Model.

# Conformance

This document defines a standardization target for encoding an OWS Context Document. It establishes requirements classes for the ‘core’ and then for a series of offering extensions, relating to services or content. The URIs are as follows:

Core: <http://www.opengis.net/spec/owc-atom/1.0/req/core>

WMS: [http://www.opengis.net/spec/owc-atom/1.0/req/wms](http://www.opengis.net/spec/owc-atom/1.0/req/wms/atom)

WFS: [http://www.opengis.net/spec/owc-atom/1.0/req/wfs](http://www.opengis.net/spec/owc-atom/1.0/req/wfs/atom)

WCS: [http://www.opengis.net/spec/owc-atom/1.0/req/wcs](http://www.opengis.net/spec/owc-atom/1.0/req/wcs/atom)

WPS: [http://www.opengis.net/spec/owc-atom/1.0/req/wps](http://www.opengis.net/spec/owc-atom/1.0/req/wps/atom)

WMTS: [http://www.opengis.net/spec/owc-atom/1.0/req/wmts](http://www.opengis.net/spec/owc-atom/1.0/req/wmts/atom)

CSW: [http://www.opengis.net/spec/owc-atom/1.0/req/csw](http://www.opengis.net/spec/owc-atom/1.0/req/csw/atom)

GML: [http://www.opengis.net/spec/owc-atom/1.0/req/gml](http://www.opengis.net/spec/owc-atom/1.0/req/gml/atom)

KML: [http://www.opengis.net/spec/owc-atom/1.0/req/kml](http://www.opengis.net/spec/owc-atom/1.0/req/kml/atom)

GeoTIFF: [http://www.opengis.net/spec/owc-atom/1.0/req/geotiff](http://www.opengis.net/spec/owc-atom/1.0/req/geotiff/atom)

GMLJP2: [http://www.opengis.net/spec/owc-atom/1.0/req/gmljp2](http://www.opengis.net/spec/owc-atom/1.0/req/gmljp2/atom)

GMLCOV: [http://www.opengis.net/spec/owc-atom/1.0/req/gmlcov](http://www.opengis.net/spec/owc-atom/1.0/req/gmlcov/atom)

Requirements and conformance test URIs defined in this document are relative to the base URL <http://www.opengis.net/spec/owc-atom/1.0>.

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 site.

In order to conform to this OGC® interface standard, an encoding standard shall choose to implement any one of the conformance levels specified in Annex A (normative).

This Standard defines the core conformance level as compliance with the Atom encoding of the core specification; this is mandatory. Compliance with any of the service or encoding specific extensions is optional and there is no interrelationship in term of these extensions.

Requirements for 2 standardization target types are considered:

1. **An OWS Context Document Encoded in Atom.**
2. **The interpretation of an OWS Context Document by a client (Requirements and abstract tests for this are not included in this release of the document.)**

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 site[[1]](#footnote-1)[1].

In order to conform to this OGC® interface standard, a software implementation shall choose to implement:

1. Conformance to the ‘Core Atom’ encoding.
2. Conformance with zero or more of the offering-specific extensions.

All requirements-classes and conformance-classes described in this document are owned by the standard identified as OWS Context (OGC:12-084) .

# References

The following normative documents contain provisions that, through reference in this text, constitute provisions of this document. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. For undated references, the latest edition of the normative document referred to applies.

The following documents are referenced by this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

[OGC 12-080] – OWS Context Conceptual Model

[GEORSS] - http://georss.org/Main\_Page

[ISO-8601] - Data elements and interchange formats — Information interchange — Representation of dates and times, Third edition 2004-12-01, ISO.

[OGC 05-077r4] - OGC Symbology Encoding Implementation Specification

[OGC 06-042] - OGC Web Map Service (WMS) Implementation Specification

[OGC 06-121r9] - OGC Web Service Common Implementation Specification

[OGC 07-036] - OGC Geography Markup Language (GML) Encoding Standard

[RFC-3339] - Date and Time on the Internet: Timestamps,

[RFC-3986] - Uniform Resource Identifier (URI): Generic Syntax

[RFC-3987] - Internationalized Resource Identifiers (IRIs)

[RFC-4287] - The Atom Syndication Format

[XML 1.0 W3C] - Extensible Markup Language (XML) 1.0 (Third Edition) - http://www.w3.org/TR/2004/REC-xml-20040204/

# Terms and Definitions

This document uses the terms defined in Sub-clause 5.3 of [OGC 06-121r9], 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.

For the purposes of this document, the following additional terms and definitions apply.

The following terms and definitions are used through this document:

## Common Operating Picture

A single identical display of relevant information shared by more than one command. A common operational picture facilitates collaborative planning and assists all echelons to achieve situational awareness.

## Context Document

A Context Document is a document describing the set of services and their configuration, and ancillary information (area of interest etc) that defines the information representation of a common operating picture.

## Resource

A resource is a configured set of information that is uniquely identifiable to a user. Can be realized as in-line content or by one or more configured web services.

## Area Of Interest

An Area of Interest is a geographic area that is significant to a user.

# Conventions

This sections provides details and examples for any conventions used in the document. Examples of conventions are symbols, abbreviations, use of XML schema, or special notes regarding how to read the document.

## Abbreviated Terms

CSW – Catalogue Services for the Web

GML – Geographical Markup Language

GMLCOV - GML Coverage

GMLJP2 - GML in JPEG 2000 for Geographic Imagery

HTML - Hypertext Markup Language

HTTP - Hypertext Transfer Protocol

IETF - Internet Engineering Task Force

IRI - Internationalized Resource Identifier

ISO - International Organization for Standardization

JSON - JavaScript Object Notation

KML - Keyhole Markup Language

MIME - Multipurpose Internet Mail Extensions

OGC - Open Geospatial Consortium

OWC - OGC Web Services Context

OWS - OGC Web Services

RFC - Request for Comments

UML - Unified Modeling Language

URI - Uniform Resource Identifier

URL - Uniform Resource Locator

WCS - Web Coverage Service

WFS - Web Feature Service

WMS - Web Map Service

WMTS - Web Map Tile Service

WPS - Web Processing Service

XHTML - Extensible Hypertext Markup Language

XML - Extensible Markup Language

## UML notation

Unified Modeling Language (UML) static structure diagrams appearing in this specification are used as described in sub-clause 5.2 of OGC Web Service Common [OGC 06-121r9]. Further, the following conventions hold:

* UML elements having a package name of “OWS Common” are those defined in the UML model of OWS Common [OGC 06-121r9].
* UML elements having a package name of GML are those defined in the UML model of GML [OGC 07-036].
* UML elements not qualified with a package name are those defined in this Standard.
* UML data type Any is used here as an equivalence to XML’s xsd:any.

## Data dictionary tables

The UML model data dictionary is specified herein in a series of tables. The contents of the columns in these tables are described in sub-clause 5.5 of [OGC 06-121r9]. The contents of these data dictionary tables are normative, including any table footnotes. For the reader’s convenience, table rows describing inherited components are shaded.

## Core and Extension Breakdown

The OWS Context Document standard follows the modular specification design pattern identified in OWS Context Conceptual Model [OGC 12-080]. It was decided that the requirements would be split both on the basis of the core and then on the specific service types (WMS, WFS etc) and also on the basis of a specific encoding of the document.

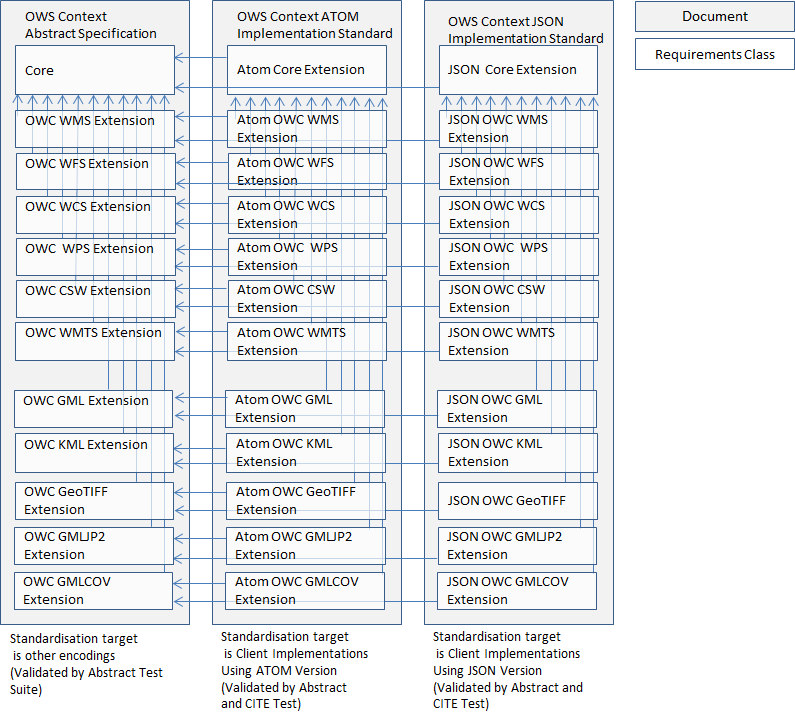


Figure 1 — OWS Context Requirement Class and Document Breakdown

The core context document is largely agnostic of any particular service type, covering the basic structure and the extension model. A requirement class is then defined for each service offering. This document covers all of the requirement classes for the Atom encoding (the centre grey box in Figure 1).

That standard recommends that any implementation of an application profile that defines extensions to the conceptual model should define both an XML (Atom) and a JSON Encoding of the extension.

# Atom Encoding Specification

## Overview

This clause specifies the links from the encoding to the underlying OWS Context data model. It defines a mapping for all classes and attributes of the OWS Conceptual model. This includes mandatory requirements for the encoding of a context document and the necessary semantics of how that encoding should be interpreted. The conceptual model on which this encoding is based is divided into various packages. These are shown in Figure 2 below. Note that these packages map directly to requirement classes.

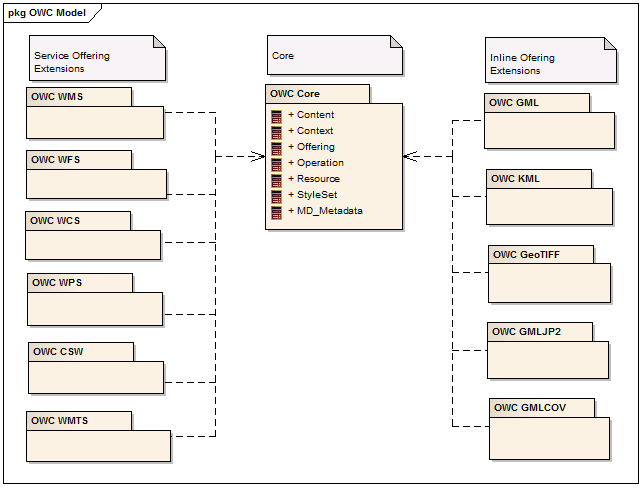


Figure 2 — OWS Context Standard Packages

The Atom Syndication Format is an XML language used for web feeds and was issued as a Proposed Standard in IETF [RFC-4287] in December 2005. An Atom Syndication Format XML file is made of a *atom:feed* element that may contain several *atom:entry* elements. This standard shall be regarded as an extension of the Atom Format and inherits all requirements stated using the “MUST” verb in the IETF [RFC-4287].

## OWS Core Context Atom Encoding

The *atom:feed* element SHALL be used in OWS Context to describe the context file.

**Requirement Class:** http://www.opengis.net/spec/owc-atom/1.0/req/core

**Scope:** All requirements in this subsection relate to the above requirement class)

**Dependencies:** [http://www.opengis.net/spec/owc/1.0/req/core](http://www.opengis.net/spec/owc/1.0/conf/core)

**Requirement Id:** http://www.opengis.net/spec/owc-atom/1.0/req/atomRules

**Requirement Tx:** AnAtom Encoding of an OWS Context Document shall comply with the rules specified in IETF [RFC-4287].

**Requirement Id:** http://www.opengis.net/spec/owc-atom/1.0/req/mimeType

**Requirement Tx:** OWS Context documents shall adopt the Atom MIME type of ‘application/atom+xml’

**Requirement Id:** http://www.opengis.net/spec/owc-atom/1.0/req/fileExtension

**Requirement Tx:** OWS Context documents shall use the file extension of ‘.xml’.

**Requirement Id:** http://www.opengis.net/spec/owc-atom/1.0/req/owcEncoding

**Requirement Tx:** An Atom Encoding of an OWS Context Document shall comply with the population rules given in the following sub-sections.

### Class OWC:Context

The mapping of the OWC:Context Class in the *atom:feed* element is shown in Table 1.

Table — OWC:Context mapping to *atom:feed*

| **Names: Conceptual Atom mapping** a | **Definition** | **Data type and value** | **Multiplicity and use** |
| --- | --- | --- | --- |
| specReference  atom:feed/atom:link[@rel=’profile’]/@href | Specification Reference (requirements class) identifying that this is an OWC Context document and its version. | Value SHALL be “http://www.opengis.net/spec/owc-atom/1.0/req/core” in this version | One (mandatory) |
| language  atom:feed/ @xml:lang | A language of feed's content | Character String type, not empty based on RFC-3066 codes | One (mandatory) |
| Id  atom:feed/ atom:id | An unambiguous reference to the identification of the feed (IRI) | URI | One b (mandatory) |
| Title  atom:feed/ atom:title | A title for the Context document | Character String type, not empty | One (mandatory) |
| Abstract  atom:feed/ atom:subtitle | Description of the Context document purpose or content | Character String type, not empty | Zero or one (optional) |
| updateDate  atom:feed/ atom:updated | A date of a creation or update of the Context document | RFC-3339 date | One (mandatory) |
| author  atom:feed/ atom:author/  atom:name | An entity primarily responsible for making the Context Document | Character String type, not empty | Zero or more (optional) c |
| publisher  atom:feed/ dc:publisher | Identifier for the publisher of the Context document | Character String type, not empty | Zero or one (optional) |
| creator  atom:feed/ atom:generator  atom:feed/ owc:display | The tool/application used to create the Context document and its properties | OWC:Creator (as defined in Table 7) | Zero or one (optional) |
| rights  atom:feed/ atom:rights | Information about rights held in and over the Context document | Character String type, not empty | Zero or one (optional) |
| areaOfInterest  atom:feed/  georss:where | Geographic Area of interest of the users of the Context document according to the *georss:where* element definition [GEORSS] | *georss:where* element | Zero or one (optional) |
| timeIntervalOfInterest  atom:feed/dc:date | A date or range of dates relevant to the resource | A string representing a date according to the ISO-8601 format | Zero or one (optional) |
| keyword  atom:feed/ atom:category/ @term | Category related to this context document. It MAY have a related code-list that is identified by the scheme attribute. | Character String type, not empty | Zero or more (optional) |
| resource  atom:feed/ atom:entry | The resources available on the Context document | *atom:entry* (as defined in Table 2) | Zero or more (optional) |
| contextMetadata  atom:feed/ atom:link [@rel="via"] | A reference to a resource from which the present resource is derived (e.g. source of the information) | *atom:link* element with the @*rel* equal to "via" | Zero or more (optional) d |
| extension | Any other element | Any (outside of the *atom* or *owc* namespace) | Zero or more (optional) |
| a This specification assigns no significance to the order of appearance of the child elements of atom:feed with the exception of atom:entry The order of *atom:entry* elements on the *atom:feed* MAY be used to identifiy the drawing order of the entries. In that case, the first *atom:entry* represents the top most layer (see section 6.2.1.13 for further details.  b URIs used as identifiers should be in canonical form, as described by section 6 of RFC-3986. Avoid the use of URI like http://server.com/path that should be written as http://server.com/path/  c atom:feed elements MUST contain one or more atom:author elements, unless all of the atom:feed element's child atom:entry elements contain at least one atom:author element  d It MUST NOT contain more than one atom:link element with a rel attribute value of "via" that has the same combination of type and hreflang attribute values | | | |

#### specReference

**Path**: atom:feed/atom:link[@rel=’profile’]/@href

The specification reference (requirements class) element SHALL be defined as an attribute of the *atom:feed* element

Example:

<feed xmlns="http://www.w3.org/2005/Atom" >

<title>Context Example :: Algal Pigment</title>

<link rel="profile"

href="http://www.opengis.net/spec/owc-atom/1.0/req/core"

title="This file is compliant with version 1.0 of OGC Context"/>

...

</feed>

#### language

**Path**: atom:feed/@xml:lang

A Context document SHALL have a *xml:lang* attribute at the top level *atom:feed* element. According to the Atom Syndication Format any element MAY have an *xml:lang* attribute, whose content indicates the natural language for the element and its descendants. Requirements regarding the content and interpretation of *xml:lang* are specified in [XML 1.0 W3C.REC], Section 2.12.

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xml:lang="en">

...

</feed>

#### id

**Path**: atom:feed/atom:id

The id element defines a mandatory reference to the identification of the Context document. Its content SHALL be an IRI, as defined by IETF [RFC-3987]. By defining it as an "IRI" the use of relative references is excluded and it SHALL NOT be assumed to convey dereferenceable information. The content of an *atom:id* element SHALL be created in a way that assures uniqueness and follow the recommendations of IETF [RFC-4287] section 4.2.6. The id should be in canonical form (avoiding the use of URI like *http://server.com/path* and using *http://server.com/path/* instead).

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xml:lang="en">

<id>https://portal.opengeospatial.org/twiki/bin/view/OWSContextswg/SpecAtomEncoding#1</id>

...

</feed>

#### title

**Path**: atom:feed/atom:title

This element contains the title of the Context document. This element is mandatory and it conveys a human-readable title. It uses the Atom text constructor and it MAY be in text, HTML or XHTML as expressed in RFC-4287 section 4.2.14.

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xml:lang="en">

<title>Context Example :: Algal Pigment</title>

...

</feed>

#### abstract

**Path**: atom:feed/atom:subtitle

This element is optional and it contains the description of the Context Document Purpose or Content. It uses the Atom text constructor and it MAY be in text, HTML or XHTML as expressed in IETF [RFC-4287] section 4.2.12.

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xml:lang="en">

...

<subtitle type="html">

Example of context document with Algal Pigment Maps &lt;br/&gt;

</subtitle>

...

</feed>

#### updateDate

**Path**: atom:feed/atom:updated

This element is mandatory and indicates the most recent instant in time when the feed was modified in a way the publisher considers **significant** and does not necessarily account for minor modifications. The content of this element SHALL conform to the "date-time" production in IETF [RFC-3339]. In addition, an uppercase "T" character SHALL be used to separate date and time, and an uppercase "Z" character SHALL be present in the absence of a numeric time zone offset.

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xml:lang="en">

...

<updated>2012-02-21T11:58:23Z</updated>

...

</feed>

#### author

**Path**: atom:feed/atom:author/atom:name

This element indicates the author of the Context document. It MAY contain a *atom:name* (conveys a human-readable name for the person), *atom:email* (email address for the person) and *atom:uri* (home page for the person) elements.

The *atom:feed* elements MUST contain one or more *atom:author* elements, unless all of the *atom:feed* element's child *atom:entry* elements contain at least one *atom:author* element.

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xml:lang="en">

...

<author>

<name>John Doe</name>

<email>JohnDoe@example.com</email>

<uri>http://example.com/~johndoe</uri>

</author>

...

</feed>

#### publisher

**Path**: atom:feed/dc:publisher

This element is optional and describes the entity responsible for making the Context document available. Examples of a Publisher include a person, an organization, or a service.

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:dc="http://purl.org/dc/elements/1.1/"

xml:lang="en">

...

<dc:publisher>ACME Project</dc:publisher>

...

</feed>

#### creator

**Path**: This property is of DataType Creator which exists conceptually but is mapped out within the atom encoding. For details of the pass see CreatorDisplay and CreatorApplication below.

The element is optional and expresses the entity or agent (e.g. software) responsible for making the Context document. See section **Error! Reference source not found.** for the mapping of this element.

#### rights

**Path**: atom:feed/atom:rights

This element is optional and contains information about rights held in and over the Context document. Please note that this element SHALL NOT be used to convey machine-readable licensing information.

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:dc="http://purl.org/dc/elements/1.1/"

xml:lang="en">

...

<rights>

Copyright (c) 2012. Some rights reserved. This feed

licensed under a Creative Commons Attribution 3.0 License.

</rights>

...

</feed>

#### areaOfInterest

**Path**: atom:feed/georss:where

This element is optional and expresses the geographic area of interest Context document according to the georss:where element definition [GEORSS].

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:dc="http://purl.org/dc/elements/1.1/"

xmlns:georss="http://www.georss.org/georss"

xmlns:gml="http://www.opengis.net/gml"

xml:lang="en">

...

<georss:where>

<gml:Polygon><gml:exterior><gml:LinearRing>

<gml:posList srsDimension="2">-90 -180 90 -180 90 180 -90 180 -90 -180</gml:posList>

</gml:LinearRing></gml:exterior></gml:Polygon>

</georss:where>

...

</feed>

#### timeIntervalOfInterest

**Path**: atom:feed/dc:date

This element is optional and expressed a date or range of dates relevant to the Context document inside a dc:date element. The content of this element SHALL conform to the "date-time" production of ISO-8601. An uppercase "T" character SHALL be used to separate date and time, and an uppercase "Z" character SHALL be present in the absence of a numeric time zone offset. To specify a range of dates the "/" character SHALL be used.

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:dc="http://purl.org/dc/elements/1.1/"

xmlns:gml="http://www.opengis.net/gml"

xml:lang="en">

...

<dc:date>2009-01-23T09:08:56.000Z/2009-01-23T09:14:08.000Z</dc:date>

...

</feed>

#### resource

**Path**: atom:entry

The resources of a Context document are mapped by *atom:entry* elements described below in section 6.2.2.

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xml:lang="en">

...

<entry>

...

</entry>

...

</feed>

Note: This specification identifies the order of Atom entries in relation to interpretation of the context document contents. Entries are ordered from highest importance to lowest in the file. In particular in relation to visualization geographically the first entry in the Atom document is the topmost layer in the display.

#### contextMetadata

**Path**: atom:feed/atom:link[@rel="via"]

This element is optional and references an external resource from which the Context document is derived (e.g. metadata document from which the metadata of the resource is derived). The Context document MAY have more than one *atom:link* but it SHALL NOT contain more than one *atom:link* element with a *rel* attribute value of "via" that has the same combination of *type*, *href* and *lang* attribute values

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xml:lang="en">

...

<link rel="via" type="application/xml" href="http://www.acme.com/collections/algal.xml" title="Algal XML metadata"/>

...

</feed>

#### keyword

**Path**: atom:feed/atom:category/@term

This element is optional and expresses a category related to this Context document. It MAY have a related code-list that is identified by the scheme attribute. The category element has one required attribute, *atom:term* (identifies the category), and two optional attributes, *atom:scheme* (identifies the categorization scheme via a URI) and *atom:label* (provides a human-readable label for display). This specification assigns no significance to the order of *atom:category* elements within the *atom:feed*.

Example:

<feed xmlns="http://www.w3.org/2005/Atom" >

<title>Context Example :: Algal Pigment</title>

<category scheme="http://www.acme.com/category"

term="oceansec"

label="Ocean Integrated Maritime Security"/>

...

</feed>

#### extension

This class may contain any other element (outside of the *atom* or *owc* namespace).

### Class OWC:Resource

The mapping of the OWC:Resource Class in the *atom:entry* element is shown in the table below.

Table 2 - OWC:Resource mapping to *atom:entry*

| **Names: Conceptual Atom mapping****a** | **Definition** | **Data type and values** | **Multiplicity and use** |
| --- | --- | --- | --- |
| Id  atom:entry/ atom:id | An unambiguous reference to the identification of the Context resource (IRI) | URI | One (mandatory) |
| Title  atom:entry/ atom:title | A title given to the Context resource | Character String type, not empty | One (mandatory) |
| abstract  atom:entry/ atom:content | An account of the content of the Context resource. Each resource shall have an abstract.  The purpose is to provide a generic description of the content in a format understandable by mass-market generic Atom readers. | Character String type, not empty.  The use of *atom:content* with @*type* equal to "html" is recommended. | One (mandatory) |
| updateDate  atom:entry/ atom:updated | A date of the last update of the Context resource | A string representing a date according to the RFC-3339 date format | One (mandatory) |
| author  atom:entry/ atom:author/  atom:name | An entity primarily responsible for making the content of the Context resource | Character String type, not empty | Zero or more (optional) b |
| publisher  atom:entry/ dc:publisher | An entity responsible for making the Context resource available | Character String type, not empty | Zero or one (optional) |
| rights  atom:entry/ atom:rights | Information about rights held in and over the Context resource | Character String type, not empty | Zero or one (optional) |
| geospatialExtent  atom:entry/ georss:where | The spatial extent or scope of the content of the Context resource. | *georss:where* element | Zero or one (optional) |
| temporalExtent  atom:entry/ dc:date | A date or range of dates relevant to the Context resource | A string representing a date according to the ISO-8601 format | Zero or more (optional) |
| contentDescription  atom:entry/  atom:link[@rel="alternate"] | A reference to a description of the Context resource in alternative format. | *atom:link* element.  @*rel* shall be "alternate" | Zero or more (optional) c |
| preview  atom:entry/ atom:link[@rel="icon"] | Reference to a quick-look or browse image representing the Context resource. | *atom:link* type.  @*rel* shall be "icon"  The attributes length and type SHOULD be provided | Zero or more (optional). |
| contentByRef  atom:entry/ atom:link[@rel="enclosure"] | Reference to the location of the data resource described in the Context resource. | *atom:link* type.  @*rel* shall be "enclosure"d | Zero or more (optional) |
| offering  atom:entry/ owc:offering | Service or inline content offering for the resource targeted at OGC compliant clients | owc:OfferingType, see Table 3 | Zero or more (optional) |
| active  atom:entry/ atom:category[@scheme='http://www.opengis.net/spec/owc/active']/@term | Flag value indicating to the client if the Context resource should be displayed by default. | Boolean  Possible values are 'true' or 'false'. Default value is ‘true’ | Zero or one (optional) |
| resourceMetadata  atom:entry/ atom:link[@rel="via"] | A reference to a resource from which the Context resource is derived (e.g. source of the information). | atom:link element with the  @rel equal to "via". | Zero or more (optional) e |
| keyword  atom:entry/ atom:category/@term | Category related to this Context resource. | Character String type, not empty.  It MAY have a related code-list that is identified by the scheme attribute | Zero or more (optional) |
| minScale‌Denominator  atom:entry/ owc:minScaleDenominator | Minimum scale for the display of the Context resource | Double | Zero or one (optional) |
| maxScaleDenominator  atom:entry/ owc:maxScaleDenominator | Maximum scale for the display of the Context resource | Double | Zero or one (optional) |
| folder  atom:entry/ atom:category[@scheme='http://www.opengis.net/spec/owc/folder’]/@term | Definition of the folder in which the resource is placed | Character String type, not empty.  This *atom:category* element MAY have a *title* attribute to be used as caption | Zero or one (optional) |
| extension | Any other element | Any (outside of the atom or owc namespace) f | Zero or more (optional) |
| a This specification assigns no significance to the order of appearance of the child elements of atom:entry.  b atom:entry elements MUST contain one or more atom:author elements, unless the parent atom:feed element contains at least one atom:author element.  c An atom:entry MUST NOT contain more than one atom:link element with a rel attribute value of "alternate" that has the same combination of type and hreflang attribute values  d Because it describes a resource potentially large in size and might require special handling the length and type attribute SHOULD be provided.  e An atom:entry MUST NOT contain more than one atom:link element with a rel attribute value of "via" that has the same combination of type and hreflang attribute values  f svg:svg and kml:kml are examples of common elements that might be used. | | | |

#### ****id****

**Path**: atom:feed/atom:entry/atom:id

This element defines a mandatory reference to the identification of the Context resource. Its content SHALL be an IRI, as defined by RFC-3987. By defining it as an "IRI" the use of relative references is excluded and it SHALL NOT be assumed to convey dereferencable information. The content of an *atom:id* element SHALL be created in a way that assures uniqueness and follow the recommendations of RFC-4287 section 4.2.6. The id should be in canonical form and avoiding the use of URI like *http://server.com/path* and using *http://server.com/path/* instead.

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xml:lang="en">

...

<entry>

<id>http://www.acme.eu/geoserver/wms/#world\_countries</id>

...

</entry>

...

</feed>

#### title

**Path**: atom:feed/atom:entry/atom:title

This element is mandatory and it conveys a human-readable title of the Context resource. It uses the Atom text constructor and the *type* attribute MAY be "text", "html" or "xhmtl" as expressed in RFC-4287 section 4.2.14.

Example:

<feed xmlns="http://www.w3.org/2005/Atom" xml:lang="en">

...

<entry>

<title>Base World Map</title>

...

</entry>

...

</feed>

#### abstract

**Path**: atom:feed/atom:entry/atom:content

This element is mandatory and it contains the description of the Context resource purpose or content. It uses the Atom text constructor and the *type* attribute MAY be "text", "html" or "xhmtl" as expressed in RFC-4287 section 4.2.12. If the original resource does not contain any abstract, the generator SHALL define a generic description of the content in a format understandable by mass-market generic Atom readers. Type equal to "html" is recommended.

Example:

<feed xmlns="http://www.w3.org/2005/Atom" xml:lang="en">

...

<entry>

...

<content type="html">

ENVISAT MERIS Level 1 Reduced Resolution &lt;br/&gt;

&lt;b&gt; Start :&lt;/b&gt; 2011-01-04T08:41:51.000Z

&lt;b&gt; End :&lt;/b&gt; 2011-01-04T09:25:21.000Z

&lt;br/&gt;&lt;b&gt;Acquisition Station :&lt;/b&gt; PDHS-K

&lt;b&gt;Processing Center :&lt;/b&gt; PDHS-K

&lt;br/&gt;&lt;b&gt; Orbit :&lt;/b&gt; 46257

</content>

</entry>

...

</feed>

#### updateDate

**Path**: atom:feed/atom:entry/atom:updated

This element is optional and contains the date of a creation or update of the Context resource (ISO-8601 date). This value indicates the most recent instant in time when the Context resource was modified in a way the publisher considers **significant** and not necessarily covering all any minor modifications. The content of this element SHALL conform to the "date-time" production in RFC-3339. In addition, an uppercase "T" character SHALL be used to separate date and time, and an uppercase "Z" character SHALL be present in the absence of a numeric time zone offset.

Example:

<feed xmlns="http://www.w3.org/2005/Atom" xml:lang="en">

...

<entry>

...

<updated>2012-05-10T14:35:00.400Z</updated>

...

</entry>

...

</feed>

#### author

**Path**: atom:feed/atom:entry/atom:author/atom:name

This element indicates the author of the Context resource. It SHALL contain at least one the child elements: *atom:name* (conveys a human-readable name for the person), *atom:email* (email address for the person) or URI (home page for the person) elements. The *atom:entry* elements SHALL contain one or more *atom:author* elements, unless the parent *atom:feed* element contains at least one *atom:author*.

Example:

<feed xmlns="http://www.w3.org/2005/Atom" xml:lang="en">

...

<entry>

<author>

<name>John Doe</name>

<email>JohnDoe@example.com</email>

<uri>http://example.com/~johndoe</uri>

</author>

...

</entry>

...

</feed>

#### publisher

**Path**: atom:feed/atom:entry/dc:publisher

This element defines an entity responsible for making the Context resource available. Examples of a Publisher include a person, an organization, or a service.

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:dc="http://purl.org/dc/elements/1.1/"

xml:lang="en">

...

<entry>

...

<dc:publisher>ACME Project</dc:publisher>

...

</entry>

...

</feed>

#### rights

**Path**: atom:feed/atom:entry/atom:rights

This element is optional and contains information about rights held in and over the Context resource. Please note that this element SHALL NOT be used to convey machine-readable licensing information

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:dc="http://purl.org/dc/elements/1.1/" xml:lang="en">

...

<entry>

...

<rights>

Copyright (c) 2012. Some rights reserved. This feed

licensed under a Creative Commons Attribution 3.0 License.

</rights>

...

</entry>

...

</feed>

#### geospatialExtent

**Path**: atom:feed/atom:entry/georss:where

This element is optional and expresses the geographic area of interest of the Context resource according to the *georss:where* element definition [GEORSS].

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:dc="http://purl.org/dc/elements/1.1/"

xmlns:georss="http://www.georss.org/georss"

xmlns:gml="http://www.opengis.net/gml"

xml:lang="en">

...

<entry>

...

<georss:where>

<gml:Polygon><gml:exterior><gml:LinearRing>

<gml:posList>38.4921 44.2699 38.6058 43.4414 37.5318 43.2089 37.4215 44.0128 38.4921 44.2699</gml:posList>

</gml:LinearRing></gml:exterior></gml:Polygon>

</georss:where>

...

</entry>

...

</feed>

#### temporalExtent

**Path**: atom:feed/atom:entry/dc:date

This element is optional and expresses a date or range of dates relevant to the Context resource inside a *dc:date* element. The content of this element SHALL conform to the "date-time" production of ISO-8601. An uppercase "T" character SHALL be used to separate date and time, and an uppercase "Z" character SHALL be present in the absence of a numeric time zone offset. To specify a range of dates the "/" character SHALL be used.

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:dc="http://purl.org/dc/elements/1.1/"

xmlns:gml="http://www.opengis.net/gml" xml:lang="en">

...

<entry>

...

<dc:date>2009-01-23T09:08:56.000Z/2009-01-23T09:14:08.000Z</dc:date>

...

</entry>

...

</feed>

#### preview

The **preview** property of the Context resource can be expressed by using the following elements:

**Path**: atom:feed/atom:entry/atom:link[@rel="icon"]

Reference to a quick-look or browse image representing the Context resource. The attributes *length* and *type* SHOULD be provided

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xml:lang="en">

...

<entry>

...

<link rel="icon" type="image/png"

href="http://www.acme.com/collections/products/algal20090123090856.png"

title="Quicklook for the entry 2009-01-23 09:08:56" length="123432"/>

...

</entry>

...

</feed>

**Path**: atom:entry/atom:link[@rel="alternate"]

This element contains a reference to a description of the Context resource in alternative format. A Context Document SHALL NOT contain more than one *atom:link* element with a *rel* attribute value of "alternate" that has the same combination of *type* and *hreflang* attribute values.

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xml:lang="en">

...

<entry>

...

<link rel="alternate" type="text/html" href="http://www.acme.com/collections/products/algal20090123090856.html"

title="Information for the algal product of 2009-01-23 09:08:56"/>

...

</entry>

...

</feed>

#### contentByRef

**Path**: atom:feed/atom:entry/atom:link[@rel="enclosure"]

This element contains a reference to the location of the data resource described in the Context resource. Because it describes a resource potentially large in size and might require special handling the *length* and *type* attributes SHOULD be provided.

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xml:lang="en">

...

<entry>

...

<link rel="enclosure" type="application/x-hdf5"

href="http://www.acme.com/collections/products/algal20090123090856.hdf"

title="HDF file for the entry 2009-01-23 09:08:56" length="453123432"/>

...

</entry>

...

</feed>

#### offering

**Path**: atom:feed/atom:entry/owc:offering

The entry can contain a number of offerings defined by the class OWC:Offering (defined in section 6.2.3 below). This specification assigns no significance to the order of appearance of the *owc:offering* elements in an *atom:entry*.

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:owc="http://www.opengis.net/owc/1.0"

xml:lang="en">

...

<entry>

<owc:offering code="http://www.opengis.net/spec/owc-atom/1.0/req/wms">

...

</owc:offering>

<owc:offering code="http://www.opengis.net/spec/owc-atom/1.0/req/gml">

...

</owc:offering>

</entry>

...

</feed>

#### active

**Path**: atom:feed/atom:entry/atom:category[@scheme='http://www.opengis.net/spec/owc/active']/@term

Flag value indicating to the client if the Context resource should be displayed by default. Possible values are 'true' or 'false' and the values are case-sensitive.

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:dc="http://purl.org/dc/elements/1.1/"

xmlns:gml="http://www.opengis.net/gml" xml:lang="en">

...

<entry>

...

<category scheme="http://www.opengis.net/spec/owc/active" term="true"/>

...

</entry>

...

</feed>

#### resourceMetadata

**Path**: atom:feed/atom:entry/atom:link[@rel="via"]/@href

This element contains a reference to a resource from which the present resource is derived. It SHALL NOT contain more than one *atom:link* element with a *rel* attribute value of "via" that has the same combination of *type* and *hreflang* attribute values.

Example:

<feed xmlns="http://www.w3.org/2005/Atom" xml:lang="en">

...

<entry>

...

<link rel="via" type="application/xml" href="http://www.acme.com/collections/products/algal20090123090856.xml"

title="XML metadata file for the entry 2009-01-23 09:08:56" length="234"/>

...

</entry>

...

</feed>

#### keyword

**Path**: atom:feed/atom:entry/atom:category/@term

This element is optional and expresses a category related to the entry. It MAY have a related code-list that is identified by the scheme attribute. The category element has one required attribute, *term* (identifies the category), and two optional attributes, *scheme* (identifies the categorization scheme via a URI) and *label* (provides a human-readable label for display). This specification assigns no significance to the order of *atom:category* elements within the *atom:entry*.

Example:

<feed xmlns="http://www.w3.org/2005/Atom">

...

<entry>

...

<category scheme="http://www.acme.com/category"

term="high\_concentration"

label="High Concentration was detected on this entry"/>

...

<category scheme="http://www.earthobservations.org/category"

term="GEOSSDataCore"

label="GEOSS Data Collection of Open Resources for Everyone"/>

...

</entry>

...

</feed>

#### minScaleDenominator

**Path**: atom:feed/atom:entry/owc:minScaleDenominator

This element defines the minimum scale for the display of the resource. The scale denominator is defined with respect to a “standardized rendering pixel size” of 0.28 mm × 0.28 mm (millimeters). The definition is the same used in WMS 1.3.0 [OGC 06-042] and in Symbology Encoding Implementation Specification 1.1.0 [05-077r4]. Frequently, the true pixel size is unknown and 0.28 mm is a common actual size for current displays.

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:owc="http://www.opengis.net/owc/1.0" xml:lang="en">

...

<entry>

...

<owc:minScaleSenominator>100</owc:minScaleSenominator>

...

</entry>

...

</feed>

#### maxScaleDenominator

**Path**: atom:feed/atom:entry/owc:maxScaleDenominator

This element defines the maximum scale for the display of the resource. The scale denominator is defined with respect to a “standardized rendering pixel size” of 0.28 mm × 0.28 mm (millimeters). The definition is the same used in WMS 1.3.0 [OGC 06-042] and in Symbology Encoding Implementation Specification 1.1.0 [05-077r4]. Frequently, the true pixel size is unknown and 0.28 mm is a common actual size for current displays.

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:owc="http://www.opengis.net/owc/1.0" xml:lang="en">

...

<entry>

...

<owc:maxScaleSenominator>100</owc:maxScaleSenominator>

...

</entry>

...

</feed>

#### folder

**Path**:feed/atom:entry/atom:category[@scheme='http://www.opengis.net/spec/owc/folder]/@term

The *term* attribute represents a not empty character string that defines the folder name in which the resource is placed. If this *atom:category* element has a *title* attribute it MAY be used to represent a human-readable caption.

Example:

<feed xmlns="http://www.w3.org/2005/Atom" xml:lang="en">

...

<entry>

...

<category scheme="http://www.opengis.net/spec/owc/folder" term="FIELDINFO" label="Field Information"/>

...

</entry>

...

</feed>

#### extension

This class may contain any other element (outside of the *atom* or *owc* namespace).

### DataType OWC:Offering

The mapping between the OWC:Offering Class and Atom is shown in the table below.

Table 3 - Definitions of owc:Offering elements

| **Names: Conceptual Atom mapping** | **Definition** | **Data type and values** | **Multiplicity and use** |
| --- | --- | --- | --- |
| code  @code | Code identifying the type of offering | URI  A requirement class identifier (URI) for the extension defining the operation. See sections 6.3 to 6.13 | One (mandatory) |
| operation  owc:operation | Operations used to invoke the service. | owc:OperationType, see Table 4 | Zero or more (optional) |
| content  owc:content | The offering content (inline or byRef) | owc:ContentType, see Table 5 | Zero or more (optional) |
| styleSet  owc:styleSet | Style sets to style the content. | owc:StyleSetType, see Table 6 | Zero or more (optional) |
| extension | Any other element | Any (outside of the atom or owc namespace) | Zero or more (optional) |

#### code

**Path**: atom:feed/atom:entry/owc:offering/@type

The offering code is defined as the requirement class identifier (URI) for the extension defining the operation. It can be an owc extension or one defined in a profile.

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:owc="http://www.opengis.net/owc/1.0"

xml:lang="en">

...

<entry>

<owc:offering

code="http://www.opengis.net/spec/owc-atom/1.0/req/wms">

...

</owc:offering>

<owc:offering code="http://www.opengis.net/spec/owc-atom/1.0/req/ gml">

...

</owc:offering>

</entry>

...

</feed>

#### operation

**Path**: atom:feed/atom:entry/owc:offering/owc:operation

Defines an operation within an offering. Valid operations for an offering are defined in the relevant offering extension (Section [8.2.4 Class OWC:Operation](https://portal.opengeospatial.org/wiki/OWSContextswg/SpecAtomEncodingAlt#ClassOperation)).

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:owc="http://www.opengis.net/owc/1.0"

xml:lang="en">

...

<entry>

...

<owc:offering

code="http://www.opengis.net/spec/owc-atom/1.0/req/wms">

<owc:operation code="GetCapabilities" href="http://www.someserver.com/wrs.cgi?REQUEST=GetCapabilities&amp;SERVICE=WMS&amp;VERSION=1.1.1"/>

</owc:offering>

</entry>

...

</feed>

#### content

**Path**: atom:feed/atom:entry/owc:offering/owc:content

This is the class owc:Content (see section 6.2.5)

#### styleSet

**Path**: atom:feed/atom:entry/owc:offering/owc:styleSet

See section 6.2.6 class for further details.

#### extension

This class may contain any other element (outside of the *atom* or *owc* namespace).

### DataType OWC:Operation

This class defines the operation either to get the information or to get the capabilities. Note that service specific extension requirements may mandate more than one owc:operation.

Table 4 - Definitions of owc:Operation elements

| **Names: Conceptual Atom mapping** | **Definition** | **Data type and values** | **Multiplicity and use** |
| --- | --- | --- | --- |
| code  //owc:operation/ @code | Code identifying the type of Operation | CharacterString a | One (mandatory) |
| method  //owc:operation/ @method | Code identifying the verb type of Operation. | Character String type, not empty. Example values are GET and POST. | One (mandatory) |
| type  //owc:operation/ @type | MIME type of the expected results | Character String type, not empty | Zero or one (optional) |
| requestURL  //owc:operation/ @href | Service Request URL b | URL | One (mandatory) |
| request  //owc:operation/ owc:request | Optional request body content c | owc:ContentType, see Table 5 | Zero or one (optional) |
| result  //owc:operation/ owc:result | Optional Result Payload of the operationc | owc:ContentType, see Table 5 | Zero or one (optional) |
| extension | Any other element | Any (outside of the atom or owc namespace) | Zero or more (optional) |
| a Typically the OGC Service request type, e.g. “GetCapabilities” or “GetMap”.  b Full request URL for an HTTP GET, and request URL for HTTP POST.  c Not necessarily XML as the content is defined by MIME-type. If the content is text/xml or application/\*+xml it SHALL be present as a XML fragment (without the *<?xml...* header) and the encoding SHALL be the same as the feed. | | | |

#### code

**Path**: atom:feed/atom:entry/owc:operation/@code

This identifies the type of operation. The valid operation types are defined within each specific extension within the OWS Context conceptual model [OGC 12-080].

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:owc="http://www.opengis.net/owc/1.0"

xml:lang="en">

...

<entry>

...

<owc:offering

code="http://www.opengis.net/spec/owc-atom/1.0/req/wms">

<owc:operation code="GetCapabilities" href="http://www.someserver.com/wrs.cgi?REQUEST=GetCapabilities&amp;SERVICE=WMS&amp;VERSION=1.1.1"/>

</owc:offering>

</entry>

...

</feed>

#### method

**Path**: atom:feed/atom:entry/owc:operation/@method

This identifies the method (verb) of the operation. Default value is GET.

Example

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:owc="http://www.opengis.net/owc/1.0"

xml:lang="en">

...

<entry>

...

<owc:offering

code="http://www.opengis.net/spec/owc-atom/1.0/req/wms">

<owc:operation method="GET" code="GetCapabilities" href="http://www.someserver.com/wrs.cgi?REQUEST=GetCapabilities&amp;SERVICE=WMS&amp;VERSION=1.1.1"/>

</owc:offering>

</entry>

...

</feed>

#### type

**Path**: atom:feed/atom:entry/owc:operation/@type

It defines the MIME-type of the content class.

#### requestURL

**Path**: atom:feed/atom:entry/owc:offering/owc:operation/@href

For HTTP GET the serviceURL item is used to capture the entire request. For POST (and SOAP) requests, the serviceURL is used to capture the address, and in addition a payload is required. See payload below for an example of the POST request.

Example (WMS Service, HTTP GET request for GetCapabilities with no results stored):

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:owc="http://www.opengis.net/owc/1.0"

xml:lang="en">

...

<entry>

...

<owc:offering

code="http://www.opengis.net/spec/owc-atom/1.0/req/wms">

<owc:operation method="GET" code="GetCapabilities" href="http://www.someserver.com/wrs.cgi?REQUEST=GetCapabilities&amp;SERVICE=WMS&amp;VERSION=1.1.1"/>

</owc:offering>

</entry>

...

</feed>

#### request

**Path**: atom:feed/atom:entry/owc:offering/owc:operation/owc:request

For POST and SOAP Requests, a payload is required.

**Note**: not necessarily XML as the content is defined by MIME-type. If the content is text/xml or application/xml+\* it SHALL be present as a XML fragment (without the *<?xml...* header) and the encoding SHALL be the same as the feed.

Example (CSW Service, HTTP POST request for GetRecords with no results stored):

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:owc="http://www.opengis.net/owc/1.0"

xml:lang="en">

...

<entry>

...

<owc:offering code="http://www.opengis.net/spec/owc-atom/1.0/req/csw">

<owc:operation method="GET" code="GetCapabilities" href="http://www.someserver.com/wrs.cgi?service=CSW&amp;request=GetCapabilities"/>

<owc:operation method="POST" code="GetRecords" href="http://www.someserver.com/wrs.cgi?">

<owc:request type="application/xml">

<GetRecords

service="CSW" version="2.0.2" maxRecords="5" startPosition="1"

resultType="results" outputFormat="application/xml"

outputSchema="http://www.opengis.net/cat/csw/2.0.2"

xmlns="http://www.opengis.net/cat/csw/2.0.2"

xmlns:csw="http://www.opengis.net/cat/csw/2.0.2"

xmlns:ogc="http://www.opengis.net/ogc"

xmlns:ows="http://www.opengis.net/ows"

xmlns:dc="http://purl.org/dc/elements/1.1/"

xmlns:dct="http://purl.org/dc/terms/"

xmlns:gml="http://www.opengis.net/gml"

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xsi:schemaLocation="http://www.opengis.net/cat/csw/2.0.2

http://schemas.opengis.net/csw/2.0.2/CSW-discovery.xsd">

<Query typeNames="csw:Record">

<ElementSetName typeNames="csw:Record">Full</ElementSetName>

<Constraint version="1.1.0">

<ogc:Filter>

<ogc:And>

<ogc:PropertyIsLike escapeChar="\" singleChar="?" wildCard="\*">

<bssc:PropertyName>dc:title</ogc:PropertyName>

<ogc:Literal>\*Elevation\*</ogc:Literal>

</ogc:PropertyIsLike>

<ogc:Intersects>

<ogc:PropertyName>

ows:BoundingBox

</ogc:PropertyName>

<gml:Envelope>

<gml:lowerCorner>14.05 46.46</gml:lowerCorner>

<gml:upperCorner>17.24 48.42</gml:upperCorner>

</gml:Envelope>

</ogc:Intersects>

</ogc:And>

</ogc:Filter>

</Constraint>

</Query>

</GetRecords>

</owc:request>

</owc:operation>

</owc:offering>

</entry>

...

</feed>

#### result

**Path**: atom:feed/atom:entry/owc:offering/owc:operation/owc:result

Result is an optional parameter that captures the result of an operation, in the form it was returned from the server. This can be defined inline or as a reference. When the result content is inline XML it should be as a XML fragment (without the *<?xml...* header) and the encoding SHALL be the same as the feed.

Example (CSW Service), GetRecords Results.

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:owc="http://www.opengis.net/owc/1.0"

xml:lang="en ">

...

<entry>

...

<owc:offering

code="http://www.opengis.net/spec/owc-atom/1.0/req/csw">

<owc:operation method="GET" code="GetCapabilities" href="http://www.someserver.com/wrs.cgi?service=CSW&amp;request=GetCapabilities"/>

<owc:operation method="POST" code="GetRecords"

href="http://www.someserver.com/wrs.cgi?">

<owc:request type="application/xml">

<GetRecords

service="CSW"

version="2.0.2"

maxRecords="5"

startPosition="1"

resultType="results"

outputFormat="application/xml"

outputSchema="http://www.opengis.net/cat/csw/2.0.2"

xmlns="http://www.opengis.net/cat/csw/2.0.2"

xmlns:csw="http://www.opengis.net/cat/csw/2.0.2"

xmlns:ogc="http://www.opengis.net/ogc"

xmlns:ows="http://www.opengis.net/ows"

xmlns:dc="http://purl.org/dc/elements/1.1/"

xmlns:dct="http://purl.org/dc/terms/"

xmlns:gml="http://www.opengis.net/gml"

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xsi:schemaLocation="http://www.opengis.net/cat/csw/2.0.2

http://schemas.opengis.net/csw/2.0.2/CSW-discovery.xsd">

<Query typeNames="csw:Record">

<ElementSetName typeNames="csw:Record">full</ElementSetName>

<Constraint version="1.1.0">

<ogc:Filter>

<ogc:And>

<ogc:PropertyIsLike escapeChar="\" singleChar="?"

wildCard="\*">

<ogc:PropertyName>dc:title</ogc:PropertyName>

<ogc:Literal>\*Elevation\*</ogc:Literal>

</ogc:PropertyIsLike>

<ogc:Intersects>

<ogc:PropertyName>ows:BoundingBox</ogc:PropertyName>

<gml:Envelope>

<gml:lowerCorner>14.05 46.46</gml:lowerCorner>

<gml:upperCorner>17.24 48.42</gml:upperCorner>

</gml:Envelope>

</ogc:Intersects>

</ogc:And>

</ogc:Filter>

</Constraint>

</Query>

</GetRecords>

</owc:request>

<owc:result type="application/xml">

<csw:Record

xmlns:csw="http://www.opengis.net/cat/csw/2.0.2"

xmlns:dc="http://purl.org/dc/elements/1.1/"

xmlns:dct="http://purl.org/dc/terms/"

xmlns:ows="http://www.opengis.net/ows"

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xsi:schemaLocation="http://www.opengis.net/cat/csw/2.0.2

http://schemas.opengis.net/csw/2.0.2/record.xsd">

<dc:creator>U.S. Geological Survey</dc:creator>

<dc:contributor>State of Texas</dc:contributor>

<dc:publisher>U.S. Geological Survey</dc:publisher>

<dc:subject>Elevation, Hypsography, and Contours</dc:subject>

<dc:subject>elevation</dc:subject>

<dct:abstract>Elevation data collected for the National Elevation Dataset (NED) based on 30m horizontal and 15m vertical accuracy.</dct:abstract>

<dc:identifier>ac522ef2-89a6-11db-91b1-7eea55d89593</dc:identifier>

<dc:relation>OfferedBy</dc:relation>

<dc:source>dd1b2ce7-0722-4642-8cd4-6f885f132777</dc:source>

<dc:rights>Copyright © 2004, State of Texas</dc:rights>

<dc:type>Service</dc:type>

<dc:title>National Elevation Mapping Service for Texas</dc:title>

<dct:modified>2004-03-01</dct:modified>

<dc:language>en</dc:language>

<ows:BoundingBox>

<ows:LowerCorner>-108.44 28.229</ows:LowerCorner>

<ows:UpperCorner>-96.223 34.353</ows:UpperCorner>

</ows:BoundingBox>

</csw:Record>

</owc:result>

</owc:operation>

</owc:offering>

</entry>

...

</feed>

#### extension

This class may contain any other element (outside of the *atom* or *owc* namespace).

### DataType OWC:Content

This class defines a generic container for any content. It is the class defining *owc:offering/owc:content*, *owc:offering/owc:operation/owc:request* and *owc:offering/owc:operation/owc:result* elements

Table 5 - Definitions of owc:Content elements

| **Names: Conceptual Atom mapping** | **Definition** | **Data type and values** | **Multiplicity and use** |
| --- | --- | --- | --- |
| type  @type | MIME type of the Content | CharacterString not empty | One (mandatory) |
| URL  @href | URL of the Content | URL | Zero or one (optional) a |
| content  . | In-line content for the Content element | Any | Zero or one (optional) a |
| a If the “href” attribute is present, the element content SHALL be empty. If “href” is not provided, content SHALL be provided | | | |

#### type

**Path**: //owc:content/@type

It defines the MIME-type of the content class.

#### URL

**Path**: //owc:content/@href

It provides the path to the content. It can be a full URL or a relative reference. For example you can use an http:, ftp:, file: etc, or simply a file name if the OWS context document and the content share the same location.

#### content

This element contains the inline content or a local file reference (encoded in any form in the document and definable via MIME Type).

Example:

<owc:content type=“application/gml+xml">

<my\_srf:RoadCollection xsi:schemaLocation="http://www.opengis.net/gml/3.2 http://schemas.opengis.net/gml/3.2.1/gml.xsd http://www.opengis.net/owc/1.0/examples/example1 SpringRoadField?.xsd"

xmlns:gml="http://www.opengis.net/gml/3.2"

xmlns:my\_srf="http://www.opengis.net/owc/1.0/examples/example1"

gml:id="ID\_ROADS1">

<my\_srf:road>

<my\_srf:Road gml:id="ID\_ROAD1">

<my\_srf:position

<gml:LineString gml:id="ID\_LINEROAD1">

<gml:pos>300 200</gml:pos>

<gml:pos>350 222</gml:pos>

</gml:LineString

</my\_srf:position>

<my\_srf:width>4.1</my\_srf:width>

<my\_srf:name>M30</my\_srf:name>

</my\_srf:Road

</my\_srf:RoadCollection>

</owc:content>

#### extension

This class may contain any other element (outside of the *atom* or *owc* namespace).

### DataType OWC:StyleSet

This class defines a portrayal style for a resource inline or service derived content. It is specified at an offering level.

Table 6 - Definitions of OWC:styleSet elements

| **Names: Conceptual Atom mapping** | **Definition** | **Data type and values** | **Multiplicity and use** |
| --- | --- | --- | --- |
| name  owc:name | Unique name of the styleSet within a given offering | CharacterString not empty | One (mandatory) |
| title  owc:title | A Human Readable title of the styleSet within a given offering | CharacterString not empty | One (mandatory) |
| abstract  owc:abstract | Description of the styleSet | CharacterString not empty | Zero or one (optional) |
| default  @default | Whether this styleSet is the one to be defined by default. | Boolean (default value is false) | Zero or one (optional) |
| legendURL  owc:legendURL | URL of a legend image for the styleSet | URL | Zero or one (optional) |
| content  owc:content | The inline or a external reference to the styleSet definition | owc:ContentType, see Table 5 | Zero or one (optional) |
| extension | Any other element | Any (outside of the atom or owc namespace) | Zero or more (optional) |

The intention of the StyleSet is that the client could visualise the resource using say the GetMap call (which would have defined styling) but could also offer the selection of alternative styles for the layer to the user. These would be derived from the style set offering.

#### name

**Path**: atom:feed/atom:entry/owc:offering/owc:styleSet/owc:name

The name of the style is used to present to the service in order to invoke a standard style. It is not required on referenced styles.

Example:

<owc:styleSet default="true">

<owc:name>default</owc:name>

<owc:title>The SST default style</owc:title>

</owc:styleSet>

#### title

**Path**: atom:feed/atom:entry/owc:offering/owc:styleSet/owc:title

This element is intended to provide a human readable name for an element (used in any label or legend for the style).

Example:

<owc:styleSet>

<owc:name>grey</owc:name>

<owc:title>Grey map of temperatures</owc:title>

</owc:styleSet>

#### abstract

**Path**: atom:feed/atom:entry/owc:offering/owc:styleSet/owc:abstract

The abstract provides a textual description of the style.

Example:

<owc:styleSet>

<owc:name>night</owc:name>

<owc:title>Night Colours</owc:title>

<owc:abstract>Colours used for display in dimmed conditions</owc:abstract>

</owc:styleSet>

#### default

**Path**: atom:feed/atom:entry/owc:offering/owc:styleSet/@default

Specifies the style to be applied when the service is invoked (other styles are there as alternatives).

Note: The default does not need to be defined and is not required when a service request in an offering already has a way of specifying the default. For example where a WMS Call can include the style request, this element is not required. However when specifying the style for a WFS or a GML File (where there is no place to specify styling) the default can be used.

Example:

<owc:styleSet default="true">

<owc:name>default</owc:name>

<owc:title>The SST default style</owc:title>

</owc:styleSet>

#### legendURL

**Path**: atom:feed/atom:entry/owc:offering/owc:styleSet/owc:legendURL

The legend URL specifies a link to a legend image.

Example:

<owc:styleSet>

<owc:name>day/owc:name>

<owc:title>Day Colours</owc:title>

<owc:abstract>Colours used for display in daylight conditions</owc:abstract>

<owc:legendURL href="http://www.acme.int/dayColours.jpg"/>

</owc:styleSet>

#### Content

**Path**: atom:feed/atom:entry/owc:offering/owc:styleSet/owc:content

The content element allows an external or an inline style definition to be identified. It is a owc:Content class and as such if it has a value on the attribute *href* it SHALL NOT have inline content. This could potentially be an OGC Styled Layer Descriptor document but also potentially a Cascading Style Sheet. The valid types of document for a given service/inline content are specified in the relevant offering extension.

Example:

<owc:styleSet>

<owc:name>Simple Point/owc:name>

<owc:title>SLD Cook Book: Simple Point With Stroke</owc:title>

<owc:content href="http://docs.geoserver.org/stable/en/user/\_downloads/point\_simplepoint.sld" type="application/sld+xml"/>

</owc:styleSet>

or an inline content as

<owc:styleSet>

<owc:name>Simple Point/owc:name>

<owc:title>SLD Cook Book: Simple Point With Stroke</owc:title>

<owc:content type="application/sld+xml">

<StyledLayerDescriptor version="1.0.0"

xsi:schemaLocation="http://www.opengis.net/sld StyledLayerDescriptor.xsd"

xmlns="http://www.opengis.net/sld"

xmlns:ogc="http://www.opengis.net/ogc"

xmlns:xlink="http://www.w3.org/1999/xlink"

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<NamedLayer>

<Name>Simple Point</Name>

<UserStyle>

<Title>SLD Cook Book: Simple Point With Stroke</Title>

<FeatureTypeStyle>

<Rule>

<PointSymbolizer>

<Graphic>

<Mark>

<WellKnownName>circle</WellKnownName>

<Fill>

<CssParameter name="fill">#FF0000</CssParameter>

</Fill>

</Mark>

<Size>6</Size>

</Graphic>

</PointSymbolizer>

</Rule>

</FeatureTypeStyle>

</UserStyle>

</NamedLayer>

</StyledLayerDescriptor>

</owc:content>

</owc:styleSet>

#### extension

This class may contain any other element (outside of the atom or owc namespace).

### DataType OWC:Creator

This datatype class provides place to encode information related to the creator of the con text document. It includes the creator application and any relevant properties or settings for the application.

Table 7 - Definitions of owc:Creator elements

| **Names: Conceptual Atom mapping** | **Definition** | **Data type and values** | **Multiplicity and use** |
| --- | --- | --- | --- |
| creatorApplication  atom:generator | The name, reference and version of the creator application used to create the context document | owc:CreatorApplication  (as defined in Table 8) | Zero or one (optional) |
| creatorDisplay  owc:display | Properties of the display in use when the context document was created (for display based applications only). | owc:CreatorDisplay (as defined in Table 9) | Zero or more (optional) |
| extension | Any encoding should allow the user to extend the Creator information to include custom items | n/a | Zero or more (optional) |

### DataType OWC:Creator/OWC:CreatorApplication

The mapping between the OWC:Creator Class and Atom encoding is made using the existing *atom:generator* element. In addition to the Atom common attributes (*xml:base* and *xml:lang*), it contains *uri* and *version* attributes that mapped to the class *owc:creatorApplication* as shown in the table below.

Table 8 - Definitions of owc:Creator/OWC:CreatorApplication elements

| **Names: Conceptual Atom mapping** | **Definition** | **Data type and values** | **Multiplicity and use** |
| --- | --- | --- | --- |
| Title  atom:generator/. | Title or name of the application (for display purposes) | CharacterString | Zero or one (optional) |
| uri  atom:generator/ @uri | URI describing the creator application. | URI | Zero or more (optional) |
| version  atom:generator/ @version | Version of the creator application | CharacterString | Zero or more (optional) |
|  | | | |

Note: The properties for Creator application map to the top level, i.e. the DataType ‘Creator’ is not realized in the Atom Encoding and the property atom:generator maps to the top level (i.e. into the resource class).

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:dc="http://purl.org/dc/elements/1.1/"

xml:lang="en">

...

<generator uri="http://mysite.com/mycontext.php" version="1.0">

ACME OWS Context Server

</generator>

...

</feed>

#### title

**Path**: atom:feed/atom:entry/atom:generator/

The content of this element SHALL be a human-readable text (character string) where entities such as "&amp;" and "&lt;" represent their corresponding characters ("&" and "<" respectively), not markup.

#### uri

**Path**: atom:feed/atom:entry/atom:generator/@uri

The optional *uri* attribute is a URI that when dereferenced SHALL produce a representation that is relevant to the client (web address).

#### version

**Path**: atom:feed/atom:entry/atom:generator/@version

The optional *version* attribute is a character string that conveys the version of the generating application.

### DataType OWC:Creator/OWC:CreatorDisplay

The OWC:CreatorDisplay class provides place to encode information related to the display area used in the creator application when the OWS Context document was produced. This class is optional and intended for creator applications that use a graphical user interface with a geographical display within a fixed pixel size and not scalable to different computational devices. The set of properties of this class are only informative and creator applications SHALL NOT expect clients to use them to reproduce the original graphical display. Client applications SHALL NOT use the information of this class to define the size of their own graphical interface. The values present on this class are to be considered as a creator application metadata and client applications SHALL NOT assign any meaning to them. The presence of this class in an Context document SHALL NOT be considered an indication of any type of limitation or constraint of the Context resources (*atom:entry* elements). The mapping between the OWC:CreatorDisplay Class and Atom encoding is shown in the table below.

Table 9 - Definitions of owc:CreatorDisplay elements

| **Names: Conceptual Atom mapping** | **Definition** | **Data type and values** | **Multiplicity and use** |
| --- | --- | --- | --- |
| pixelWidth  owc:display/ owc:pixelWidth | Width measured in pixels of the display specified by Area of Interest. | Integer | Zero or more (optional) |
| pixelHeight  owc:display/ owc:pixelHeight | Width measured in pixels of the display specified by Area of Interest. | Integer | Zero or more (optional) |
| mmPerPixel  owc:display/ owc:mmPerPixel | Number of pixels per mm for the above parameters (allowing the real display size to be calculated. | Integer | Zero or more (optional) |
| extension | Any other element | Any (outside of the atom or owc namespace) | Zero or more (optional) |

Note: The properties for CreatorDisplay map to the top level, i.e. the DataType ‘Creator’ is not realized in the Atom Encoding and the DataType owc:display maps to the top level (i.e. into the resource class).

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:owc="http://www.opengis.net/owc/1.0"

xml:lang="en">

...

<owc:display>

<owc:pixelWidth>400</owc:pixelWidth>

<owc:pixelHeight>400</owc:pixelHeight>

<owc:mmPerPixel >0.28</owc:mmPerPixel >

</owc:display>

...

</feed>

## Atom [WMS](https://portal.opengeospatial.org/wiki/OWSContextswg/WMS) Offering

**Requirement Class:** http://www.opengis.net/spec/owc-atom/1.0/req/wms

**Scope:** All requirements in this subsection relate to the above requirement class)

**Dependencies**: [http://www.opengis.net/spec/owc/1.0/req/wms](http://www.opengis.net/spec/owc/1.0/conf/wms" \t "_top) , http://www.opengis.net/spec/owc-atom/1.0/req/core

**Requirement id:** http://www.opengis.net/spec/owc-atom/1.0/req/wms/content

**Requirement tx:** Encodings of this offering shall be populated in accordance with the requirements of the referenced wms conformance class (see REF 1, OWS Context Conceptual Model)

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:owc="http://www.opengis.net/owc/1.0"

xml:lang="en">

...

<entry>

...

<owc:offering

code="http://www.opengis.net/spec/owc-atom/1.0/req/wms">

<owc:operation code="GetCapabilities" method="GET"

type="application/xml" href="http://www.opengis.uab.cat/cgi‑bin/SatCat/MiraMon.cgi?SERVICE=WMS&amp;VERSION=1.1.1&amp;REQUEST=GetCapabilities"/>

<owc:operation code="GetMap" method="GET" type="image/jpeg" href="http://www.opengis.uab.cat/cgi‑bin/SatCat/MiraMon.cgi?SERVICE=WMS&amp;VERSION=1.1.1&amp;REQUEST=GetMap&amp;SRS=EPSG:23031&amp;BBOX=355000,4539000,475000,4619000&amp;WIDTH=600&amp;HEIGHT=400&amp;LAYERS=TotCatalunyaED50&amp;FORMAT=image/jpeg&amp;STYLES=opti\_fals&amp;TIME=2011-03"/>

</owc:offering>

</entry>

## Atom [WFS](https://portal.opengeospatial.org/wiki/OWSContextswg/WFS) Offering

**Requirement Class:** http://www.opengis.net/spec/owc-atom/1.0/req/wfs

**Scope:** All requirements in this subsection relate to the above requirement class)

**Dependencies**: [http://www.opengis.net/spec/owc/1.0/req/wms](http://www.opengis.net/spec/owc/1.0/conf/wms" \t "_top) , http://www.opengis.net/spec/owc-atom/1.0/req/core

**Requirement id:** http://www.opengis.net/spec/owc-atom/1.0/req/wfs/content

**Requirement tx:** Encodings of this offering shall be populated in accordance with the requirements of the referenced wfs conformance class (see REF 1, OWS Context Conceptual Model)

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:owc="http://www.opengis.net/owc/1.0"

xml:lang="en">

...

<entry>

...

<owc:offering

code="http://www.opengis.net/spec/owc-atom/1.0/req/wfs">

<owc:operation method="GET" code="GetCapabilities" href="http://services.interactive-instruments.de/xsprojects/ows9-tds/services/ltds/wfs?SERVICE=WFS&amp;VERSION=1.0.0&amp;REQUEST=GetCapabilities" type="text/xml"/>

<owc:operation method="GET" code="GetFeature" href="http://services.interactive-instruments.de/xsprojects/ows9-tds/services/ltds/wfs?SERVICE=WFS&amp;VERSION=1.1.0&amp;REQUEST=GetFeature&amp;NAMESPACES=xmlns(tds,http:%2F%2Fmetadata.dod.mil%2Fmdr%2Fns%2FGSIP%2F3.0%2Ftds%2F3.0)&amp;OUTPUTFORMAT=text/xml;%20subtype=gml/3.2.1BBOX=-90,-180,90,180&amp;TYPENAME=tds:AerodromeBoundaryGeocurve"/>

</owc:offering>

</entry>

## Atom [WCS](https://portal.opengeospatial.org/wiki/OWSContextswg/WCS) Offering

**Requirement Class:** http://www.opengis.net/spec/owc-atom/1.0/req/wcs

**Scope:** All requirements in this subsection relate to the above requirement class)

**Dependencies**: [http://www.opengis.net/spec/owc/1.0/req/wcs](http://www.opengis.net/spec/owc/1.0/conf/wcs" \t "_top), http://www.opengis.net/spec/owc-atom/1.0/req/core

**Requirement id:** http://www.opengis.net/spec/owc-atom/1.0/req/wcs/content

**Requirement tx:** Encodings of this offering shall be populated in accordance with the requirements of the referenced wcs conformance class (see REF 1, OWS Context Conceptual Model)

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:owc="http://www.opengis.net/owc/1.0"

xml:lang="en">

...

<entry>

...

<owc:offering

code="http://www.opengis.net/spec/owc-atom/1.0/req/wcs">

<owc:operation code="GetCapabilities" method="GET"

type="text/xml"

href="http://ows9.csiss.gmu.edu/cgi-bin/ows9/gmuwcs?service=WCS&amp;version=2.0&amp;request=GetCapabilities"/>

<owc:operation code="GetCoverage" method="GET" type="image/jp2"

href="http://ows9.csiss.gmu.edu/cgi-bin/ows9/gmuwcs?service=WCS&amp;version=2.0&amp;request=GetCoverage&amp;coverageid=NITF:%22/home/yshao/ows9/jpip/data/NITF\_Sample\_Data/Files/DIGEST\_Example\_2.ntf%22:Data&amp;format=image/JPEG2000&amp;BoundingBox=18.548652,-72.3627630648135,18.592594,-72.2677392817456,urn:ogc:def:crs:epsg:6.3:4326"/>

</owc:offering>

</entry>

## Atom [WPS](https://portal.opengeospatial.org/wiki/OWSContextswg/WPS) Offering

**Requirement Class:** http://www.opengis.net/spec/owc-atom/1.0/req/wps

**Scope:** All requirements in this subsection relate to the above requirement class)

**Dependencies**: [http://www.opengis.net/spec/owc/1.0/req/wps](http://www.opengis.net/spec/owc/1.0/conf/wps" \t "_top) , http://www.opengis.net/spec/owc-atom/1.0/req/core

**Requirement id:** http://www.opengis.net/spec/owc-atom/1.0/req/wps/content

**Requirement tx:** Encodings of this offering shall be populated in accordance with the requirements of the referenced wps conformance class (see REF 1, OWS Context Conceptual Model)

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:owc="http://www.opengis.net/owc/1.0"

xml:lang="en">

...

<entry>

...

<owc:offering

code="http://www.opengis.net/spec/owc-atom/1.0/req/wps">

<owc:operation method="GET" code="GetCapabilities" href="http://services.interactive-instruments.de/xsprojects/ows9-tds/services/ltds/wfs?SERVICE=WFS&amp;VERSION=1.0.0&amp;REQUEST=GetCapabilities" type="text/xml"/>

<owc:operation code="DescribeProcess" method="GET"

type="application/xml"

href="http://geoprocessing.demo.52north.org:8080/wps/WebProcessingService?REQUEST=DescribeProcess&amp;SERVICE=WPS&amp;identifier=org.n52.wps.server.algorithm.SimpleBufferAlgorithm"/>

<owc:operation method="POST" code="Execute" href="http://geoprocessing.demo.52north.org:8080/wps/WebProcessingService?"

>

<owc:request type="text/xml">

<wps:Execute service="WPS" version="1.0.0"

xmlns:wps="http://www.opengis.net/wps/1.0.0"

xmlns:ows="http://www.opengis.net/ows/1.1"

xmlns:ogc="http://www.opengis.net/ogc"

xmlns:xlink="http://www.w3.org/1999/xlink"

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xsi:schemaLocation="http://www.opengis.net/wps/1.0.0 http://schemas.opengis.net/wps/1.0.0/wpsExecute\_request.xsd">

<ows:Identifier>

org.n52.wps.server.algorithm.SimpleBufferAlgorithm

</ows:Identifier>

<wps:DataInputs>

<wps:Input>

<ows:Identifier>data</ows:Identifier>

<wps:Reference

schema="http://schemas.opengis.net/gml/3.1.1/base/feature.xsd" xlink:href="http://geoprocessing.demo.52north.org:8080/geoserver/wfs?SERVICE=WFS&amp;VERSION=1.0.0&amp;REQUEST=GetFeature&amp;TYPENAME=topp:tasmania\_roads&amp;SRS=EPSG:4326&amp;OUTPUTFORMAT=GML3" method="GET"/>

</wps:Input>

<wps:Input>

<ows:Identifier>width</ows:Identifier>

<wps:Data>

<wps:LiteralData dataType="xs:double">

0.05

</wps:LiteralData>

</wps:Data>

</wps:Input>

</wps:DataInputs>

<wps:ResponseForm>

<wps:ResponseDocument storeExecuteResponse="false"

lineage="false" status="false">

<wps:Output asReference="false"

schema="http://schemas.opengis.net/gml/3.1.1/base/feature.xsd"

mimeType="text/xml" encoding="UTF-8">

<ows:Identifier>result</ows:Identifier>

<ows:Title>result</ows:Title>

<ows:Abstract>result</ows:Abstract>

</wps:Output>

</wps:ResponseDocument>

</wps:ResponseForm>

</wps:Execute>

</owc:request>

</owc:operation>

</owc:offering>

</entry>

...

</feed>

## Atom [CSW](https://portal.opengeospatial.org/wiki/OWSContextswg/CSW) Offering

**Requirement Class:** http://www.opengis.net/spec/owc-atom/1.0/req/csw

**Scope:** All requirements in this subsection relate to the above requirement class)

**Dependencies**: [http://www.opengis.net/spec/owc/1.0/req/csw](http://www.opengis.net/spec/owc/1.0/conf/csw" \t "_top) , http://www.opengis.net/spec/owc-atom/1.0/req/core

**Requirement id:** http://www.opengis.net/spec/owc-atom/1.0/req/csw/content

**Requirement tx:** Encodings of this offering shall be populated in accordance with the requirements of the referenced wps conformance class (see REF 1, OWS Context Conceptual Model)

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:owc="http://www.opengis.net/owc/1.0"

xml:lang="en ">

...

<entry>

...

<owc:offering

code="http://www.opengis.net/spec/owc-atom/1.0/req/csw">

<owc:operation method="GET" code="GetCapabilities" href="http://www.someserver.com/wrs.cgi?service=CSW&amp;request=GetCapabilities"/>

<owc:operation method="POST" code="GetRecords"

href="http://www.someserver.com/wrs.cgi?">

<owc:request type="application/xml">

<GetRecords

service="CSW"

version="2.0.2"

maxRecords="5"

startPosition="1"

resultType="results"

outputFormat="application/xml"

outputSchema="http://www.opengis.net/cat/csw/2.0.2"

xmlns="http://www.opengis.net/cat/csw/2.0.2"

xmlns:csw="http://www.opengis.net/cat/csw/2.0.2"

xmlns:ogc="http://www.opengis.net/ogc"

xmlns:ows="http://www.opengis.net/ows"

xmlns:dc="http://purl.org/dc/elements/1.1/"

xmlns:dct="http://purl.org/dc/terms/"

xmlns:gml="http://www.opengis.net/gml"

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xsi:schemaLocation="http://www.opengis.net/cat/csw/2.0.2

http://schemas.opengis.net/csw/2.0.2/CSW-discovery.xsd">

<Query typeNames="csw:Record">

<ElementSetName typeNames="csw:Record">full</ElementSetName>

<Constraint version="1.1.0">

<ogc:Filter>

<ogc:And>

<ogc:PropertyIsLike escapeChar="\" singleChar="?"

wildCard="\*">

<ogc:PropertyName>dc:title</ogc:PropertyName>

<ogc:Literal>\*Elevation\*</ogc:Literal>

</ogc:PropertyIsLike>

<ogc:Intersects>

<ogc:PropertyName>ows:BoundingBox</ogc:PropertyName>

<gml:Envelope>

<gml:lowerCorner>14.05 46.46</gml:lowerCorner>

<gml:upperCorner>17.24 48.42</gml:upperCorner>

</gml:Envelope>

</ogc:Intersects>

</ogc:And>

</ogc:Filter>

</Constraint>

</Query>

</GetRecords>

</owc:request>

</owc:operation>

</owc:offering>

</entry>

...

</feed>

## Atom [WMTS](https://portal.opengeospatial.org/wiki/OWSContextswg/WMTS) Offering

**Requirement Class:** http://www.opengis.net/spec/owc-atom/1.0/req/wmts

**Scope:** All requirements in this subsection relate to the above requirement class)

**Dependencies**: [http://www.opengis.net/spec/owc/1.0/req/wmts](http://www.opengis.net/spec/owc/1.0/conf/wmts" \t "_top) , http://www.opengis.net/spec/owc-atom/1.0/req/core

**Requirement id:** http://www.opengis.net/spec/owc-core/1.0/req/wmts/content

**Requirement tx:** Encodings of this offering shall be populated in accordance with the requirements of the referenced wmts conformance class (see REF 1, OWS Context Conceptual Model)

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:owc="http://www.opengis.net/owc/1.0"

xml:lang="en">

...

<entry>

...

<owc:offering

code="http://www.opengis.net/spec/owc-atom/1.0/req/wmts">

<owc:operation code="GetCapabilities" method="GET"

type="application/xml" href="http://www.opengis.uab.es/cgi-bin/ICCTiled/MiraMon.cgi?REQUEST=GetCapabilities&amp;SERVICE=WMTS"/>

<owc:operation code="GetTile" method="GET" type="image/jpeg" href=" http://www.opengis.uab.es/cgi-bin/ICCTiled/MiraMon.cgi?REQUEST=GetTile&amp;SERVICE=WMTS&amp;version=1.0.0&amp;format=image/jpeg&amp;layer=Topo250k\_Vers5\_ICC&amp;TileMatrixSet=Cat\_topo250k\_v5\_EPSG23031&amp;TileMatrix=200m&amp;TileRow=1&amp;TileCol=0"/>

</owc:offering>

</entry>

...

</feed>

## Atom GML Offering

**Requirement Class:** http://www.opengis.net/spec/owc/1.0/req/atom/gml

**Scope:** All requirements in this subsection relate to the above requirement class)

**Dependencies**: [http://www.opengis.net/spec/owc/1.0/req/gml](http://www.opengis.net/spec/owc/1.0/conf/gml" \t "_top) , http://www.opengis.net/spec/owc-atom/1.0/req/core

**Requirement id:** http://www.opengis.net/spec/owc-atom/1.0/req/gml/content

**Requirement tx:** Encodings of this offering shall be populated in accordance with the requirements of the referenced gml conformance class (see REF 1, OWS Context Conceptual Model)

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:owc="http://www.opengis.net/owc/1.0"

xml:lang="en">

...

<entry>

...

<owc:offering

code="http://www.opengis.net/spec/owc-atom/1.0/req/gml">

<owc:content type="application/gml+xml">

<gml:FeatureCollection gml:id="1234567890" xmlns:clk="http://www.envitia.com/clk" xmlns:gml="http://www.opengis.net/gml" xmlns:xlink="http://www.w3.org/1999/xlink" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.envitia.com/clk clk.xsd">

<gml:boundedBy>

<gml:Envelope srsName="urn:opengis:def:crs:EPSG::28992">

<gml:lowerCorner>5.000000 -76.318245</gml:lowerCorner>

<gml:upperCorner>28.485352 -37.000000</gml:upperCorner>

</gml:Envelope>

</gml:boundedBy>

<gml:featureMembers>

<clk:al212010\_position>

<clk:geometry>

<gml:Point srsName="urn:opengis:def:crs:EPSG::4326">

<gml:Pos srsDimension="2">

5.000000 -37.000000

</gml:Pos>

</gml:Point>

</clk:geometry>

</clk:al212010\_position>

</gml:featureMembers>

</gml:FeatureCollection>

</owc:content>

</owc:offering>

</entry>

...

</feed>

Note it is also valid to specify a file or url reference to gml content. See the content class definition for details.

## Atom KML Offering

**Requirement Class:** http://www.opengis.net/spec/owc-atom/1.0/req/kml

**Scope:** All requirements in this subsection relate to the above requirement class)

**Dependencies**: [http://www.opengis.net/spec/owc/1.0/req/kml](http://www.opengis.net/spec/owc/1.0/conf/kml" \t "_top) , http://www.opengis.net/spec/owc-atom/1.0/req/core

**Requirement id:** http://www.opengis.net/spec/owc-atom/1.0/req/kml/content

**Requirement tx:** Encodings of this offering shall be populated in accordance with the requirements of the referenced kml conformance class (see REF 1, OWS Context Conceptual Model)

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:owc="http://www.opengis.net/owc/1.0"

xml:lang="en">

...

<entry>

...

<owc:offering

code="http://www.opengis.net/spec/owc-atom/1.0/req/kml">

<owc:content type="application/vnd.google-earth.kml+xml">

<kml xmlns="http://www.opengis.net/kml/2.2"

xsi:schemaLocation="http://www.opengis.net/kml/2.2

http://schemas.opengis.net/kml/2.2.0/ogckml22.xsd">

<Folder>

<name>Tomas - Category 2 Tropical Storm</name>

<description>

<![CDATA[Tomas - Category 2 Tropical Storm, converted from <a href="https://portal.opengeospatial.org/wiki/OWS9/Ows9Data#tomas.csv:\_Tomas\_Storm\_44\_Category\_2\_2011\_CSV">this csv file</a> using <a href="http://nautilus.baruch.sc.edu/twiki\_dmcc/bin/view/Main/Csv2Kml">csv2kml</a>]]>

</description>

<Placemark>

<name>25</name>

<description><![CDATA[1009]]></description>

<TimeStamp><when>2010-10-26T18:00:00</when></TimeStamp>

<Style>

<IconStyle>

<color>ff000000</color>

<scale>1</scale>

<Icon>

<href>

http://carocoops.org/gearth/images/white\_circle\_icon.png

</href>

</Icon>

</IconStyle>

</Style>

<Point>

<coordinates>-37,5,0</coordinates>

</Point>

</Placemark>

</Folder>

</kml>

</owc:content>

</owc:offering>

</entry>

...

</feed>

Note it is also valid to specify a file or url reference to gml content. See the content class definition for details.

## Atom GeoTIFF Offering

**Requirement Class:** http://www.opengis.net/spec/owc-atom/1.0/req/geotiff

**Scope:** All requirements in this subsection relate to the above requirement class)

**Dependencies**: [http://www.opengis.net/spec/owc/1.0/req/geotiff](http://www.opengis.net/spec/owc/1.0/conf/geotiff" \t "_top) , http://www.opengis.net/spec/owc-atom/1.0/req/core

**Requirement id:** http://www.opengis.net/spec/owc-atom/1.0/req/geotiff/content

**Requirement tx:** Encodings of this offering shall be populated in accordance with the requirements of the referenced geotiff conformance class (see REF 1, OWS Context Conceptual Model)

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:owc="http://www.opengis.net/owc/1.0"

xml:lang="en">

...

<entry>

...

<owc:offering

code="http://www.opengis.net/spec/owc-atom/1.0/req/geotiff">

<content type="image/tiff"

href="ftp://ftp.remotesensing.org/pub/geotiff/samples/gdal\_eg/cea.tif"/>

</owc:offering>

</entry>

...

</feed>

## Atom GMLJP2 Offering

**Requirement Class:** http://www.opengis.net/spec/owc-atom/1.0/req/gmljp2

**Scope:** All requirements in this subsection relate to the above requirement class)

**Dependencies**: [http://www.opengis.net/spec/owc/1.0/req/gmljp2](http://www.opengis.net/spec/owc/1.0/conf/gmljp2" \t "_top) , http://www.opengis.net/spec/owc-atom/1.0/req/core

**Requirement id:** http://www.opengis.net/spec/owc-atom/1.0/req/gmljp2/content

**Requirement tx:** Encodings of this offering shall be populated in accordance with the requirements of the referenced gmljp2 conformance class (see REF 1, OWS Context Conceptual Model)

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:owc="http://www.opengis.net/owc/1.0"

xml:lang="en">

...

<entry>

...

<owc:offering

code="http://www.opengis.net/spec/owc-atom/1.0/req/gmljp2">

<content type=" image/jp2" href=" http://j2k-codec.com/gml.jp2"/>

</owc:offering>

</entry>

...

</feed>

## Atom GMLCOV Offering

**Requirement Class:** http://www.opengis.net/spec/owc-atom/1.0/req/gmlcov

**Scope:** All requirements in this subsection relate to the above requirement class)

**Dependencies**: http://www.opengis.net/spec/owc/1.0/req/gmlcov , http://www.opengis.net/spec/owc-atom/1.0/req/core

**Requirement id:** http://www.opengis.net/spec/owc-atom/1.0/req/gmlcov/content

**Requirement tx:** Encodings of this offering shall be populated in accordance with the requirements of the referenced gmlcov conformance class (see REF 1, OWS Context Conceptual Model)

Example:

<feed xmlns="http://www.w3.org/2005/Atom"

xmlns:owc="http://www.opengis.net/owc/1.0"

xml:lang="en">

...

<entry>

...

<owc:offering

code="http://www.opengis.net/spec/owc-atom/1.0/req/gmlcov">

<owc:content type="application/gml+xml">

<gmlcov:GridCoverage

xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance'

xmlns:gml='http://www.opengis.net/gml/3.2'

xmlns='http://www.opengis.net/gml/3.2'

xmlns:swe='http://www.opengis.net/swe/2.0'

xmlns:gmlcov='http://www.opengis.net/gmlcov/1.0'

xmlns:xlink='http://www.w3.org/1999/xlink'

xsi:schemaLocation='http://www.opengis.net/gmlcov/1.0

http://schemas.opengis.net/gmlcov/1.0/gmlcovAll.xsd'

gml:id='C0001'>

<gml:boundedBy>

<gml:Envelope

srsName="http://www.opengis.net/def/crs/EPSG/0/4326"

axisLabels="Lat Long" uomLabels="deg deg" srsDimension="2">

<gml:lowerCorner>-90 -180</gml:lowerCorner>

<gml:upperCorner>90 180</gml:upperCorner>

</gml:Envelope>

</gml:boundedBy>

<gml:domainSet>

<gml:Grid gml:id="gr0001\_C0001" dimension="2">

<gml:limits>

<gml:GridEnvelope>

<gml:low>0 0</gml:low>

<gml:high>202 259</gml:high>

</gml:GridEnvelope>

</gml:limits>

<gml:axisLabels>Lat Long</gml:axisLabels>

</gml:Grid>

</gml:domainSet>

<gml:rangeSet>

<File>

<rangeParameters

xlink:href="ftp://ftp.remotesensing.org/pub/geotiff/samples/gdal\_eg/cea.tif" xlink:role="http://www.opengis.net/spec/GMLCOV\_geotiff-coverages/1.0/conf/geotiff-coverage" xlink:arcrole="fileReference"/>

<fileReference>

ftp://ftp.remotesensing.org/pub/geotiff/samples/gdal\_eg/cea.tif

</fileReference>

<fileStructure/>

<mimeType>image/tiff</mimeType>

</File>

</gml:rangeSet>

<gmlcov:rangeType>

<swe:DataRecord>

<swe:field name="gray">

<swe:Quantity

definition="http://opengis.net/def/property/OGC/0/Radiance">

<swe:description>Gray Channel</swe:description>

<swe:uom code="W/cm2"/>

</swe:Quantity>

</swe:field>

</swe:DataRecord>

</gmlcov:rangeType>

</gmlcov:GridCoverage>

</owc:content>

</owc:offering>

</entry>

...

</feed>

Annex A: Conformance Class Abstract Test Suite (Normative)

This conformance test is targeted at the Atom encoding of an OWS Context document and validates the encoding of an OWS Context Document is correct.

Conformance Test Class: core

The OGC URI identifier of this conformance class is: http://www.opengis.net/spec/owc-atom/1.0/conf/core. Tests identifiers below are shown in full but all relate to http://www.opengis.net/spec/owc-atom/1.0/core.

**Fully Implements the Rules of Atom**

**URI: http://www.opengis.net/spec/owc-atom/1.0/req/atomRules**

**Test Purpose:**

**To test requirement** http://www.opengis.net/spec/owc-atom/1.0/conf/atomRules

**Test Method:**

Validate the Atom encoded owc:context document is compliant with the Atom specification by using an Atom validator.

**Uses the specified MimeType**

**URI: http://www.opengis.net/spec/owc-atom/1.0/req/mimeType**

**Test Purpose:**

**To test requirement** http://www.opengis.net/spec/owc-atom/1.0/conf/mimeType

**Test Method:**

Validate that any reference to an OWS Context document uses the mimetype specified in the requirement. In terms of validation, this requirement may only be validated in terms of a reference from one OWS context document to another as it is a requirement on users of context documents.

**Uses the specified File Extension**

**URI: http://www.opengis.net/spec/owc-atom/1.0/req/fileExtension**

**Test Purpose:**

**To test requirement** http://www.opengis.net/spec/owc-atom/1.0/conf/fileExtension

**Test Method:**

Validate that the OWS Context document uses the file extension specified in the requirement.

**Encoding of Content is compliant with OWS Context Content**

**URI:** http://www.opengis.net/spec/owc-atom/1.0/conf/owcencoding

**Test Purpose:**

**To test requirement** http://www.opengis.net/spec/owc-atom/1.0/req/owcencoding

**Test Method**

Verify that the encoding of each of the owc:context classes correctly populates the properties including populating all mandatory properties in compliance with the specification using automated validation.

Conformance Test Class: wms

**URI:** http://www.opengis.net/spec/owc-atom/1.0/conf/wms

**Test Purpose:**

To test requirement http://www.opengis.net/spec/owc-atom/1.0/req/wms

**Test Method:**

Verify that the encoding of offering using the above extension correctly populates the properties of the offering class using automated validation.

Conformance Test Class: wfs

**URI:** http://www.opengis.net/spec/owc-atom/1.0/conf/wfs

**Test Purpose:**

To test requirement http://www.opengis.net/spec/owc-atom/1.0/req/wfs

**Test Method:**

Verify that the encoding of offering using the above extension correctly populates the properties of the offering class using automated validation.

Conformance Test Class: wcs

**URI:** http://www.opengis.net/spec/owc-atom/1.0/conf/wcs

**Test Purpose:**

To test requirement http://www.opengis.net/spec/owc-atom/1.0/req/wcs

**Test Method:**

Verify that the encoding of offering using the above extension correctly populates the properties of the offering class using automated validation.

Conformance Test Class: wps

**URI:** http://www.opengis.net/spec/owc-atom/1.0/conf/wps

**Test Purpose:**

To test requirement http://www.opengis.net/spec/owc-atom/1.0/req/wps

**Test Method:**

Verify that the encoding of offering using the above extension correctly populates the properties of the offering class using automated validation.

Conformance Test Class: csw

**URI:** http://www.opengis.net/spec/owc-atom/1.0/conf/csw

**Test Purpose:**

To test requirement http://www.opengis.net/spec/owc-atom/1.0/req/csw

**Test Method:**

Verify that the encoding of offering using the above extension correctly populates the properties of the offering class using automated validation.

Conformance Test Class: wmts

**URI:** http://www.opengis.net/spec/owc-atom/1.0/conf/wmts

**Test Purpose:**

To test requirement http://www.opengis.net/spec/owc-atom/1.0/req/wmts

**Test Method:**

Verify that the encoding of offering using the above extension correctly populates the properties of the offering class using automated validation.

Conformance Test Class: gml

**URI:** http://www.opengis.net/spec/owc-atom/1.0/conf/gml

**Test Purpose:**

To test requirement http://www.opengis.net/spec/owc-atom/1.0/req/gml

**Test Method:**

Verify that the encoding of offering using the above extension correctly populates the properties of the offering class using automated validation.

Conformance Test Class: kml

**URI:** http://www.opengis.net/spec/owc-atom/1.0/conf/kml

**Test Purpose:**

To test requirement http://www.opengis.net/spec/owc-atom/1.0/req/kml

**Test Method:**

Verify that the encoding of offering using the above extension correctly populates the properties of the offering class using automated validation.

Conformance Test Class: geotiff

**URI:** http://www.opengis.net/spec/owc-atom/1.0/cof /geotiff

**Test Purpose:**

To test requirement http://www.opengis.net/spec/owc-atom/1.0/req/geotiff

**Test Method:**

Verify that the encoding of offering using the above extension correctly populates the properties of the offering class using automated validation.

Conformance Test Class: gmljp2

**URI:** http://www.opengis.net/spec/owc-atom/1.0/conf/gmljp2

**Test Purpose:**

To test requirement http://www.opengis.net/spec/owc-atom/1.0/req/gmljp2

**Test Method:**

Verify that the encoding of offering using the above extension correctly populates the properties of the offering class using automated validation.

Conformance Test Class: gmlcov

**URI:** http://www.opengis.net/spec/owc-atom/1.0/conf/gmlcov

**Test Purpose:**

To test requirement http://www.opengis.net/spec/owc-atom/1.0/req/gmlcov

**Test Method:**

Verify that the encoding of offering using the above extension correctly populates the properties of the offering class using automated validation.

Annex B: Revision history

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date | Release | Author | Paragraph modified | Description |
| 24th April  2013 | Draft 14 | Roger Brackin | Many  6.2.1.13  6.2.8.8 | Update of URI Naming in line with OGC Naming Authority  Definition of order of entries In relation to drawing priority.  Addition of MIME Type and Extension. |
| 28th December  2012 | Draft 13 | Pedro Goncalves | General Amendments. Revised version for release to TC | Aligned with conceptual model changes and added schema |
| 3rd October 2012 | Draft 10 | Roger Brackin, Pedro Goncalves | Initial Document Release outside of SWG | Approved Draft Release for use in OWS-9 |
| 19th May 2013 | Draft 15 | Joan Masó | 6.3 to 6.13 | Examples for each extension included |
| 30th May 2013 | Draft 16 | Roger Brackin | Many | 1. Re-order of References to make Conceptual model Ref 1. 2. Replacement of Figure 1 with one in the Conceptual Model (Paul Daisey) 3. Addition of MimeType/File Extensions as requirements/Abstract Tests, (Joans comment) 4. Correction of Classes to DataTypes (Paul Daisey comments) 5. Correction of Creator Datatype structure. |
| 30th May 2013 | Draft 17 | Pedro Goncalves | 6.2.1, 6.2.7 and 6.2.8 | Corrected references between the feed and owc:creator |
| 31st May 2013 | Draft 18 | Roger Brackin | 6.2.2  Annex D, | Addition of Conceptual Model name ‘resourceDescription’ in resource table. |
| 3rd June 2013 | Draft 19 | Joan Masó | Annex D | Schema References and examples added |
| 31st August 2013 | Draft 21 | Roger Brackin/Pedro Goncalves | Section 2, Table 1, Section 6.2, 6.2.1.1, 6.2.1.9, Table 2 | Update of Specref structure in response to Atom RFC6906. Other minor typographic changes |

Annex C: Bibliography

1. [OGC 10-035r1] OWS Context Engineering Report

Annex D: Schemas and Examples

The following schemas and examples are provided in the OGC schema repository: http://schemas.opengis.net.

1. [1] www.opengeospatial.org/cite [↑](#footnote-ref-1)