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OGC OWS Context Atom Encoding Standard

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i. 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.

ii. Keywords

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

OGCDOC, COP, Common Operating Picture, OWC, Context

iii. Preface

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. The Open Geospatial Consortium shall not be held responsible for identifying any or all such patent rights.

Recipients of this document are requested to submit, with their comments, notification of any relevant patent claims or other intellectual property rights of which they may be aware that might be infringed by any implementation of the standard set forth in this document, and to provide supporting documentation when possible.

iv. 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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Jeff Yutzler	Image Matters Inc

1. 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.

2. 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
WFS:	http://www.opengis.net/spec/owc-atom/1.0/req/wfs
WCS:	http://www.opengis.net/spec/owc-atom/1.0/req/wcs
WPS:	http://www.opengis.net/spec/owc-atom/1.0/req/wps
WMTS:	http://www.opengis.net/spec/owc-atom/1.0/req/wmts
CSW:	http://www.opengis.net/spec/owc-atom/1.0/req/csw
GML:	http://www.opengis.net/spec/owc-atom/1.0/req/gml
KML:	http://www.opengis.net/spec/owc-atom/1.0/req/kml
GeoTIFF:	http://www.opengis.net/spec/owc-atom/1.0/req/geotiff
GMLJP2:	http://www.opengis.net/spec/owc-atom/1.0/req/gmljp2
GMLCOV:	http://www.opengis.net/spec/owc-atom/1.0/req/gmlcov

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].

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

- a) Conformance to the ‘Core Atom’ encoding.
- b) 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) .

3. 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

[1] www.opengeospatial.org/cite

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[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/>

4. 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:

4.1 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.

4.2 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.

4.3 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.

4.4 Area Of Interest

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

5. 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.

5.1 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

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WMS - Web Map Service

WMTS - Web Map Tile Service

WPS - Web Processing Service

XHTML - Extensible Hypertext Markup Language

XML - Extensible Markup Language

5.2 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.

5.3 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.

5.4 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.

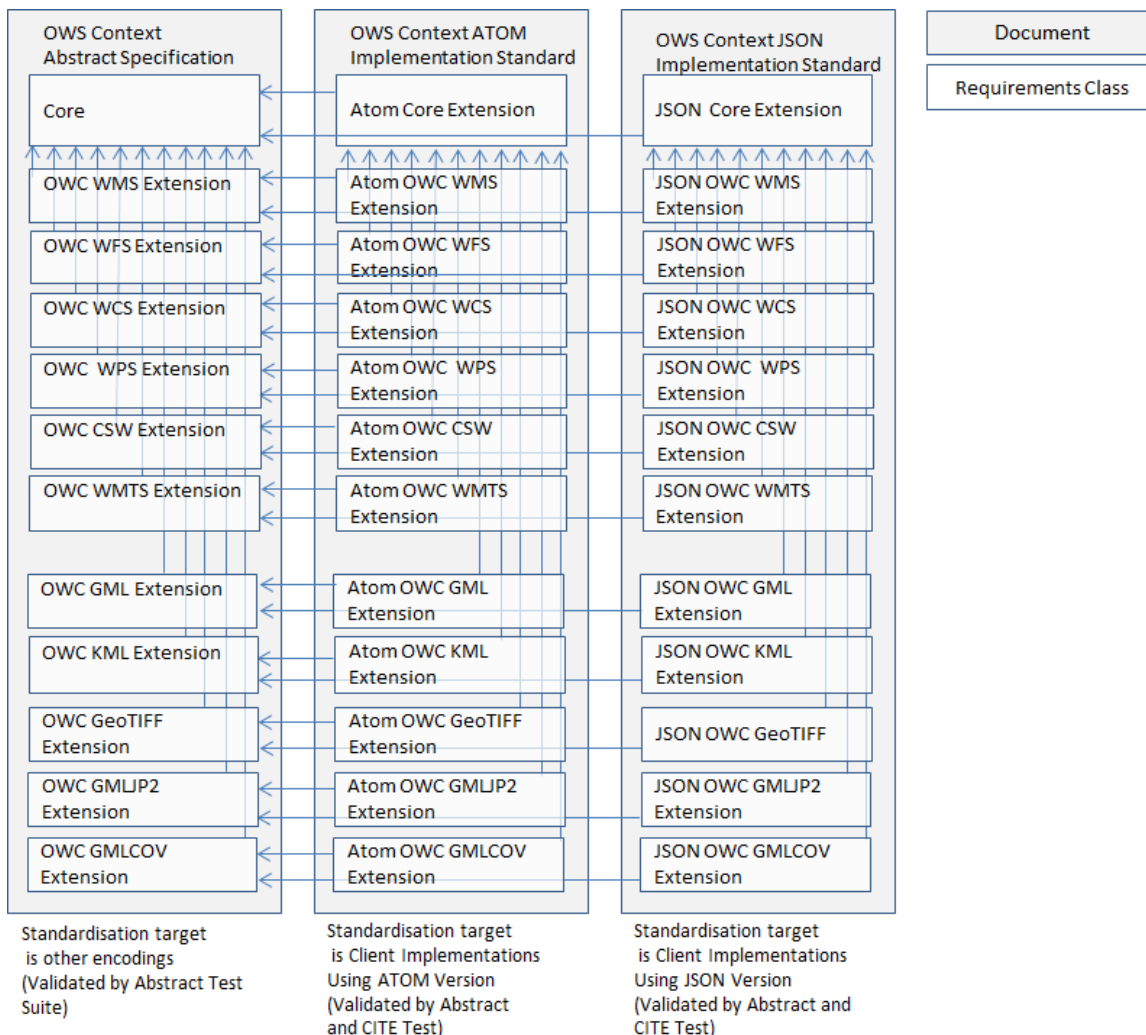


Figure 1 — OWS Context Requirement Class and Document Breakdown

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.

6. Atom Encoding Specification

6.1 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.

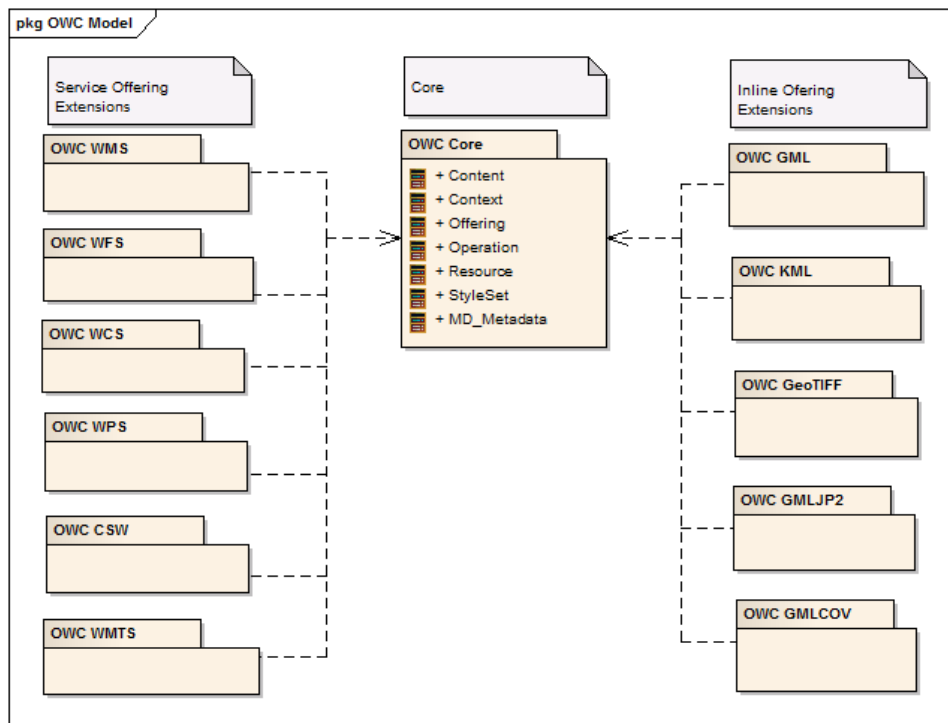


Figure 2 — OWS Context Standard Packages

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].

6.2 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>
- Requirement Id:** <http://www.opengis.net/spec/owc-atom/1.0/req/atomRules>
- Requirement Tx:** An Atom 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.

6.2.1 Class OWC:Context

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

Table 1 — 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	An entity primarily responsible for making the	Character String type,	Zero or more

Names: Conceptual Atom mapping ^a	Definition	Data type and value	Multiplicity and use
atom:feed/ atom:author/ atom:name	Context Document	not empty	(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 <i>georss:where</i> element definition [GEORSS]	<i>georss:where</i> 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	<i>atom:entry</i> (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)	<i>atom:link</i> element with the <i>@rel</i> equal to "via"	Zero or more (optional) ^d
extension	Any other element	Any (outside of the <i>atom</i> or <i>owc</i> 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 identify 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

6.2.1.1 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>
```

6.2.1.2 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>
```

6.2.1.3 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).

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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>
```

6.2.1.4 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>
```

6.2.1.5 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>
```

6.2.1.6 updateDate

Path: atom:feed/atom:updated

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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>
```

6.2.1.7 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>
```

6.2.1.8 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>
```

6.2.1.9 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.

6.2.1.10 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>
```

6.2.1.11 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>
```

6.2.1.12 **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>
```

6.2.1.13 **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.

6.2.1.14 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>
```

6.2.1.15 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>
```

6.2.1.16 extension

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

6.2.2 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 <i>atom:content</i> with <i>@type</i> 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)

Names: Conceptual Atom mapping^a	Definition	Data type and values	Multiplicity and use
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)

Names: Conceptual Atom mapping ^a	Definition	Data type and values	Multiplicity and use
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 <i>atom:category</i> element MAY have a <i>title</i> 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)
<p>a This specification assigns no significance to the order of appearance of the child elements of atom:entry.</p> <p>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.</p> <p>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</p> <p>d Because it describes a resource potentially large in size and might require special handling the length and type attribute SHOULD be provided.</p> <p>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</p> <p>f svg:svg and kml:kml are examples of common elements that might be used.</p>			

6.2.2.1 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>
```

6.2.2.2 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 "xhtml" 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>
```

6.2.2.3 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 "xhtml" 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>
```

6.2.2.4 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>
```

6.2.2.5 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>
```

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6.2.2.6 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>
```

6.2.2.7 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>
```

6.2.2.8 geospatialExtent

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

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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>
```

6.2.2.9 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>
```

6.2.2.10 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>
```

6.2.2.11 **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>
```

6.2.2.12 **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>
```


6.2.2.13 **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>
```

6.2.2.14 **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>
```

6.2.2.15 **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>
```

6.2.2.16 **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:minScaleDenominator>100</owc:minScaleDenominator>
    ...
  </entry>
  ...
</feed>
```

```

    </entry>
    ...
</feed>

```

6.2.2.17 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:maxScaleDenominator>100</owc:maxScaleDenominator>
    ...
  </entry>
  ...
</feed>

```

6.2.2.18 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>

```

6.2.2.19 extension

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

6.2.3 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)

6.2.3.1 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>
```

6.2.3.2 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).

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&SERVICE=WMS
&VERSION=1.1.1"/>
      </owc:offering>
    </entry>
    ...
  </feed>
```

6.2.3.3 content

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

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

6.2.3.4 styleSet

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

See section 6.2.6 class for further details.

6.2.3.5 extension

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

6.2.4 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 operation ^c	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.

6.2.4.1 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&SERVICE=WMS
&VERSION=1.1.1"/>
      </owc:offering>

    </entry>
    ...
  </feed>
```

6.2.4.2 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&SERVICE=WMS
&VERSION=1.1.1"/>
      </owc:offering>
    </entry>
    ...
  </feed>
```

6.2.4.3 type

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

It defines the MIME-type of the content class.

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6.2.4.4 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&SERVICE=WMS
&VERSION=1.1.1"/>
    </owc:offering>
  </entry>
  ...
</feed>
```

6.2.4.5 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&request=GetCapabilities
"/>
    </owc:offering>
  </entry>
  ...
</feed>
```



```

        <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>

```

6.2.4.6 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&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: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>

```

6.2.4.7 extension

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

6.2.5 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			

6.2.5.1 type

Path: //owc:content/@type

It defines the MIME-type of the content class.

6.2.5.2 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.

6.2.5.3 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>
```

6.2.5.4 extension

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

6.2.6 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)

Names: Conceptual Atom mapping	Definition	Data type and values	Multiplicity and use
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.

6.2.6.1 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>
```

6.2.6.2 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>
```

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6.2.6.3 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>
```

6.2.6.4 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>
```

6.2.6.5 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>
```

6.2.6.6 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>

```

6.2.6.7 extension

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

6.2.7 DataType OWC:Creator

This datatype class provides place to encode information related to the creator of the context 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)

6.2.8 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>
```

6.2.8.1 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 "&" and "<" represent their corresponding characters ("&" and "<" respectively), not markup.

6.2.8.2 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).

6.2.8.3 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.

6.2.9 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>

```

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

```

6.4 Atom WFS Offering

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

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- 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-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&VERSION=1.0.0&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&VERSION=1.1.0&REQUEST=GetFeature&
NAMESPACES=xmlns(tds,http:%2F%2Fmetadata.dod.mil%2Fmdr%2Fns%2FSGSIP%2F3.0%2Ftds%
2F3.0) &OUTPUTFORMAT=text/xml;%20subtype=gml/3.2.1BBOX=-90,-
180,90,180&TYPENAME=tds:AerodromeBoundaryGeocurve"/>
    </owc:offering>
  </entry>
```

6.5 Atom 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-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&version=2.0&request=GetCapabilities"/>
      <owc:operation code="GetCoverage" method="GET" type="image/jp2"
        href="http://ows9.csiss.gmu.edu/cgi-
bin/ows9/gmuwcs?service=WCS&version=2.0&request=GetCoverage&coverag
eid=NITF:%22/home/yshao/ows9/jpip/data/NITF_Sample_Data/Files/DIGEST_Example_2.
ntf%22:Data&format=image/JPEG2000&BoundingBox=18.548652,-
72.3627630648135,18.592594,-72.2677392817456,urn:ogc:def:crs:epsg:6.3:4326"/>
    </owc:offering>
  </entry>

```

6.6 Atom 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-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&VERSION=1.0.0&REQUEST=GetCapabilities
" type="text/xml"/>
    <owc:operation code="DescribeProcess" method="GET"
        type="application/xml"
href="http://geoprocessing.demo.52north.org:8080/wps/WebProcessingService?REQUE
ST=DescribeProcess&SERVICE=WPS&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=WF
S&VERSION=1.0.0&REQUEST=GetFeature&TYPENAME=topp:tasmania_roads&
;SRS=EPSG:4326&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>

```

6.7 Atom 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-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&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>

```

6.8 Atom 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-atom/1.0/req/core>

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- 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&SERVICE=WMTS"/>
      <owc:operation code="GetTile" method="GET" type="image/jpeg"
href=" http://www.opengis.uab.es/cgi-
bin/ICCTiled/MiraMon.cgi?REQUEST=GetTile&SERVICE=WMTS&version=1.0.0&
;format=image/jpeg&layer=Topo250k_Vers5_ICC&TileMatrixSet=Cat_topo250k_
v5_EPSG23031&TileMatrix=200m&TileRow=1&TileCol=0"/>

      </owc:offering>
    </entry>
    ...
  </feed>
```

6.9 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-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.

6.10 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-atom/1.0/req/core>

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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_Sto
rm_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.

6.11 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-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>

```

6.12 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)

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- Dependencies:** <http://www.opengis.net/spec/owc/1.0/req/gmljp2> ,
<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>
```

6.13 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">
    </owc:offering>
  </entry>
  ...
</feed>
```

```

<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/EPSPG/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.

A.1 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:

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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.

A.2 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.

A.3 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.

A.4 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:

OGC 12-084r2

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

A.5 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.

A.6 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.

A.7 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.

A.8 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:

OGC 12-084r2

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

A.9 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.

A.10 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.

A.11 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.

A.12 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:

OGC 12-084r2

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
24 th 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.
28 th December 2012	Draft 13	Pedro Goncalves	General Amendments. Revised version for release to TC	Aligned with conceptual model changes and added schema
3 rd 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	<ol style="list-style-type: none"> 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.
30 th May 2013	Draft 17	Pedro Goncalves	6.2.1, 6.2.7 and 6.2.8	Corrected references between the feed and owc:creator
31 st May 2013	Draft 18	Roger Brackin	6.2.2 Annex D,	Addition of Conceptual Model name 'resourceDescription' in resource table.
3 rd June 2013	Draft 19	Joan Masó	Annex D	Schema References and examples added
31 st 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>.