Open Geospatial Consortium

OGC OWS Context GeoJSON Encoding Standard

Copyright notice

Warning

License Agreement

Permission is hereby granted by the Open Geospatial Consortium, ("Licensor"), free of charge and subject to the terms set forth below, to any person obtaining a copy of this Intellectual Property and any associated documentation, to deal in the Intellectual Property without restriction (except as set forth below), including without limitation the rights to implement, use, copy, modify, merge, publish, distribute, and/or sublicense copies of the Intellectual Property, and to permit persons to whom the Intellectual Property is furnished to do so, provided that all copyright notices on the intellectual property are retained intact and that each person to whom the Intellectual Property is furnished agrees to the terms of this Agreement.

If you modify the Intellectual Property, all copies of the modified Intellectual Property must include, in addition to the above copyright notice, a notice that the Intellectual Property includes modifications that have not been approved or adopted by LICENSOR.

THIS LICENSE IS A COPYRIGHT LICENSE ONLY, AND DOES NOT CONVEY ANY RIGHTS UNDER ANY PATENTS THAT MAY BE IN FORCE ANYWHERE IN THE WORLD.

THE INTELLECTUAL PROPERTY IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE DO NOT WARRANT THAT THE FUNCTIONS CONTAINED IN THE INTELLECTUAL PROPERTY WILL MEET YOUR REQUIREMENTS OR THAT THE OPERATION OF THE INTELLECTUAL PROPERTY WILL BE UNINTERRUPTED OR ERROR FREE. ANY USE OF THE INTELLECTUAL PROPERTY SHALL BE MADE ENTIRELY AT THE USER'S OWN RISK. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR ANY CONTRIBUTOR OF INTELLECTUAL PROPERTY RIGHTS TO THE INTELLECTUAL PROPERTY BE LIABLE FOR ANY CLAIM, OR ANY DIRECT, SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM ANY ALLEGED INFRINGEMENT OR ANY LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR UNDER ANY OTHER LEGAL THEORY, ARISING OUT OF OR IN CONNECTION WITH THE IMPLEMENTATION, USE, COMMERCIALIZATION OR PERFORMANCE OF THIS INTELLECTUAL PROPERTY.

This license is effective until terminated. You may terminate it at any time by destroying the Intellectual Property together with all copies in any form. The license will also terminate if you fail to comply with any term or condition of this Agreement. Except as provided in the following sentence, no such termination of this license shall require the termination of any third party end-user sublicense to the Intellectual Property which is in force as of the date of notice of such termination. In addition, should the Intellectual Property, or the operation of the Intellectual Property, infringe, or in LICENSOR's sole opinion be likely to infringe, any patent, copyright, trademark or other right of a third party, you agree that LICENSOR, in its sole discretion, may terminate this license without any compensation or liability to you, your licensees or any other party. You agree upon termination of any kind to destroy or cause to be destroyed the Intellectual Property together with all copies in any form, whether held by you or by any third party.

Except as contained in this notice, the name of LICENSOR or of any other holder of a copyright in all or part of the Intellectual Property shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Intellectual Property without prior written authorization of LICENSOR or such copyright holder. LICENSOR is and shall at all times be the sole entity that may authorize you or any third party to use certification marks, trademarks or other special designations to indicate compliance with any LICENSOR standards or specifications. This Agreement is governed by the laws of the Commonwealth of Massachusetts. The application to this Agreement of the United Nations Convention on Contracts for the International Sale of Goods is hereby expressly excluded. In the event any provision of this Agreement shall be deemed unenforceable, void or invalid, such provision shall be modified so as to make it valid and enforceable, and as so modified the entire Agreement shall remain in full force and effect. No decision, action or inaction by LICENSOR shall be construed to be a waiver of any rights or remedies available to it.

Contents

4

i.   Abstract

This standard describes the GeoJSON encoding of the OGC Web Services (OWS) Context conceptual model. This standard defines how to encode an OWS context document that 1.) can be extended to allow a context referencing a fully configured service set, and 2.) can be defined and consistently interpreted by clients.

The OWS 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 processing nodes.

The goal for OWS Context is to replace previous OGC standards and best practices that provide similar capability. Web Map Context (WMC) has been reasonably successful but is limited to working with only Web Map Service (WMS) instances. Other work on the Location Organizer Folder[1] (LOF) was also taken into consideration. The concept of OWS Context and the first prototype document was produced as part of OWS Testbed 7 and documented in [OGC10-035r1], Information Sharing Engineering Report.

A principal goal of the OWS Context SWG was to develop encodings that would appeal for use in mass market applications yet also provide facilities for more advanced uses. OWS-7 originally considered the application of existing encoding standards for OWS Context. The OGC Standards Working Group (SWG) has concluded that this standard can have multiple encoding formats and that each encoding format will be described in a separate OGC Extension to the Core model.

An additional goal is that transformations of context documents between the different encodings should be lossless.

GeoJSON[2] is a format for encoding collections of simple geographical features along with their non-spatial attributes using JSON. GeoJSON objects may represent a geometry, a feature, or a collection of features. GeoJSON supports the following geometry types: *Point*, *LineString*, *Polygon*, *MultiPoint*, *MultiLineString*, *MultiPolygon*, and *GeometryCollection*. Features in GeoJSON contain a geometry object and additional properties, and a feature collection represents a list of features.

This document concentrates on the GeoJSON encoding of the OWS Context Model as described in abstract terms in OGC 12-080r2 OGC OWS Context Conceptual Model (OGC 12-080r2). The goal of OWS Context is to allow many types of OGC data delivery services to be referenced and therefore exploited - not just OGC Web Map Service but

---

[1] http://portal.opengeospatial.org/files/?artifact_id=1042

[2] GeoJSON is a draft international standard (see Ref 14) RFC7946. As such referencing it normatively is valid within an OGC Standard

5

other OGC web services and content specifications, including but not limited to Web Feature Service, Web Coverage Service, Web Processing Service, GML, GeoTIFF and KML. This document does not explicitly define the encoding of these services and data encodings in the core, only the general approach to be used for different types of service and data interface.

ii.   Keywords

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

ogcdoc, ogc documents, COP, Common Operating Picture, OWC, Context, JSON, GeoJSON

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.

iv.   Submitting organizations

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

- Envitia Ltd
- Esri Inc.
- ImageMatters LLC
- NGA
- Terradue Srl.
- Universitat Autònoma de Barcelona-CREAF
- USGS

v.   Submitters

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

Name	Affiliation
Pedro Gonçalves	Terradue Srl
Roger Brackin	Envitia Ltd
Glenn Guempel	USGS

6

Marten Hogeweg	Esri Inc
Joan Maso	Universitat Autònoma de Barcelona-CREAF
David Wesloh	NGA
Jeff Yutzler	Image Matters LLC

1. Scope

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

2. Conformance

This standard 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-geojson/1.0/req/core
- WMS: http://www.opengis.net/spec/owc-geojson/1.0/req/wms
- WFS: http://www.opengis.net/spec/owc-geojson/1.0/req/wfs
- WCS: http://www.opengis.net/spec/owc-geojson/1.0/req/wcs
- WPS: http://www.opengis.net/spec/owc-geojson/1.0/req/wps
- WMTS: http://www.opengis.net/spec/owc-geojson/1.0/req/wmts
- CSW: http://www.opengis.net/spec/owc-geojson/1.0/req/csw
- GML: http://www.opengis.net/spec/owc-geojson/1.0/req/gml
- KML: http://www.opengis.net/spec/owc-geojson/1.0/req/kml
- GeoTIFF: http://www.opengis.net/spec/owc-geojson/1.0/req/geotiff
- GMLJP2: http://www.opengis.net/spec/owc-geojson/1.0/req/gmljp2
- GMLCOV: http://www.opengis.net/spec/owc-geojson/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-geojson/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[3].

---

[3] www.opengeospatial.org/cite

7

Requirements for two standardization target types are considered:
1. An OWS Context Document Encoded in GeoJSON; and
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).

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

1. Conformance to the 'Core GeoJSON' encoding; and
2. Conformance with zero or more of the offering-specific extensions.

All requirements-classes and conformance-classes described in this document are owned by the standard identified as OWS Context [OGC 14-055].

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.

3.1 Normative References

1. OGC: [OGC 12-080] - OWS Context Conceptual Model, 2014
2. ECMA: [ECMA-262] - ECMA International, "ECMAScript Language Specification, Edition 5.1", Standard ECMA-262, June 2011, http://www.ecma-international.org/publications/standards/Ecma-262.htm, 2011
3. ECMA: [ECMA-404] - The JSON Data Interchange Format http://www.ecma-international.org/publications/files/ECMA-ST/ECMA-404.pdf, 2013
4. ISO: [ISO-8601] - Data elements and interchange formats — Information interchange Representation of dates and times, Third edition, 2004
5. OGC: [OGC 05-077r4] - OGC Symbology Encoding Implementation Specification, 2006
6. OGC: [OGC 06-042] - OGC Web Map Service (WMS) Implementation Specification, 2006
7. OGC: [OGC 06-121r9] - OGC Web Service Common Implementation Specification, 2010
8. OGC: [OGC 07-036] - OGC Geography Markup Language (GML) Encoding Standard, 2007
9. IETF: [RFC-3339] - Date and Time on the Internet: Timestamps, 2002
10. IETF: [RFC-3986] - Uniform Resource Identifier (URI): Generic Syntax, 2005
11. IETF: [RFC-3987] - Internationalized Resource Identifiers (IRIs), 2005
12. IETF: [RFC-7159] - The JavaScript Object Notation (JSON) Data Interchange Format, 2014

13. W3C: [XML 1.0] - Extensible Markup Language (XML) 1.0 (Third Edition) - http://www.w3.org/TR/2004/REC-xml-20040204/, 2004
14. IETF: [RFC-7946] - The GeoJSON Format, 2016

4. Terms and Definitions

This document uses the terms defined in Sub-clause 5.3 of [OGC 06-121r9[4]], 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.

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

4.2   Common Operating Picture
A single identical display of relevant information shared by more than one user group. A common operational picture facilitates collaborative planning and assists all user groups to achieve situational awareness.

4.3   Context Document
A Context Document is a document describing the set of services and their configuration, and ancillary information, such as the area of interest, which defines the information representation of a shared view or data collection.

4.4   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.

5. Conventions

This section 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
CRS – Coordinate Reference System
GML – Geographical Markup Language
GMLCOV - GML Coverage

---

[4] http://portal.opengeospatial.org/files/?artifact_id=38867

GMLJP2 - GML in JPEG 2000 for Geographic Imagery
HTML - Hypertext Markup Language
HTTP - Hypertext Transfer Protocol
IETF - Internet Engineering Task Force
IRI - Internationalized Resource Identifier
ISO - International Organization for Standardization
JSON - JavaScript Object Notation
KML - Keyhole Markup Language
MIME - Multipurpose Internet Mail Extensions
OGC - Open Geospatial Consortium
OWC - OGC Web Services Context
OWS - OGC Web Services
RFC - Request for Comments
UML - Unified Modeling Language
URI - Uniform Resource Identifier
URL - Uniform Resource Locator
WCS - Web Coverage Service
WFS - Web Feature Service
WMS - Web Map Service
WMTS - Web Map Tile Service
WPS - Web Processing Service
XHTML - Extensible Hypertext Markup Language
XML - Extensible Markup Language

5.1 **Data dictionary tables**

This document includes data dictionary tables related to the UML model specified in [OGC 12-080 OWS Context Conceptual Model]. 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.

6. Overview

This clause specifies the links from the encoding to the underlying OWS Context data model. This clause 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 1. Note that these packages map directly to requirement classes.

10

Figure 1 - OWS Context Standard Packages

6.1 JavaScript Object Notation

JavaScript Object Notation (JSON) is a lightweight, text-based, language-independent data interchange format that defines a small set of formatting rules for the portable representation of structured data. JSON is derived from the object literals of JavaScript, as defined in the ECMAScript Programming Language Standard [ECMA-262] and can represent four primitive types (strings, numbers, boolean values, and null) and two structured types (objects and arrays). Even though JSON is based on a subset of the JavaScript Programming Language it is currently well supported by nearly all programming languages, including Java, Python, and C#.

The JSON format is currently described by two competing standards, [RFC7159] and [ECMA-404]. Both standards documents are consistent, but the latter defines mainly the grammatical syntax where the former provides some additional semantic and security points.

6.2 GeoJSON Format Specification

GeoJSON is a format for encoding collections of simple geographical features along with their non-spatial attributes using JSON. GeoJSON consists of a single object representing a geometry, feature, or collection of features. The geometries supported include Point, MultiPoint, LineString, MultiLineString, Polygon, MultiPolygon and Geometry Collections.

GeoJSON was originally defined in 2008 by [GeoJSON] and since 2014 there is an activity to define GeoJSON as an IETF RFC (standards track) [IETF GeoJSON]. The document has now reached the status of Draft RFC 7946. The IETF draft provides additional clarity regarding coordinate order and CRS and complies with the OGC Axis Order Policy Guidance.

11

7. GeoJSON Encoding Specification

This clause specifies the links from the encoding to the underlying OWS Context data model. This clause 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. Note that these packages map directly to requirement classes.
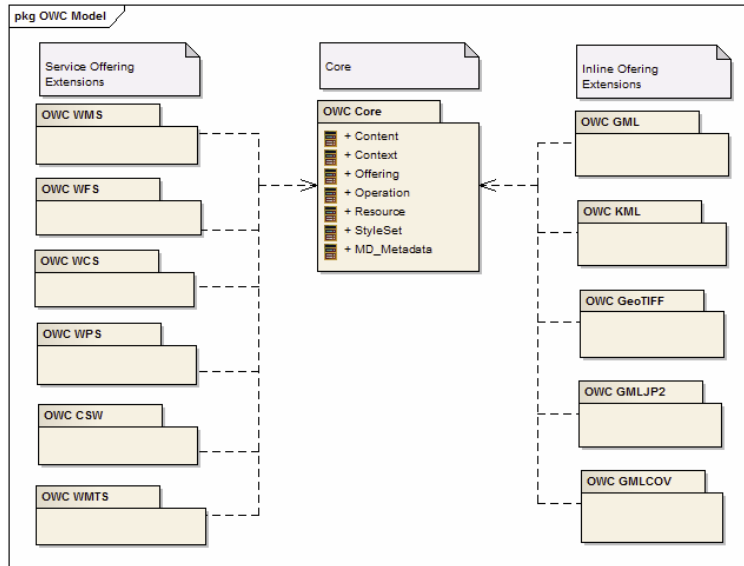
7.1 OWS Core Context GeoJSON Encoding

The GeoJSON object is used in the OWS Context to describe the context document.

Requirements Class	
http://www.opengis.net/spec/owc-geojson/1.0/req/core	
Target type	Token
Dependency	**http://www.opengis.net/spec/owc/1.0/core**
Requirement	**http://www.opengis.net/spec/owc-geojson/1.0/req/geojsonRules** *An OWS Context document encoded in GeoJSON (GeoJSON Context Document) SHALL comply with the rules specified in [IETF GeoJSON]*
Requirement	**http://www.opengis.net/spec/owc-geojson/1.0/req/mime-type** *GeoJSON OWS Context documents SHALL adopt the GeoJSON MIME-type* *application/vnd.geo+json*
Requirement	**http://www.opengis.net/spec/owc-geojson/1.0/req/file-extension** *GeoJSON OWS Context documents using GeoJSON SHALL use the file extension of '.geojson' or '.json'*
Requirement	**http://www.opengis.net/spec/owc-geojson/1.0/req/owc-encoding** *GeoJSON encoded OWS Context documents SHALL comply with the encoding rules given in the section 7.1.1.*

7.1.1 Class OWC:Context

The OWC:Context Class is mapped to a GeoJSON Feature Collection object. The mapping of the OWC:Context Class in the *geojson* object is shown in Table 1.

Table 1 — OWC:Context mapping to *geojson*

Names: Conceptual GeoJSON mapping $_{a,d}$	Definition	Data type and value	Multiplicity and use
`<xz>.type`	Type of geojson object	String type that SHALL have the value "FeatureCollection"	One (mandatory)

12

Names: Conceptual GeoJSON mapping [a,d]	Definition	Data type and value	Multiplicity and use
specReference `<xz>.properties. links.profiles`	Specification Reference (requirements class) identifying that this is an OWC Context document and its version	Array of links profiles (as defined in Table 10 where one element SHALL have the href value "http://www.opengis.net/spec/owc-geojson/1.0/req/core" in this version	One (mandatory)
Language `<xz>.properties. lang`	Language of Context document content	String type, not empty with an RFC-3066 code	One (mandatory)
Id `<xz>.id`	Unambiguous reference to the identification of the Context document (IRI)	String type that SHALL contain a URI value	One [b] (mandatory)
Title `<xz>.properties. title`	Title for the Context document	String type, not empty	One (mandatory)
Abstract `<xz>.properties. subtitle`	Description of the Context document purpose or content	String type, not empty	Zero or one (optional)
updateDate `<xz>.properties. updated`	Date of a creation or update of the Context document	RFC-3339 date [e]	One (mandatory)
author `<xz>.properties. authors.name`	Entity primarily responsible for making the Context document	String type, not empty	Zero or more (optional) [c]
Publisher `<xz>.properties. publisher`	Identifier for the publisher of the Context document	String type, not empty	Zero or one (optional)
creator `<xz>.properties. generator` `<xz>.properties. display`	Tool/application used to create the Context document and its properties	OWC:Creator (as defined in Table 7)	Zero or one (optional)
rights `<xz>.properties. rights`	Information about rights held in and over the Context document	String type, not empty	Zero or one (optional)
areaOfInterest `<xz>.bbox`	Geographic Area of interest of the users of the Context document according to the GeoJSON "bbox" definition	Double type	Zero or 2*n (n is the number of dimensions) (optional)

13

Names: Conceptual GeoJSON mapping [a,d]	Definition	Data type and value	Multiplicity and use
timeIntervalOfInterest `<xz>.date`	Date or range of dates relevant to the resource	String representing a date according to the ISO-8601[f] format	Zero or one (optional)
Keyword `<xz>.properties. categories.term`	Category related to this context document. It MAY have a related code-list that is identified by the scheme attribute	String type, not empty	Zero or more (optional)
resource `<xz>.features`	Resources available on the Context document	Features array element as defined in Section 7.1.2	Zero or more (optional)
contextMetadata `<xz>.properties. links.via`	Reference to a resource from which the present resource is derived (e.g. source of the information)	Array of links via (as defined in Table 10)	Zero or more (optional)
Extension `<xz>.*`	Any other element	Any (outside of the scope of OWS Context)	Zero or more (optional)

[a] This specification assigns no significance to the order of appearance of the child elements of *geojson* object with the exception of member of the *features* array (the actual Resources). The order of the member of the *features* MAY be used to identify the drawing order of the resources. In that case, the first item of the array represents the top most layer (see section 7.1.1.13 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] *geojson* objects MUST contain one or more elements on the *properties.author* array, unless all of the entries of the *features* array contain one or more elements on the *properties.authors* array.

[d] `<xz>` is the name of the *geojson* object that depends on the implementation

[e] RFC 3339 defines a profile of ISO 8601 for use in Internet protocols and standards. It explicitly excludes durations and dates before the common era. The more complex formats such as week numbers and ordinal days are not permitted. https://www.ietf.org/rfc/rfc3339.txt

[f] See http://www.iso.org/iso/home/standards/iso8601.htm

7.1.1.1 specReference

Path: <xz>.properties.links.profiles[]

The value of this element is the OGC standard reference (requirements class) identifying that this is an OWC Context document and its version.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
```

14

```
  "properties" : {
    "links" : {
      "profiles" : [
        "http://www.opengis.net/spec/owc-geojson/1.0/req/core"
        ],
   ...
    },
  "features": [{
   ...
    }]
  }
```

7.1.1.2 language

Path: <xz>.properties.lang

A GeoJSON Context object SHALL have a *lang* element. The format and interpretation of this value must follow the same rules as specified in [XML 1.0 W3C.REC], Section 2.12.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    "lang" : "en",
    ....
    },
  "features": [{
   ...
    }]
  }
```

7.1.1.3 id
Path: <xz>.id

The id element defines a mandatory reference to the identification of the Context document. The content for the id element SHALL be an IRI, as defined by IETF [RFC-3987]. By defining the id element as an "IRI" the use of relative references is excluded and thus the id element SHALL NOT be assumed to convey dereferenceable information. The content of this element SHALL be created in a way that assures uniqueness and follows the recommendations of IETF [RFC-4287] section 4.2.6. The id should be in canonical form, i.e. including the trailing '/' (so avoiding the use of URI like

http://server.com/path and using *http://server.com/path/* instead).

```
{
```

```
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  ....
  "features": [{
    ...
    }]
  }
```

7.1.1.4 title

Path: <xz>.properties.title

This element contains the title of the Context document. This element is mandatory and SHOULD convey a human-readable title.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    "title" : "OWS Context GeoJSON Example",
    ....
    },
  "features": [{
    ...
    }]
  }
```

7.1.1.5 abstract

Path: <xz>.properties.subtitle

This element is optional and contains the description of the Context Document's purpose or content.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    "title" : "OWS Context GeoJSON Example",
    "subtitle" : "This Context document uses WMS and GML",
    ....
    },
  "features": [{
    ...
    }]
  }
```

16

7.1.1.6 updateDate

Path: <xz>.properties.updated

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

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    "title" : "OWS Context GeoJSON Example",
    "updated" : "2012-11-04T17:26:23Z",
    ....
    },
  "features": [{
    ...
    }]
  }
```

7.1.1.7 author

Path: <xz>.properties.authors

This element is optional and indicates the *authors* array of the Context document. This element MAY contain *name* (conveys a human-readable name for the person), *email* (email address for the person) and *uri* (home page for the person) elements.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    "title" : "OWS Context GeoJSON Example",
    "authors" : [{
      "name" : "Joe Doe",
      "email" : "jdoe@some.com",
      "uri" : "http://some.com/jdoe"
      }]
    ....
    },
  "features": [{
    ...
    }]
  }
```

17

7.1.1.8 publisher

Path: <xz>.properties.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.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    "title" : "OWS Context GeoJSON Example",
    "publisher" : "ACME Inc.",
    ....
    },
  "features": [{
    ...
    }]
  }
```

7.1.1.9 creator

Path: <xz>.properties.creator

The element is optional and expresses the entity or agent (e.g. software) responsible for making the Context document.

Example:

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    "title" : "OWS Context GeoJSON Example",
    "creator" : "ACME CSW Server",
    ....
    },
  "features": [{
    ...
    }]
  }
```

7.1.1.10 rights

Path: <xz>properties.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.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    "rights" : "ACME Srl, licensed under a Creative Commons Attribution 3.0
License",
    ....
    },
  "features": [{
    ...
    }]
  }
```

7.1.1.11 areaOfInterest

Path: <xz>.bbox

This element is optional and expresses the geographic area of interest Context document using the GeoJSON "bbox" object. The value of the bbox member SHALL be a 2*n array where n is the number of dimensions represented in the contained geometries, with the lowest values for all axes followed by the highest values. The axes order of a bbox follows the axes order of geometries. In addition, the coordinate reference system for the bbox is assumed to match the coordinate reference system of the GeoJSON object of which it is a member [IETF GeoJSON].

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ....
    },
  "bbox": [100.0, 0.0, 105.0, 1.0],
  "features": [{
    ...
    }]
  }
```

7.1.1.12 timeIntervalOfInterest

Path: <xz>.date

This element is optional and expressed a date or range of dates relevant to the Context document. It can contain the element *start*, *stop* and *instant*. The values of these elements SHALL conform to the "date-time" production of ISO-8601[5]. 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.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    "date": "2012-11-04T00:01:23Z/2012-12-05T17:28:56Z"
    ....
    },
  "features": [{
    ...
    }]
  }
```

7.1.1.13 resource
Path: <xz>.features

The resources of a Context document are mapped by the array elements described below in section 7.1.2.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ....
    },
  "features": [{
    ...
    }]
  }
```

Note: This standard identifies the order of the *features* array element in relation to interpretation of the context document contents. Elements are ordered from highest importance to lowest in the file. In particular in relation to visualization geographically, the first entry in the GeoJSON document is the topmost layer in the display.

---

[5] Note [ISO 8601] time type is used here as this property can contain a point time value or an interval. [IETF 3339] does not support intervals.

7.1.1.14 contextMetadata

Path: <xz>.properties.links.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 *via* element is an array of link objects that contains four elements named *type*, *href*, *title* and *lang*.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...,
    "links" : {
      "via" : [{
       "href" : "http://www.acme.com/collections/algal.xml",
       "type" : "application/xml ",
       "title" : "Algal XML metadata",
       "lang" : "en"
       }]
     ....
    },
  "features": [{
    ...
    }]
  }
```

7.1.1.15 keyword

Path: <xz>.properties.categories

This array is an optional and expresses categories related to this Context document. Keyword MAY have a related code-list that is identified by the scheme attribute. Each item of the category array has one required element, *term* (identifies the category), and two optional elements, *scheme* (identifies the categorization scheme via a URI) and *label* (provides a human-readable label for display). This standard assigns no significance to the order of items in the array.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    "categories" : [{
      "scheme" : "http://www.acme.com/category",
      "term" : "oceansec",
      "label" : "Ocean Integrated Maritime Security"
```

21

```
    }]
    ...
  },
  "features": [{
    ...
    }]
  }
```

7.1.1.16 extension

Any other element can be added to the JSON object as long as they do not clash with the elements names defined within table 1.

7.1.2 Class OWC:Resource

The list of OWC: Resource Class is mapped to an array of GeoJSON Feature objects. The mapping of the OWC:Resource Class in shown in the table below.

Table 2 - OWC:Resource mapping to *feature* element entry

Names: Conceptual GeoJSON mapping [a,e]	Definition	Data type and values	Multiplicity and use
`<xz>.features[i].type`	Type of geojson object	String type that SHALL have the value "Feature"	One (mandatory)
Id `<xz>.features[i].id`	Unambiguous reference to the identification of the Context resource (IRI)	String type that SHALL contain a URI value	One (mandatory)
Title `<xz>.features[i].properties.title`	Title given to the Context resource	String type, not empty	One (mandatory)
abstract `<xz>.features[i].properties.abstract`	Account of the content of the Context resource. The purpose is to provide a generic description of the content in a format understandable by generic readers	String type, not empty	Zero or one (optional)
updateDate `<xz>.features[i].properties.updated`	Date of the last update of the Context resource	String type representing a date according to the RFC-3339 date format	One (mandatory)
author `<xz>.features[i].properties.authors.name`	Entity primarily responsible for making the content of the Context resource	String type, not empty	Zero or more (optional) [b]
publisher `<xz>.features[i].properties.publisher`	Entity responsible for making the Context resource available	String type, not empty	Zero or one (optional)

22

Names: Conceptual GeoJSON mapping [a,e]	Definition	Data type and values	Multiplicity and use
rights `<xz>.features[i].properties.rights`	Information about rights held in and over the Context resource	String type, not empty	Zero or one (optional)
geospatialExtent `<xz>.features[i].geometry`	Spatial extent or scope of the content of the Context resource	GeoJSON *geometry* object	Zero or one (optional)
temporalExtent `<xz>.features[i].properties.date`	Date or range of dates relevant to the Context resource	String representing a date or an interval according to the ISO-8601 format	Zero or one (optional)
contentDescription `<xz>.features[i].properties.links.alternates`	Reference to a description of the Context resource in alternative format	Array of *link* objects (as defined in Table 10)	Zero or more (optional) [c]
Preview `<xz>.features[i].properties.links.previews`	Reference to a quick-look or browse image representing the Context resource	Array of *link* objects (as defined in Table 10). The elements *length* SHOULD be provided	Zero or more (optional)
contentByRef `<xz>.features[i].properties.links.data`	Reference to the location of the data resource described in the Context resource	Array of *link* objects (as defined in Table 10) [d]	Zero or more (optional)
Offering `<xz>.features[i].properties.offering`	Service or inline content offering for the resource targeted at OGC compliant clients	owc:OfferingType, see Table 3	Zero or more (optional)
Active `<xz>.features[i].properties.active`	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 `<xz>.features[i].properties.links.via`	Reference to a resource from which the Context resource is derived (e.g. source of the information)	*Link* object (as defined in Table 10)	Zero or more (optional) [e]
Keyword `<xz>.features[i].properties.categories.term`	Category related to this resource. It MAY have a related code-list that is identified by the scheme attribute	String type, not empty	Zero or more (optional)
minScale Denominator `<xz>.features[i].properties.minscaledenominator`	Minimum scale for the display of the Context resource	Double	Zero or one (optional)

Names: Conceptual GeoJSON mapping [a,e]	Definition	Data type and values	Multiplicity and use
maxScaleDenominator `<xz>.features[i].properties.maxscaledenominator`	Maximum scale for the display of the Context resource	Double	Zero or one (optional)
folder `<xz>.features[i].properties.folder`	Definition of the folder in which the resource is placed	String type, not empty	Zero or one (optional)
extension `<xz>.features[i].properties.*`	Any other element	Any (outside of the scope of OWS Context)	Zero or more (optional)

a   This specification assigns no significance to the order of appearance object elements.
b   The *features* array entries MUST contain one or more elements on the *authors* array, unless the parent GeoJSON object contains at least one element on its *authors* array.
c   A *features* array entry MUST NOT contain more than *alternate* element with the same combination of *type* and *lang* element values
d   Because it describes a resource potentially large in size and might require special handling the *length* and *type* attribute SHOULD be provided.
e   `<xz>` is the name of the geojson object that depends on the implementation

7.1.2.1   id

Path: <xz>.features[i].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 this 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.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/wms/#world_countries",
    ...
    }]
  }
```

24

7.1.2.2 title

Path: <xz>.features[i].properties.title

This element is mandatory and SHALL convey a human-readable title of the Context resource.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/wms/#world_countries",
    "properties" : {
      "title": " Base World Map",
      ...
      },
    ...
    }]
  }
```

7.1.2.3 abstract

Path: <xz>.features[i].properties.abstract

This element is optional and contains the description of the Context resource purpose or content.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/wms/#MERIS",
    "properties" : {
      "abstract": "ENVISAT MERIS Level 1 Reduced Resolution",
      ...
      },
    ...
    }]
  }
```

7.1.2.4 updateDate

Path: <xz>.features[i].properties.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.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/wms/#world_countries",
    "properties" : {
      "updated": "2012-05-10T14:35:00.400Z",
      ...
      },
    ...
    }]
  }
```

7.1.2.5 author

Path: <xz>.features[i].properties.authors[j].name

This element is optional and indicates the *authors* array of the Context resource. It MAY contain *name* (conveys a human-readable name for the person), *email* (email address for the person) and *uri* (home page for the person) elements.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/wms/#world_countries",
    "title": " Base World Map",
    "properties" : {
      "authors" : [{
```

26

```
        "name" : "Joe Doe",
        "email" : "jdoe@some.com",
        "uri" : "http://some.com/jdoe"
        }]
      ...
      },
    ...
    }]
  }
```

7.1.2.6 publisher

Path: <xz>.features[i].properties.publisher

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

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/wms/#world_countries",
    "properties" : {
      "publisher": "ACME Project",
      ...
      },
    ...
    }]
  }
```

7.1.2.7 rights

Path: <xz>.features[i].properties.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

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
```

```
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/wms/#world_countries",
    "properties" : {
      "rights": "ACME Srl, licensed under a Creative Commons Attribution 3.0
License",
      ...
      },
    ...
    }]
  }
```

7.1.2.8 geospatialExtent

Path: <xz>.features[i].geometry

This element is optional and expresses the geographic area of interest of the Context resource according to the GeoJSON *geometry* object.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/wms/#world_countries",
    "geometry": {
      "type" : "Polygon",
      "coordinates" : [[[-2,45],[8,45],[8,55],[-2,55],[-2,45]]]
      },
    "properties" : {
      ...
      },
    ...
    }]
  }
```

7.1.2.9 temporalExtent

Path: <xz>.features[i].properties.date

This element is optional and expresses a date or range of dates relevant to the Context document. It can contain the element *start*, *stop* and *instant*. The values of these elements SHALL conform to the "date-time" production of ISO-8601. An uppercase "T" character

28

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.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/wms/#world_countries",

    "properties" : {
      "date":  "2009-01-23T09:08:56.000Z/2009-01-23T09:14:08.000Z",
      ...
      },
    ...
    }]
  }
```

7.1.2.10 preview

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

Path: <xz>.features[i].properties.links.previews[j].href

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

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/wmts/#algal20090123090856",
    "properties" : {
      "links": {
        "previews" : [{
          "href" : "http://www.acme.com/products/algal20090123090856.png",
          "type" : "image/png",
          "length" : "12321",
          "title" : " Quicklook for the entry 2009-01-23 09:08:56"
          }]
```

29

```
      }
    ...
    },
  ...
  }]
}
```

7.1.2.11 contentDescription

Path: <xz>.features[i].properties.links.alternates[j].href

This element is optional and contains a reference to a description of the Context resource in alternative format.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/wms/#algal20090123090856",
    "properties" : {
      "links": {
       "alternates" : [{
         "href" : "http://www.acme.com/products/algal20090123090856.html",
         "type" : "text/html",
         "title" : "Information for the entry 2009-01-23 09:08:56"
         }]
       }
    ...
    },
  ...
  }]
}
```

7.1.2.12 contentByRef

Path: xz.features[i]. properties.links.data[j].href

This element is optional and 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.

```
{
  "type": "FeatureCollection",
```

30

```
    "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
    "properties" : {
      ...
      },
    "features": [{
      "id": "http://www.acme.eu/geoserver/wms/#algal20090123090856",
      "properties" : {
        "links": {
          "data" : [{
            "href" : "http://www.acme.com/products/algal20090123090856.hdf",
            "type" : "application/x-hdf5",
            "length" : "453123432",
            "title" : "HDF file for the entry 2009-01-23 09:08:56"
            }]
          }
        ...
        },
      ...
      }]
  }
```

7.1.2.13 offering

Path: xz.features[i].properties.offerings[i]

This element is optional and can contain a number of offerings defined by the class OWC:Offering (defined in section 7.1.3 below). This standard assigns no significance to the order of appearance on the *offerings* array.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/wms/#algal20090123090856",
      ...
    "properties" : {
      "offerings" : [{
        "code" : "http://www.opengis.net/spec/owc-geojson/1.0/req/wms",
        ...
        },{
        "code" : "http://www.opengis.net/spec/owc-geojson/1.0/req/gml",
        ...
        }]
      ...
```

31

```
    }]
  }
```

7.1.2.14 active

Path: <xz>.features[i].properties.active

This element optional and is a Boolean value indicating to the client if the Context resource should be displayed by default.

Example:

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/wms/#algal20090123090856",
    "properties" : {
      "active": true,
      ...
      },
    ...
    }]
  }
```

7.1.2.15 resourceMetadata

Path: xz.features[i]. properties.links.via.href

This element is optional and contains a reference to a resource from which the present resource is derived. Any alternative representation of the resource should use the alternative representation shown in 7.1.2.10.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/wms/#algal20090123090856",
```

32

```
    "properties" : {
      "links": {
        "via" : {
          "href" : "http://www.acme.com/products/algal20090123090856.xml",
          "type" : "application/xml",
          "length" : "435",
          "title" : "XML metadata file for the entry 2009-01-23 09:08:56"
          }
        }
      ...
      },
    ...
    }]
  }
```

7.1.2.16 keyword

Path: <xz>.features[i].properties.categories[j].term

This array is optional and expresses a category related to the Context resource. Keyword MAY have a related code-list that is identified by the scheme attribute. Each item of the category array has one required element, *term* (identifies the category), and two optional elements, *scheme* (identifies the categorization scheme via a URI) and *label* (provides a human-readable label for displaying). This standard assigns no significance to the order of items in the array.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    ...
    "properties" : {
      "categories" : [{
        "scheme" : "http://www.acme.com/category",
        "term" : "high_concentration",
        "label" : "High Concentration was detected on this entry"
      },{
        "scheme" : "http://www.earthobservations.org/category",
        "term" : "GEOSSDataCore",
        "label" : "GEOSS Data Collection of Open Resources for Everyone"
      },{
        ...
        }]
      ...
```

33

```
     }]
   }
```

7.1.2.17 minScaleDenominator

Path: <xz>.features[i].properties.minscaledenominator

This element is optional and defines the minimum scale denominator 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 the OGC 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.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/wms/#algal20090123090856",
    "properties" : {
      "minscaledenonimator" : 100.0,
      ...
      },
    ...
    }]
  }
```

7.1.2.18 maxScaleDenominator

Path: <xz>.features[i].properties.maxscaledenominator

This element is optional and defines the maximum scale denominator 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 the OGC 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.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
```

```
      ...
      },
  "features": [{
    "id": "http://www.acme.eu/geoserver/wms/#algal20090123090856",
    "properties" : {
      "maxscaledenominator" : 1000000.0,

      ...
      },
    ...
    }]
  }
```

7.1.2.19 folder

Path: <xz>.features[i].properties.folder

This element is optional and defines the folder name in a folder structure in which the resource is placed.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/wms/#algal20090123090856",
    "properties" : {
      "folder" : "/root/algal",

      ...
      },
    ...
    }]
  }
```

7.1.2.20 extension

Any other element can be added to the JSON object as long as they do not clash with the elements names defined within table 2.

7.1.3 DataType OWC:Offering

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

Table 3 - Definitions of owc:Offering elements

Names: Conceptual JSON mapping [a]	Definition	Data type and values	Multiplicity and use
code `<off>.code`	Code identifying the type of offering	URI A requirement class identifier (URI) for the extension defining the operation. See sections 7.1.9.1 to 7.12	One (mandatory)

operation
`<off>.`
`  operations[k]`
	Array of operations used to invoke the service	owc:OperationType, see Table 4	Zero or more (optional)

content
`<off>.`
`  contents[k]`
	Array of contents (inline or byRef)	owc:ContentType, see Table 5	Zero or more (optional)

styleSet `<off>.styles[k]`	Array of style sets	owc:StyleSetType, see Table 6	Zero or more (optional)
extension `<off>.*`	Any other element	Any (outside of the scope of OWS Context)	Zero or more (optional)
[a] `<off>` is the name of the offering object in the offerings Array `<xz>.features[i].properties.offerings[j]`. `<xz>.` is the name of the geojson object.			

7.1.3.1 code

Path: <xz>.features[i].properties.offerings[j].code

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

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/wms/#algal20090123090856",
      ...
    "properties" : {
      "offerings" : [{
        "code" : "http://www.opengis.net/spec/owc-geojson/1.0/req/wms",
        ...
        },{
        "code" : "http://www.opengis.net/spec/owc-geojson/1.0/req/gml",
        ...
        }]
```

```
      ...
    }]
  }
```

7.1.3.2 operation

Path: <xz>.features[i].properties.offerings[j].operations[k]

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).

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/wms/#algal20090123090856",
      ...
    "properties" : {
      "offerings" : [{
        "code" : "http://www.opengis.net/spec/owc-geojson/1.0/req/wms",
        "operations" : [{
          "code" : "GetCapabilities",
          "href" : "http://www.someserver.com/wrs.cgi?REQUEST=GetCapabilities&
amp;SERVICE=WMS&VERSION=1.1.1"
          }]
        ...
        },{
        "code" : "http://www.opengis.net/spec/owc-geojson/1.0/req/gml",
        ...
        }]
      ...
    }]
  }
}
```

7.1.3.3 content

Path: <xz>.features[i].properties.offerings[j].contents[k]

Defines a content within an offering of the class OWC:Content (see section 7.1.5)

37

7.1.3.4 styleSet

Path: <xz>.features[i].properties.offerings[j].styles[k]

Defines a style within an offering of the OWC:StyleSet (see section 7.1.6 class for further details).

7.1.3.5 extension

Any other element can be added to the JSON object as long as they do not clash with the elements names defined within table 3.

7.1.4 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 operation. As such this element is an array of operations.

Table 4 - Definitions of owc:Operation elements

Names: Conceptual JSON mapping	Definition	Data type and values	Multiplicity and use
code `<op>.code`	Code identifying the type of Operation	String type, not empty[a]	One (mandatory)
method `<op>.method`	Code identifying the HTTP verb type of Operation.	String type, not empty. Example values are GET and POST.	One (mandatory)
type `<op>.type`	MIME type of the expected results	String type, not empty that contains a MIME media type.	Zero or one (optional)
requestURL `<op>.href`	Service Request URL [b]	URL	One (mandatory)
request `<op>.request`	Optional request body content [c]	owc:ContentType, see Table 5	Zero or one (optional)
result `<op>.result`	Optional Result Payload of the operationc	owc:ContentType, see Table 5	Zero or one (optional)
extension `<op>.*`	Any other element	Any (outside of the scope of OWS Context)	Zero or more (optional)

Names: Conceptual JSON mapping	Definition	Data type and values	Multiplicity and use

[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.

[e] `<op>` is the name of the operation object in the operations Array
`<xz>.features[i].properties.offerings[j].operations[k]. <xz>.`is the name of the *geojson* object.

7.1.4.1 code

Path: <xz>.features[i].properties.offerings[j].operations[k].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].

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/wms/#algal20090123090856",
      ...
    "properties" : {
      "offerings" : [{
        "code" : "http://www.opengis.net/spec/owc-geojson/1.0/req/wms",
        "operations" : [{
          "code" : "GetCapabilities",
          "href" : "http://www.someserver.com/wrs.cgi?REQUEST=GetCapabilities&
amp;SERVICE=WMS&VERSION=1.1.1"
          }]
        ...
        },{
        "code" : "http://www.opengis.net/spec/owc-geojson/1.0/req/gml",
        ...
        }]
      ...
    }]
  }
```

7.1.4.2 method

Path: <xz>.features[i].properties.offerings[j].operations[k].method

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

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/wms/#algal20090123090856",
      ...
    "properties" : {
      "offerings" : [{
        "code" : "http://www.opengis.net/spec/owc-geojson/1.0/req/wms",
        "operations" : [{
          "code" : "GetCapabilities",
          "method" : "GET",
          "href" : "http://www.someserver.com/wrs.cgi?REQUEST=GetCapabilities&
amp;SERVICE=WMS&VERSION=1.1.1"
        }]
        ...
        },{
        "code" : "http://www.opengis.net/spec/owc-geojson/1.0/req/gml",
        ...
        }]
      ...
    }]
  }
```

7.1.4.3 type

Path: <xz>.features[i].properties.offerings[j].operations[k].type

"type" defines the MIME-type of the content class.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/csw/oceans",
      ...
    "properties" : {
      "offerings" : [{
        "code" : "http://www.opengis.net/spec/owc-geojson/1.0/req/csw",
```

40

```
      "operations" : [{
        "code" : "GetRecords",
        "type" : "application/xml"
        "method" : "POST",
        "href" : "http://www.someserver.com/wrs.cgi?service=CSW&request=
GetCapabilities&VERSION=2.0.2"
        }]
      }]
    ...
  }]
  }
```

7.1.4.4 requestURL

Path: <xz>.features[i].properties.offerings[j].operations[k].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 an additional *request* element (section 7.1.4.5) may be specified.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/wms/#algal20090123090856",
      ...
    "properties" : {
      "offerings" : [{
        "code" : "http://www.opengis.net/spec/owc-geojson/1.0/req/wms",
        "operations" : [{
          "code" : "GetCapabilities",
          "method" : "GET",
          "href" : "http://www.someserver.com/wrs.cgi?REQUEST=GetCapabilities&
amp;SERVICE=WMS&VERSION=1.1.1"
        }]
      }]
    ...
  }]
  }
```

41

7.1.4.5 request

Path: <xz>.features[i].properties.offerings[j].operations[k].request.content

request is an optional element of the type OWC:Content that captures the request of an operation as it was sent to the server. This can be defined inline or as a reference. For POST and SOAP Requests, an element request with the payload contents may be 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.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/csw/oceans/",
     ...
    "properties" : {
      "offerings" : [{
        "code" : "http://www.opengis.net/spec/owc-geojson/1.0/req/csw",
        "operations" : [{
          "code" : "GetCapabilities",
          "method" : "GET",
          "href" : "http://www.someserver.com/wrs.cgi?service=CSW&request=
GetCapabilities&VERSION=2.0.2"
          },{
          "code" : "GetRecords",
          "type" : "application/xml",
          "method" : "POST",
          "href" : "http://www.someserver.com/wrs.cgi?service=CSW&request=
GetCapabilities&VERSION=2.0.2",
          "request":{
            "type" : "application/xml",
            "content" : "<csw:GetRecords maxRecords=\"10\"
outputFormat=\"application/xml\"
outputSchema=\"http://www.isotc211.org/2005/gmd\" resultType=\"results\"
service=\"CSW\" startPosition=\"1\" version=\"2.0.2\"
xmlns:ogc=\"http://www.opengis.net/ogc\"
xmlns:csw=\"http://www.opengis.net/cat/csw/2.0.2\"><csw:Query
typeNames=\"csw:Record Service Association\"
xmlns:ogc=\"http://www.opengis.net/ogc\"
```

```
xmlns:csw=\"http://www.opengis.net/cat/csw/2.0.2\"><csw:ElementSetName
typeNames=\"csw:Record\"
xmlns:csw=\"http://www.opengis.net/cat/csw/2.0.2\">full</csw:ElementSetName><cs
w:Constraint version=\"1.1.0\" xmlns:ogc=\"http://www.opengis.net/ogc\"
xmlns:csw=\"http://www.opengis.net/cat/csw/2.0.2\"><ogc:Filter
xmlns:ogc=\"http://www.opengis.net/ogc\"><ogc:PropertyIsEqualTo
xmlns:ogc=\"http://www.opengis.net/ogc\"><ogc:PropertyName
xmlns:ogc=\"http://www.opengis.net/ogc\">csw:Record/@id</ogc:PropertyName><ogc:
Literal xmlns:ogc=\"http://www.opengis.net/ogc\">9496276a-4f6e-47c1-94bb-
f604245fac57</ogc:Literal></ogc:PropertyIsEqualTo></ogc:Filter></csw:Constraint
></csw:Query></csw:GetRecords>"
                }
            }]
        }]
      ...
    }]
  }
```

7.1.4.6 result

Path: <xz>.features[i].properties.offerings[j].operations[k].result.content

Result is an optional element of the type OWC:Content that captures the result of an operation as 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 GeoJSON file itself.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/csw/oceans/",
      ...
    "properties" : {
      "offerings" : [{
        "code" : "http://www.opengis.net/spec/owc-geojson/1.0/req/csw",
        "operations" : [{
          "code" : "GetCapabilities",
          "method" : "GET",
          "href" : "http://www.someserver.com/wrs.cgi?service=CSW&request=
GetCapabilities&VERSION=2.0.2"
          },{
          "method" : "POST",
          "code" : "GetRecords",
```

```
            "href" : "http://www.someserver.com/wrs.cgi?",
            "request":{
              "type" : "application/xml",
              "content" : "<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\"
xsi:schemaLocation=\"http://www.opengis.net/cat/csw/2.0.2
http://schemas.opengis.net/csw/2.0.2/CSW-discovery.xsd\"
xmlns:xsi=\"http://www.w3.org/2001/XMLSchema-instance\"
xmlns:gml=\"http://www.opengis.net/gml\"
xmlns:ogc=\"http://www.opengis.net/ogc\"
xmlns:csw=\"http://www.opengis.net/cat/csw/2.0.2\"
xmlns=\"http://www.opengis.net/cat/csw/2.0.2\"><Query typeNames=\"csw:Record\"
xmlns:gml=\"http://www.opengis.net/gml\"
xmlns:ogc=\"http://www.opengis.net/ogc\"
xmlns:csw=\"http://www.opengis.net/cat/csw/2.0.2\"
xmlns=\"http://www.opengis.net/cat/csw/2.0.2\"><ElementSetName
typeNames=\"csw:Record\" xmlns:csw=\"http://www.opengis.net/cat/csw/2.0.2\"
xmlns=\"http://www.opengis.net/cat/csw/2.0.2\">full</ElementSetName><Constraint
version=\"1.1.0\" xmlns:gml=\"http://www.opengis.net/gml\"
xmlns:ogc=\"http://www.opengis.net/ogc\"
xmlns:csw=\"http://www.opengis.net/cat/csw/2.0.2\"
xmlns=\"http://www.opengis.net/cat/csw/2.0.2\"><ogc:Filter
xmlns:gml=\"http://www.opengis.net/gml\"
xmlns:ogc=\"http://www.opengis.net/ogc\"><ogc:And
xmlns:gml=\"http://www.opengis.net/gml\"
xmlns:ogc=\"http://www.opengis.net/ogc\"><ogc:PropertyIsLike escapeChar=\"\\\"
singleChar=\"?\" wildCard=\"*\"
xmlns:ogc=\"http://www.opengis.net/ogc\"><ogc:PropertyName
xmlns:ogc=\"http://www.opengis.net/ogc\">dc:title</ogc:PropertyName><ogc:Litera
l
xmlns:ogc=\"http://www.opengis.net/ogc\">*Elevation*</ogc:Literal></ogc:Propert
yIsLike><ogc:Intersects xmlns:gml=\"http://www.opengis.net/gml\"
xmlns:ogc=\"http://www.opengis.net/ogc\"><ogc:PropertyName
xmlns:ogc=\"http://www.opengis.net/ogc\">ows:BoundingBox</ogc:PropertyName><gml
:Envelope xmlns:gml=\"http://www.opengis.net/gml\"><gml:lowerCorner
xmlns:gml=\"http://www.opengis.net/gml\">14.05
46.46</gml:lowerCorner><gml:upperCorner
xmlns:gml=\"http://www.opengis.net/gml\">17.24
48.42</gml:upperCorner></gml:Envelope></ogc:Intersects></ogc:And></ogc:Filter><
/Constraint></Query></GetRecords>"},
            "result":{
              "type" : "application/xml",
              "content" : "<csw:Record
xsi:schemaLocation=\"http://www.opengis.net/cat/csw/2.0.2
http://schemas.opengis.net/csw/2.0.2/record.xsd\"
xmlns:xsi=\"http://www.w3.org/2001/XMLSchema-instance\"
```

```
xmlns:ows=\"http://www.opengis.net/ows\"
xmlns:dct=\"http://purl.org/dc/terms/\"
xmlns:dc=\"http://purl.org/dc/elements/1.1/\"
xmlns:csw=\"http://www.opengis.net/cat/csw/2.0.2\"><dc:creator
xmlns:dc=\"http://purl.org/dc/elements/1.1/\">U.S. Geological
Survey</dc:creator><dc:contributor
xmlns:dc=\"http://purl.org/dc/elements/1.1/\">State of
Texas</dc:contributor><dc:publisher
xmlns:dc=\"http://purl.org/dc/elements/1.1/\">U.S. Geological
Survey</dc:publisher><dc:subject
xmlns:dc=\"http://purl.org/dc/elements/1.1/\">Elevation, Hypsography, and
Contours</dc:subject><dc:subject
xmlns:dc=\"http://purl.org/dc/elements/1.1/\">elevation</dc:subject><dct:abstra
ct xmlns:dct=\"http://purl.org/dc/terms/\">Elevation data collected for the
National Elevation Dataset (NED) based on 30m horizontal and 15m vertical
accuracy.</dct:abstract><dc:identifier
xmlns:dc=\"http://purl.org/dc/elements/1.1/\">ac522ef2-89a6-11db-91b1-
7eea55d89593</dc:identifier><dc:relation
xmlns:dc=\"http://purl.org/dc/elements/1.1/\">OfferedBy</dc:relation><dc:source
xmlns:dc=\"http://purl.org/dc/elements/1.1/\">dd1b2ce7-0722-4642-8cd4-
6f885f132777</dc:source><dc:rights
xmlns:dc=\"http://purl.org/dc/elements/1.1/\">Copyright © 2004, State of
Texas</dc:rights><dc:type
xmlns:dc=\"http://purl.org/dc/elements/1.1/\">Service</dc:type><dc:title
xmlns:dc=\"http://purl.org/dc/elements/1.1/\">National Elevation Mapping
Service for Texas</dc:title><dct:modified
xmlns:dct=\"http://purl.org/dc/terms/\">2004-03-01</dct:modified><dc:language
xmlns:dc=\"http://purl.org/dc/elements/1.1/\">en</dc:language><ows:BoundingBox
xmlns:ows=\"http://www.opengis.net/ows\"><ows:LowerCorner
xmlns:ows=\"http://www.opengis.net/ows\">-108.44
28.229</ows:LowerCorner><ows:UpperCorner
xmlns:ows=\"http://www.opengis.net/ows\">-96.223
34.353</ows:UpperCorner></ows:BoundingBox></csw:Record>"}
        }]
      }]
    ...
  }]
}
```

7.1.4.7 extension

Any other element can be added to the JSON object as long as they do not clash with the elements names defined within table 4.

45

7.1.5 DataType OWC:Content

This class defines a generic container for any content. It is the class defining the array elements of the objects *offerings[i].contents[j]*, *offerings[i].operations[j].request*, *offerings[i].operations[j].result* and *offerings[j].styles[k].content*

elements

Table 5 - Definitions of owc:Content elements

Names: Conceptual JSON mapping[a]	Definition	Data type and values	Multiplicity and use
type `<cont>.type`	MIME type of the Content	String type, not empty that contains a MIME media type.	One (mandatory)
URL `<cont>.href`	URL of the Content	URL	Zero or one (optional) [a]
title `<cont>.title`	Title of the Content	String type, not empty	Zero or one (optional)
content `<cont>.content`	In-line content for the Content element	String type, not empty that can contain any text encoded media type	Zero or one (optional) [a]
extension `<cont>.*`	Any other element	Any (outside of the scope of OWS Context)	Zero or more (optional)

[a] If the "href" attribute is present, the element content SHALL be empty. If "href" is not provided, content SHALL be provided.
[b] `<cont>` is the name of the content that can be:
 `<xz>.features[i].properties.offerings[i].contents[j],`
 `<xz>.features[i].properties.offerings[i].operations[j].request,`
 `<xz>.features[i].properties.offerings[i].operations[j].result and`
 `<xz>.features[i].properties.offerings[j].styles[k].content`
 (`<xz>.`is the name of the geojson object)			

7.1.5.1 type

Path: <xz>.features[i].properties.offerings[j].operations[k].result.type

Path: <xz>.features[i].properties.offerings[j].operations[k].request.type

Path: <xz>.features[i].properties.offerings[j].contents[k].type

Path: <xz>.features[i].properties.offerings[j].styles[k].content.type

It defines the MIME-type of the content class.

46

7.1.5.2 URL

Path: <xz>.features[i].properties.offerings[j].operations[k].result.href

Path: <xz>.features[i].properties.offerings[j].operations[k].request.href

Path: <xz>.features[i].properties.offerings[j].contents[k].href

Path: <xz>.features[i].properties.offerings[j].styles[k].content.href7

"URL" provides the path to the content. This element 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.

7.1.5.3 content

Path: <xz>.features[i].properties.offerings[j].operations[k].result.content

Path: <xz>.features[i].properties.offerings[j].operations[k].request.content

Path: <xz>.features[i].properties.offerings[j].contents[k].content

Path: <xz>.features[i].properties.offerings[j].styles[k].content.content

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

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/gml/draw20090123090856",
      ...
    "properties" : {
      "offerings" : [{
        "code" : "http://www.opengis.net/spec/owc-geojson/1.0/req/gml",
         "contents" : [{
           "type" : "application/gml+xml",
           "content" : " <my_srf:RoadCollection gml:id=\"ID_ROADS1\"
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/gml/1 road.xsd\"
xmlns:xsi=\"http://www.w3.org/2001/XMLSchema-instance\"
xmlns:gml=\"http://www.opengis.net/gml/3.2\"
xmlns:my_srf=\"http://www.opengis.net/owc/1.0/examples/example1\"><my_srf:road
><my_srf:Road gml:id=\"ID_ROAD1\"><my_srf:position><gml:LineString
```

47

```
gml:id=\"ID_LINEROAD1\">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:road></my_srf:RoadCollect
ion>"
            }]
        }]
    ...
    }]
  }
```

7.1.5.4 extension

Any other element can be added to the JSON object as long as they do not clash with the elements names defined within table 5.

7.1.6 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 JSON mapping [a]	Definition	Data type and values	Multiplicity and use
name `<style>.name`	Unique name of the styleSet within a given offering	String type, not empty	One (mandatory)
title `<style>.title`	Human Readable title of the styleSet within a given offering	String type, not empty	One (mandatory)
abstract `<style>.abstract`	Description of the styleSet	String type, not empty	Zero or one (optional)
default `<style>.default`	Whether this styleSet is the one to be defined by default	Boolean type. Possible values are 'true' or 'false'. Default value is 'false'	Zero or one (optional)
legendURL `<style>.legendURL`	URL of a legend image for the styleSet	URL	Zero or one (optional)
content `<style>.content`	The inline or a external reference to the styleSet definition	owc:ContentType, see Table 5	Zero or one (optional)
extension `<style>.*`	Any other element	Any (outside of the scope of OWS Context)	Zero or more (optional)
[a] `<style>` is the name of the style object in the styles array `<xz>.features[i].properties.offerings[j].styles[k]` `<xz>.` is the name of the *geojson* object.			

The intention of the StyleSet is that the client could visualize the resource using for example the WMS GetMap request (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.

7.1.6.1 name

Path: <xz>.features[i].properties.offerings[j].styles[k].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.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/gml/draw20090123090856",
      ...
    "properties" : {
      "offerings" : [{
        "code" : "http://www.opengis.net/spec/owc-geojson/1.0/req/gml",
        "contents" : [{
            ...
        }]
        "styles" : [{
            "name": "Simple Line",
                ...
        }]
      ...
    }]
  }
```

7.1.6.2 title

Path: <xz>.features[i].properties.offerings[j].styles[k].title

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

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
```

49

```
  "features": [{
    "id": "http://www.acme.eu/geoserver/gml/draw20090123090856",
      ...
    "properties" : {
      "offerings" : [{
        "code" : "http://www.opengis.net/spec/owc-geojson/1.0/req/gml",
        "contents" : [{
            ...
        }]
        "styles" : [{
            "title": "SLD Cook Book: Simple Line",
                ...
        }]
      ...
    }]
  }
```

7.1.6.3 abstract

Path: <xz>.features[i].properties.offerings[j].styles[k].abstract

The abstract provides a textual description of the style.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/gml/draw20090123090856/",
      ...
    "properties" : {
      "offerings" : [{
        "code" : "http://www.opengis.net/spec/owc-geojson/1.0/req/gml",
        "contents" : [{
            ...
        }]
        "styles" : [{
            "abstract": "SLD Cook Book: Simple Line extracted from
http://docs.geoserver.org/latest/en/user/_downloads/line_simpleline.sld",
                ...
        }]
      ...
    }]
  }
```

7.1.6.4 default

Path: <xz>.features[i].properties.offerings[j].styles[k].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 request 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.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/gml/draw20090123090856",
      ...
    "properties" : {
      "offerings" : [{
        "code" : "http://www.opengis.net/spec/owc-geojson/1.0/req/gml",
        "contents" : [{
            ...
        }]
        "styles" : [{
            "default": true,
              ...
          }
        }]
      ...
    }]
  }
```

7.1.6.5 legendURL

Path: <xz>.features[i].properties.offerings[j].styles[k].legendURL

The legend URL specifies a link to a legend image.

Example:

```
{
  "type": "FeatureCollection",
```

51

```
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/gml/draw20090123090856/",
     ...
    "properties" : {
      "offerings" : [{
        "code" : "http://www.opengis.net/spec/owc-geojson/1.0/req/gml",
        "contents" : [{
            ...
        }]
        "styles" : [{
            "legendURL":
"http://docs.geoserver.org/latest/en/user/_images/line_simpleline1.png",
            ...
        }]
      ...
    }]
  }
```

7.1.6.6 Content

Path: <xz>.features[i].properties.offerings[j].styles[k].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.

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/gml/draw20090123090856/",
     ...
    "properties" : {
      "offerings" : [{
        "code" : "http://www.opengis.net/spec/owc-geojson/1.0/req/gml",
        "contents" : [{
            ...
        }]
        "styles" : [{
```

```
            "name": "Simple Line Linked",
            "title": "SLD Cook Book: Simple Line Linked",
            "content": {
                "type": "application/vnd.ogc.sld+xml",
                "href":
"http://docs.geoserver.org/latest/en/user/_downloads/line_simpleline.sld"
            }
        }]
    ...
    }]
  }
```

or an inline content as

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...
    },
  "features": [{
    "id": "http://www.acme.eu/geoserver/gml/draw20090123090856/",
    ...
    "properties" : {
      "offerings" : [{
        "code" : "http://www.opengis.net/spec/owc-geojson/1.0/req/gml",
        "contents" : [{
            "type" : "application/gml+xml",
            "content" : " <my_srf:RoadCollection gml:id=\"ID_ROADS1\"
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/gml/1 road.xsd\"
xmlns:xsi=\"http://www.w3.org/2001/XMLSchema-instance\"
xmlns:gml=\"http://www.opengis.net/gml/3.2\"
xmlns:my_srf=\"http://www.opengis.net/owc/1.0/examples/example1\"><my_srf:road
><my_srf:Road gml:id=\"ID_ROAD1\"><my_srf:position><gml:LineString
gml:id=\"ID_LINEROAD1\">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:road></my_srf:RoadCollect
ion>"
        }]
      }]
      "styles" : [{
          "name": "Simple Line</owc:name",
          "title": "SLD Cook Book: Simple Line",
          "content": {
              "type": "application/vnd.ogc.sld+xml",
              "content": "<StyledLayerDescriptor version=\"1.0.0\"
xmlns=\"http://www.opengis.net/sld\" xmlns:ogc=\"http://www.opengis.net/ogc\"
```

53

```
xmlns:xlink=\"http://www.w3.org/1999/xlink\"
xmlns:xsi=\"http://www.w3.org/2001/XMLSchema-instance\"
xsi:schemaLocation=\"http://www.opengis.net/sld
../../../sld/1.1/StyledLayerDescriptor.xsd\"><NamedLayer><Name>Simple
Line</Name><UserStyle><Title>SLD Cook Book: Simple
Line</Title><FeatureTypeStyle><Rule><LineSymbolizer><Stroke><CssParameter
name=\"stroke\">#000000</CssParameter><CssParameter name=\"stroke-
width\">3</CssParameter></Stroke></LineSymbolizer></Rule></FeatureTypeStyle></U
serStyle></NamedLayer></StyledLayerDescriptor>"
            }
        }]
      ...
    }]
  }
```

7.1.6.7 extension

Any other element can be added to the JSON object as long as they do not clash with the elements names defined within table 6.

7.1.7 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 JSON mapping	Definition	Data type and values	Multiplicity and use
creatorApplication `<xz>.properties. 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 `<xz>.properties. 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 one (optional)
Extension	Any encoding should allow the user to extend the Creator information to include custom items	n/a	Zero or more (optional)

7.1.7.1 creatorApplication

The name, reference and version of the creator application used to create the context document. Complex type defined in Table 8.

54

7.1.7.2 creatorDisplay

The properties of the creator display (Complex type as defined in Table 9).

7.1.7.3 extension

Any other element can be added to the JSON object as long as they do not clash with the elements names defined within table 7.

7.1.8 DataType OWC:Creator/OWC:CreatorApplication

This datatype class provides place to encode information related to the application responsible to the creation of the context document (not necessarily the content described).

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

Names: Conceptual JSON mapping	Definition	Data type and values	Multiplicity and use
Title `<xz>.properties. generator.title`	Title or name of the application	String	Zero or one (optional)
uri `<xz>.properties. generator.uri`	URI describing the creator application	URI	Zero or one (optional)
Version `<xz>.properties. generator. version`	Version of the creator application	String	Zero or one (optional)

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...,
    "generator" : {
        "title": "Web Enterprise Suite",
        "uri": "http://www.somewebside.org/WebEnterpriseSuite"
    },
    ....
  },
  "features": [{
    ...
    }]
  }
```

55

7.1.8.1 title

Path: <xz>.properties.generator.title

The content of this element SHALL be a human-readable text (character string).

7.1.8.2 uri

Path: <xz>.properties.generator.uri

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

7.1.8.3 version

Path: <xz>.properties.generator.version

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

7.1.9 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 should not expect clients to use them to reproduce the original graphical display. It is not intended that Client applications use the information in this class to define the size of their own graphical interface; the values present on this class are to be considered as creator application metadata. In addition, the presence of this class in a Context document should not be considered an indication of any type of limitation or constraint of the Context resources (*features* elements). The mapping between the OWC:CreatorDisplay Class and JSON encoding is shown in the table below.

Table 9 - Definitions of owc:CreatorDisplay elements

Names: Conceptual JSON mapping	Definition	Data type and values	Multiplicity and use

pixelWidth
`<xz>.properties.`
`  display.pixelWidth`
	Width measured in pixels of the display showing the Area of Interest	Positive Integer type	Zero or one (optional)

pixelHeight
`<xz>.properties.disp`
`  lay.pixelHeight`
	Width measured in pixels of the display showing by the Area of Interest	Positive Integer type	Zero or one (optional)

56

Names: Conceptual JSON mapping	Definition	Data type and values	Multiplicity and use
mmPerPixel `<xz>.properties.disp lay.mmPerPixel`	The size of a pixel of the display in milimeters (combined with the previous ones allows for the real display size to be calculated)	Double type	Zero or one (optional)
extension `<xz>.properties.disp lay.*`	Any other element	Any	Zero or more (optional)

```
{
  "type": "FeatureCollection",
  "id": "http://www.opengis.net/owc/1.0/examples/geojson/1/",
  "properties" : {
    ...,
    "display": [{
        "pixelWidth": 600,
        "pixelHeight": 400,
        "mmPerPixel": 0.28
    }],
    ....
  },
  "features": [{
    ...
    }]
  }
```

7.1.9.1 pixelWidth

Path: <xz>.properties.display.pixelWidth

The content of this element is an integer number representing the width of the display showing the Area of Interest.

7.1.9.2 pixelHeight

Path: <xz>.properties.display.pixelHeight

The content of this element is an integer number representing the height of the display showing the Area of Interest.

7.1.9.3 mmPerPixel

Path: <xz>.properties.display.mmPerPixel

The content of this element is a floating point number representing the size of a pixel of the display in milimeters.

7.1.10 DataType links

The links class provides place to encode link relations in a OWS Context document. This class is used in several places in the model and mimics the Atom link element and maps it into JSON.

Table 10 - Definitions of links elements

JSON Name:	Definition	Data type and values	Multiplicity and use
`<xz>.href`	URI describing the related resource	URI	One (mandatory)
`<xz>.type`	Hint about the type of the representation that is expected to be returned when the value of the href attribute is dereferenced	String type, not empty that contains a media type.	Zero or one (optional)
`<xz>.lang`	Language of the resource pointed to by the href attribute	String type, not empty with an RFC-3066 code[6]	Zero or one (optional)
`<xz>.title`	Human-readable information about the link	String type, not empty	Zero or one (optional)
`<xz>.length`	Hint about the content length in octets of the representation returned when the IRI in the href attribute is mapped to a URI and dereferenced.	Integer type, non-negative	Zero or one (optional)
extension `<xz>.*`	Any other element	Any	Zero or more (optional)

```
{
    ...,
    {
        "href" : "http://www.acme.com/collections/algal.xml",
        "type" : "application/xml",
        "title" : "Algal XML metadata",
        "lang" : "en"
    }
    ....
}
```

---

[6] https://www.ietf.org/rfc/rfc3066.txt

7.1.10.1 href

Path: <xz>.href

Reference to a resource related to this one.

7.1.10.2 type

Path: <xz>.type

Expected MIME type of resource pointed by the href.

7.1.10.3 lang

Path: <xz>.lang

Expected language of resource pointed by the href.

7.1.10.4 title

Path: <xz>.title

This element contains the title of resource pointed by the href. This element conveys a human-readable title.

7.1.10.5 length

Path: <xz>.length

Expected length of resource pointed by the href.

7.2 GeoJSON WMS Offering

Requirement Class: http://www.opengis.net/spec/owc-geojson/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-geojson/1.0/req/core
Requirement id:	http://www.opengis.net/spec/owc-geojson/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)

7.3 GeoJSON WFS Offering

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

Scope:	All requirements in this subsection relate to the above requirement class)
Dependencies:	http://www.opengis.net/spec/owc/1.0/req/wms , http://www.opengis.net/spec/owc-geojson/1.0/req/core
Requirement id:	http://www.opengis.net/spec/owc-geojson/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)

7.4 GeoJSON WCS Offering

Requirement Class:	http://www.opengis.net/spec/owc-geojson/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-geojson/1.0/req/core
Requirement id:	http://www.opengis.net/spec/owc-geojson/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)

7.5 GeoJSON WPS Offering

Requirement Class:	http://www.opengis.net/spec/owc-geojson/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-geojson/1.0/req/core
Requirement id:	http://www.opengis.net/spec/owc-geojson/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)

7.6 GeoJSON CSW Offering

Requirement Class:	http://www.opengis.net/spec/owc-geojson/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-geojson/1.0/req/core
Requirement id:	http://www.opengis.net/spec/owc-geojson/1.0/req/csw/content

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

7.7 GeoJSON WMTS Offering

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

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

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

7.8 GeoJSON GML Offering

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

Requirement id: http://www.opengis.net/spec/owc-geojson/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)

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

7.9 GeoJSON KML Offering

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

Requirement id: http://www.opengis.net/spec/owc-geojson/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)

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

7.10 GeoJSON GeoTIFF Offering

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

Requirement id: http://www.opengis.net/spec/owc-geojson/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)

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

7.11 GeoJSON GMLJP2 Offering

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

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

Dependencies: http://www.opengis.net/spec/owc/1.0/req/gmljp2 ,
                           http://www.opengis.net/spec/owc-geojson/1.0/req/core

Requirement id: http://www.opengis.net/spec/owc-geojson/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)

7.12 GeoJSON GMLCOV Offering

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

Requirement id: http://www.opengis.net/spec/owc-geojson/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)

8. Media Types for any data encoding(s)

N/A

Annex A: Conformance Class Abstract Test Suite (Normative)

This conformance test is targeted at the GeoJSON 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-geojson/1.0/conf/core. Tests identifiers below are shown in full but all relate to http://www.opengis.net/spec/owc-geojson/1.0/core.

Fully Implements the Rules of GeoJSON

> **URI: http://www.opengis.net/spec/owc-geojson/1.0/req/geojsonRules**

> **Test Purpose:**

>> **To test requirement** http://www.opengis.net/spec/owc-geojson/1.0/conf/geojsonRules

> **Test Method:**

>> Validate the JSON encoded owc:context document is compliant with the GeoJSON specification by using a GeoJSON validator.

Uses the specified MimeType

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

> **Test Purpose:**

>> **To test requirement** http://www.opengis.net/spec/owc-geojson/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-geojson/1.0/req/fileExtension**

> **Test Purpose:**

Copyright © 2017 Open Geospatial Consortium

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

Test Method:

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

Encoding of Content is compliant with OWS Context Content

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

Test Purpose:

To test requirement http://www.opengis.net/spec/owc-geojson/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-geojson/1.0/conf/wms

Test Purpose:

To test requirement http://www.opengis.net/spec/owc-geojson/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-geojson/1.0/conf/wfs

Test Purpose:

To test requirement http://www.opengis.net/spec/owc-geojson/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-geojson/1.0/conf/wcs

Test Purpose:

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

Test Method:

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

A.5   Conformance Test Class: wps

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

Test Purpose:

To test requirement http://www.opengis.net/spec/owc-geojson/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-geojson/1.0/conf/csw

Test Purpose:

To test requirement http://www.opengis.net/spec/owc-geojson/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-geojson/1.0/conf/wmts

Test Purpose:

To test requirement http://www.opengis.net/spec/owc-geojson/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-geojson/1.0/conf/gml

Test Purpose:

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

Test Method:

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

A.9   Conformance Test Class: kml

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

Test Purpose:

To test requirement http://www.opengis.net/spec/owc-geojson/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-geojson/1.0/cof /geotiff

Test Purpose:

To test requirement http://www.opengis.net/spec/owc-geojson/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-geojson/1.0/conf/gmljp2

Test Purpose:

To test requirement http://www.opengis.net/spec/owc-geojson/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-geojson/1.0/conf/gmlcov

Test Purpose:

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

Test Method:

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

Annex B: Examples

A.1 wmts.json

```json
{
   "type": "FeatureCollection",
   "id": "http://www.opengis.net/owc/1.0/examples/wmts/",
   "properties":
   {
      "lang": "en",
      "title": "WMTS Example",
      "subtitle": "WMTS Example",
      "updated": "2012-11-04T17:26:23Z",
      "authors": [{
            "name": "Joan Masó"
      }],
      "links":
      {
         "profiles": [{
         "href": "http://www.opengis.net/spec/owc-geojson/1.0/req/core",
            "title": "This file is compliant with version 1.0 of OGC
Context"
      }]
      }
   },
   "features":
   [
      {
         "type": "Feature",
      "id": "http://www.opengis.net/spec/owc-geojson/1.0/req/wmts/1/",
         "geometry":
         {
            "type": "Polygon",
            "coordinates":
[[[0.077448,41.03779],[0.077448,42.04698],[1.640905,42.04698],
[1.640905,41.03779],[0.077448,41.03779]]]
         },
         "properties":
         {
            "title": "WMTS Example",
            "abstract": "WMTS Example in KVP and REST",
            "updated": "2011-11-01T00:00:00Z",
            "content": "WMTS example",
            "offerings":
            [
               {
                  "code":
                  "http://www.opengis.net/spec/owc-geojson/1.0/req/wmts",
                  "operations":
                  [
                     {
                        "code": "GetCapabilities",
                        "method": "GET",
                        "type": "application/xml",
                        "href":
```

69

```
"http://www.opengis.uab.es/cgi-
bin/ICCTiled/MiraMon.cgi?REQUEST=GetCapabilities&SERVICE=WMTS"
                    },
                    {
                        "code": "ServiceMetadata",
                        "method": "GET",
                        "type": "application/xml",
                        "href":
"http://www.opengis.uab.es/SITiled/ICC/1.0.0/WMTSCapabilities.xml"
                    },
                    {
                        "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&for
mat=image/jpeg&layer=Topo250k_Vers5_ICC&TileMatrixSet=Cat_topo250k_v5_E
PSG23031&TileMatrix=200m&TileRow=1&TileCol=0"
                    },
                    {
                        "code": "Tile",
                        "method": "GET",
                        "type": "image/jpeg",
                        "href":
"http://www.opengis.uab.es/SITiled/ICC/Topo250k_Vers5_ICC/default/Cat_t
opo250k_v5_EPSG23031/200m/1/0.jpg"
                    }
                ]
            }
        ]
    }
}
```

Annex C: Schemas and Examples

The schemas and examples are provided in the OGC schema repository:

http://schemas.opengis.net/owc/1.0

Annex D: Revision history

Date	Release	Author	Paragraph modified	Description