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OGC Naming Authority – Procedures

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i. Preface

This document describes the procedures used by the OGC Naming Authority for the assignment and registration of OGC names.

ii. Document terms and definitions

This document uses the normative terms (SHALL, SHOULD, etc) defined in Subclause 5.3 of [OGC 06-121r3], 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 comply with this specification.

Name production rules in this document are expressed using ABNF (IETF RFC 5324).

iii. Revision History

Date	Internal version	Editor	Sections modified	Description
4 Dec 2008	0.1.0 Draft	Simon Cox	N/A	Initialised Draft Document.
11 Dec 2008	0.1.0 Draft	Arliss Whiteside	Cover, ii, footers, miscellaneous	Corrected format and inserted comments
13 March 2009	0.2 Draft	Simon Cox	2, miscellaneous	Accepted most of Arliss comments; completed normative references, fixed EBNF
1 April 2009		Simon Cox	All	Minor tweaks and corrections for consistency with the other OGC-NA documents.
23 April 2009		Simon Cox	3	Replaced EBNF with ABNF
22 May 2009	0.2	Simon Cox	3.2, 3.3, 5	Responses to comments received during vote to approve: <ol style="list-style-type: none"> 1. NTS are policy documents 2. Note about register creation 3. remove ‘format’ from URI request syntax example 4. clarify resolver syntax and operation

January 2010	1.1.0	Simon Cox	All	ABNF revised to match RFC 3986; http URI syntax made explicit Added historical note about URNs vs URIs.
February 2010	1.1.1	Simon Cox	3.4, 5	Added 'ResourceSpecificPath' to requirements for a NTS Added note pointing out that URN → URL conversion rule matches the http URI production rule Elaborated submission process to allow a resource representation (to be hosted by OGC) as an alternative to a resource locator

OGC Naming Authority - procedures

1 Scope

The OGC Naming Authority (OGC-NA) controls the assignment of OGC Names to resources of interest in geographic information infrastructures. In the terminology defined in ISO 19135, OGC-NA is the Control Body for the register of OGC Names. This document describes the framework of documents, registers and other resources required for OGC-NA to execute that role.

The scope of the resources that may be identified with OGC Names is indicated by the set of items in the register <http://www.opengis.net/register/ogc-na/type>.

2 Normative references:

Cool URIs for the Semantic Web, W3C Interest Group Note 03 December 2008

<http://www.w3.org/TR/cooluris/>

IETF RFC 2141 URN Syntax (1997) <http://tools.ietf.org/html/rfc2141>

IETF RFC 2616 Hypertext Transfer Protocol -- HTTP/1.1 (1999)

<http://tools.ietf.org/html/rfc2616>

IETF RFC 3986 Uniform Resource Identifier (URI): Generic Syntax (2005)

<http://tools.ietf.org/html/rfc3986>

IETF RFC 4395 Guidelines and Registration Procedures for New URI Schemes (2006)

<http://tools.ietf.org/html/rfc4395>

IETF RFC 5141 A Uniform Resource Name (URN) Namespace for the International Organization for Standardization (ISO) (2008) <http://tools.ietf.org/html/rfc5141>

IETF RFC 5165 A Uniform Resource Name (URN) Namespace for the Open Geospatial Consortium (OGC) (2008) <http://tools.ietf.org/html/rfc5165>

IETF RFC 5234 Augmented BNF for Syntax Specifications: ABNF (2008)

<http://tools.ietf.org/html/rfc5234>

ISO 19135:2005 Geographic information—Procedures for item registration

3 Naming rule

3.1 OGC name schemes

Two URI schemes [IETF RFC 3986] are defined by OGC to provide persistent names for resources of interest in geographic information infrastructures. A http URI scheme [IETF RFC 4395] provides identifiers which may be resolved to resource representations using the standard web infrastructure, in particular the DNS system. A URN scheme [IETF RFC 2141] provides equivalent identifiers which do not imply location or a specific resolution mechanism.

Http URI and URN schemes use different delimiters for the elements within the identifier ('/' and ':' respectively). Rules for the names that allow either form to be composed from the same elements requires that the elements use a reduced character set which excludes both of these delimiters.

Note: The URN scheme is essentially identical to that described in version 1 of this policy. The ABNF description below has been revised for consistency with [IETF RFC 3986] and to accommodate the URN/URI consideration above. Although the rule here excludes some identifier forms that may have previously been valid, in practice no assignments were made using the characters now excluded so there is no backward compatibility problem.

The following ABNF adapted from [IETF RFC 3986] provides some basic definitions required in the rest of this document, and in other OGC-NA policy documents:

```

segment      = *pchar
segment-nc   = *pchar-nc
segment-nz   = 1*pchar
segment-nz-nc = 1*pchar-nc
pchar       = unreserved / pct-encoded / sub-delims / ":" / "@"
pchar-nc    = unreserved / pct-encoded / sub-delims / "@"
pct-encoded = "%" HEXDIG HEXDIG
unreserved  = ALPHA / DIGIT / "-" / "." / "_" / "~"
reserved    = gen-delims / sub-delims
gen-delims  = ":" / "/" / "?" / "#" / "[" / "]" / "@"
sub-delims  = "!" / "$" / "&" / "'" / "(" / ")"
            / "*" / "+" / "," / ";" / "="

```

3.2 Use of name structure

The naming schemes defined by OGC-NA in this and related documents have a regular structure. The structure is primarily to provide the name provider (OGC) with a mechanism to govern the names and ensure uniqueness. While name users (clients) might attempt to infer other names based on the structure, the OGC-NA registers are the normative source of OGC names.

3.3 http URI scheme

The generic syntax for OGC http URIs is

```
URI = "http://www.opengis.net/" OGCResource "/" ResourceSpecificPath
```

3.4 URN scheme

The generic syntax for OGC URNs is [IETF RFC 5165]

```
URN = "urn:ogc:" OGCResource ":" ResourceSpecificString
```

3.5 Resource type and Name Type Specification

OGCResource is a token that indicates the resource type, taken from the register <http://www.opengis.net/register/ogc-na/type>.

The special resource types "Resource type", "OGC-NA register" and "Name authority" are defined in this document. Each other resource type is defined in an OGC-NA policy document known as a "Name Type Specification" (NTS).

An OGC name for a resource type shall be produced using the following rule:

```
OGCResource      = "type"  
ResourceSpecificPath = "ogc-na" "/" type  
ResourceSpecificString = "OGC-NA" ":" type  
type              = segment-nz-nc  
                  ; a token from the register of OGC resource types1
```

EXAMPLE 1: <http://www.opengis.net/type/ogc-na/def>

EXAMPLE 2: urn:ogc:type:OGC-NA:def

Changes to the register of resource types (addition, deletion, supercession) shall be by submission of a proposed NTS to the OGC Naming Authority names@opengeospatial.org.

An NTS shall contain the following:

- (i) A description of a class of resources which may be designated with OGC Names,
- (ii) The token to be used as the value of OGCResource
- (iii) A description of the structure of the ResourceSpecificPath and ResourceSpecificString for this resource type.

NOTE: If the ResourceSpecifcPath and ResourceSpecificString refer to items from other registers, details of these must be provided in the NTS. These registers may be controlled by OGC or the OGC-NA, or may be controlled by an external authority.
- (iv) Details of any type-specific policies for assignment of OGC Names

NOTE: This provides the information required for OGC-NA to assess requests for registration of names for this resource type

¹ <http://www.opengis.net/register/ogc-na/type>

3.6 OGC-NA Register

An OGC-NA register is a set of items required for the assignment and management of OGC names.

An OGC URN for an OGC-NA register shall be produced using the following rule:

```
OGCResource      = "register"
ResourceSpecificPath = "ogc-na" "/" register
ResourceSpecificString = "OGC-NA" ":" register
register         = segment-nz-nc
```

EXAMPLE 1: <http://www.opengis.net/register/ogc-na/def-type>

EXAMPLE 2: urn:ogc:register:OGC-NA:def-type

OGC-NA registers are created from time to time by OGC-NA for the purpose of managing OGC Name assignment.

3.7 Name authority

A Name Authority is an organization, specification document or service that is authorized by OGC-NA to provide or describe resources of designated resource types or sub-types. The set of Name authorities is provided by the register at <http://www.opengis.net/register/ogc-na/authority>.

An OGC URN for a Name authority shall be produced using the following rule:

```
OGCResource      = "auth"
ResourceSpecificPath = "ogc-na" "/" authority
ResourceSpecificString = "OGC-NA" ":" authority
authority         = segment-nz-nc
                  ; a token from the register of OGC Authorities2
```

EXAMPLE 1: <http://www.opengis.net/auth/ogc-na/EPSPG>

EXAMPLE 2: urn:ogc:auth:OGC-NA:EPSPG

Changes to this register (additions, deletions, supersession) shall be by submission of a Name Authority Proposal to the OGC Naming Authority names@opengeospatial.org.

A Name Authority Proposal shall contain the following:

- (i) A description of, or locator for, the Name Authority
- (ii) The token to be used to indicate this authority where required in an OGC Name
- (iii) The resource type(s) (including sub-types where appropriate) that this authority is responsible for
- (iv) Details of any authority-specific policies for name assignment (e.g. rules for name element variables)

² <http://www.opengis.net/register/ogc-na/authority/>

4 Name registration

4.1 OGC name categories

An OGC Name may fall into one of the following categories:

1. a category A name designates a discrete resource available from a service, such as a repository
 - these shall be registered as discrete items in the OGC name register

EXAMPLE 1: <http://www.opengis.net/doc/AS/Topic6>

EXAMPLE 2: urn:ogc:doc:AS:Topic6

2. a category X name is constructed as required, according to a rule or algorithm, and may or may not be associated with a discrete accessible resource
 - these shall be registered as a class, with a description of (or reference to) the rule or algorithm for names of this class

EXAMPLE: <http://www.opengis.net/def/uom/SI/0/m%2Fs>

EXAMPLE: urn:ogc:def:uom:SI::m%2Fs

4.2 Submission process

Name registration is initiated by submission of a proposal to the OGC Naming Authority names@opengeospatial.org.

A name registration submission shall contain the following information:

Category A name:

- the identity of the person or organization requesting the name assignment
- the resource type selected from the register at <http://www.opengis.net/register/ogc-na/type>.
- the OGC Name requested
- one of
 - the locator for the resource
 - a representation of the resource that may be hosted by OGC

NOTE: The last option may be the case for 'def' names.

The name must conform to the rules for names of that type, which may require that items are present in dependency registers used in the name production rule for that type.

EXAMPLE 1: <http://www.opengis.net/doc/IS/WMS/1.3.0> → http://portal.opengeospatial.org/files/?artifact_id=4756

EXAMPLE 2: urn:ogc:doc:IS:WMS:1.3.0 → http://portal.opengeospatial.org/files/?artifact_id=4756

Category X names:

- the identity of the person or organization requesting the name assignment

- the resource type selected from the register at <http://www.opengis.net/register/ogc-na/type>.
- a template for the set of OGC Names requested, with a variable for each element to be populated according to a rule or algorithm
- the rule or algorithm for populating each variable in the template, including a reference to any dependency resource
- one of:
 - (preferred) a locator for a service that can provide a description of each resource in this set
 - one of
 - a locator for a definition of the set of resources
 - a representation of the definition of the set of resources

The name must conform to the rules for names of that type, which may require that items are present in dependency registers used in the name production rule for that type.

EXAMPLE 1: <http://www.opengis.net/def/crs/EPSG/0/4326>

→ <http://www.epsg-registry.org/indicio/query?request=GetRepositoryItem&id=urn:ogc:def:crs:EPSG::4326>

EXAMPLE 2: <http://www.opengis.net/def/uom/UCUM/0/m%2Fs>

→ <http://aurora.regenstrief.org/~ucum/ucum.html>

EXAMPLE 3: <urn:ogc:def:crs:EPSG::4326>

→ <http://www.epsg-registry.org/indicio/query?request=GetRepositoryItem&id=urn:ogc:def:crs:EPSG::4326>

EXAMPLE 4: <urn:ogc:def:uom:UCUM::m%2Fs>

→ <http://aurora.regenstrief.org/~ucum/ucum.html>

Name registration will always involve the addition of items to one or more OGC-NA registers. A name assignment request shall attempt to identify all the register changes that are required, and shall ensure that the information required for each register conforms to the requirements for that register, and shall verify that an OGC name for this resource has not already been allocated.

4.3 Processing of name assignment requests

The registration process generally follows the discipline described in ISO 19135. Items are inserted into the relevant OGC-NA Registers on submission, with the status "invalid". If a registration request is accepted the item status is set to "valid". Items may subsequently be "superseded" (typically if the locator is changed) and a pointer to its successor recorded, or "retired" (if the resource is no longer available). An item that supersedes an earlier item shall have a pointer to its predecessor.

A proposal management record shall be maintained with status flags pending|tentative|final and disposition states accepted|notAccepted|withdrawn each linked to its date.

As a general principle, the OGC-NA will take a "light touch" approach to acceptance of name registration proposals, and it is expected that most proposals will be accepted. The principle grounds for rejection of a name registration will be

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1. the resource cannot be obtained using the locator provided
2. the resource is not of the type indicated
3. the resource already has an OGC name
4. the name is not consistent with patterns in use for similar resources

The OGC-NA will process requests in a timely manner.

NOTE: most discussion and decisions will be made using e-mail.

5 OGC URN Resolver

RFC 5165 indicates that a resolver will be provided at <http://urn.opengis.net/>. All OGC URN assignments whose status is "valid" shall be visible through the resolver.

There are two alternative rules for making a http URI (URL) from the name in order to request the resource:

1. Create an equivalent http URI as follows:

(i) replace the initial "ogc:urn:" with "<http://www.opengis.net/>"

(ii) replace any occurrence of "::" with "/0/"

(iii) replace all other occurrences of ":" with "/".

e.g. urn:ogc:doc:DP:WaterML:1.0 → <http://www.opengis.net/doc/DP/WaterML/1.0>

2. Use the URN as a parameter to a resolver request:

e.g. <http://urn.opengis.net?id=urn:ogc:doc:DP:WaterML:1.0>

NOTE: the first approach is similar to the rule given in clause 2.8 of the ISO URN NID specification (IETF RFC 5141).

NOTE: the first approach should be consistent with the http URI name variants described in this document and in OGC Name Type Specifications.

A http GET request with either of these URLs should result in a locator for the named resource with http response 307 or 303 [IETF RFC 2616]. 303 shall indicate a 'non-information resource' [Cool URIs for the Semantic Web], and 307 otherwise.

6 Historical note on URNs and URLs (informative)

URNs have been used for some years by OGC for the persistent identification of resources governed by OGC, and also for some resources governed externally for which there were not persistent URIs available (especially EPSG definitions).

At the time that OGC started using URNs, it appeared to be a good option for persistent identification, avoiding some undesirable effects and expectations around URLs. In particular, URN NID registrations (governed by IETF through IANA) are forever, while http domain registration is only as long as the owner remembers, and furthermore http server maintenance is a skilled job. There was also a general principle at stake: identification and location are different functions.

In the meantime, however, the rest of the web world has moved on. The current version of the URL story is that

- a URL is a 'http URI' (often, though incorrectly, abbreviated to just URI), which is first and foremost a (potentially persistent) identifier
- http URI has the highly desirable characteristic that the already deployed DNS system and http protocol mean that no independent resolver is required

The latter overcomes a legitimate criticism of all non-http URI schemes. However, use of http URIs as persistent identifiers requires a reliable strategy for managing the domain, the server, and in particular to insulate the identifier scheme from organizational name-changes that may ripple through to domain names (e.g. opengis.net → opengeospatial.org).

In this context, the existing procedures for URN assignment, accompanied by well controlled registers for elements within these, puts OGC in a good position for a transition. The name production rules in this document are almost transparent to the use of http URIs in place of URNs.

Some interesting (at times somewhat polemical) discussion of the merits of http URIs and folly of all other flavours is found in Berners-Lee's 'Cool URIs don't change' <<http://www.w3.org/Provider/Style/URI>>, and Thompson and Orchard's 'URNs, Namespaces and Registries' <<http://www.w3.org/2001/tag/doc/URNsAndRegistries-50>>. Booth's 'The URI Lifecycle ...' <<http://dbooth.org/2009/lifecycle/>> reinforces the story that persistence is about governance and not protocol.