Network Working Group
Request for Comments: 5138
Category: Informational

S. Cox
CSIRO

February 2008

A Uniform Resource Name (URN) Namespace for the Commission for the Management and Application of Geoscience Information (CGI)

Status of This Memo

This memo provides information for the Internet community. It does not specify an Internet standard of any kind. Distribution of this memo is unlimited.

Abstract

This document describes a URN (Uniform Resource Name) namespace that is engineered by the Commission for the Management and Application of Geoscience Information (CGI) for naming (i) persistent resources published by the CGI and (ii) resources published by organizations that wish them to be used in the context of services conforming to protocols and agreements issued by CGI. The formal Namespace Identifier (NID) is "cgi".

1. Introduction

CGI is a Commission of the International Union of Geological Sciences (IUGS) concerned with developing best practices in the management and application of geoscience information. The active membership is primarily drawn from organizations with statutory responsibility for providing geoscience information to external users (e.g., Geologic Surveys). An important focus of activity is the development of standards for networked data interchange to complement or supersede the traditional map product.

A number of documents, definitions, and other artifacts, are required to support this. CGI wishes to provide persistent, location-independent identifiers for these resources. In addition, organizations that subscribe to the interchange standards proposed by CGI require external identifiers for data objects that are transferred. CGI wishes to provide a scheme to enable data providers to uniquely identify data, which is consistent with the requirements of the interchange framework.

Products and services that conform to CGI endorsed interchange specifications enable users to exchange and process geoscience information across networks, computing platforms, and products. Interoperability in such an environment is facilitated by the use of

a system of identifiers that is global in scope. CGI is the lead forum for statutory organizations that act as primary providers of technical data in this application domain.

Motivated by these concerns, CGI would like to assign formal URNs to published resources in order to provide persistent, location-independent identifiers for them. The process for registering a namespace identifier is documented in [RFC3406].

The official IANA registry of URN namespaces is available online at:

<http://www.iana.org/assignments/urn-namespaces>

2. URN Specification for the "cgi" NID

Namespace ID:

cgi

Registration Information:

Registration Version Number: 1
Registration Date: 2007-10-04

Declared registrant of the namespace:

Commission for Geoscience Information (Secretariat)
c/o British Geological Survey
Kingsley Dunham Centre
Keyworth
Nottingham
Nottinghamshire
NG12 5GG
U K
Attn. Ian Jackson (ij@bgs.ac.uk)

Declaration of syntactic structure:

The Namespace Specific String (NSS) of all URNs that use the "cgi" NID has the following structure:

urn:cgi:{CGIResource}:{ResourceSpecificString}

where the "CGIResource" is a US-ASCII string that conforms to the URN syntax requirements [RFC2141] and defines a specific class of resource type. Each resource type has a specific labeling scheme that is covered by "ResourceSpecificString", which also conforms to the naming requirements of [RFC2141].

The CGI maintains a naming authority, the CGI Naming Authority (CGINA), that manages the assignment of CGIResource classes and the specific registration values assigned for each resource class.

Relevant ancillary documentation:

The CGI Naming Authority (CGINA) provides information on the registered resources and the registrations for each. More information about CGINA and the registration activities and procedures to be followed are available at:

<http://www.cgi-iugs.org/CGIIdentifierScheme>

A URN resolver is available at:

<http://www.cgi-iugs.org/uri>

The resolver provides a registry of CGI URNs used in CGI services.

Identifier uniqueness considerations:

The CGINA manages resources using the "cgi" NID and is the authority for managing the resources and subsequent strings associated. In the associated procedures, CGINA ensures the uniqueness of the strings themselves or permits secondary responsibility for management of well-defined sub-trees.

CGI may permit use of experimental-type values that will not be registered. As a consequence, multiple users may end up using the same value for separate uses. As experimental usage is only intended for testing purposes, this should not interfere with operational services.

Identifier persistence considerations:

CGINA provides clear documentation of the registered uses of the "cgi" NID. This is structured such that each CGIResource has a separate description and associated ResourceSpecificString with separate registration tables for elements of the strings that are separately maintained.

The registration tables and information are published and maintained by CGINA on the CGI web site, indicated above.

Process of identifier assignment:

CGINA defines CGIResource classes used with the "cgi" NID, and specifies the process for identifier assignment for each class. These are described at:

<http://www.cgi-iugs.org/CGIIdentifierScheme>

and a set of registers is linked from there. Each such resource may have three types of registration activities:

1) Registered values associated with CGI resources
2) Registration of values or sub-trees to other entities
3) Name models for use in experimental purposes

Process for Identifier Resolution:

The namespace is not listed with a Resolution Discovery System (RDS); this is not relevant.

Rules for Lexical Equivalence:

No special considerations; the rules for lexical equivalence of [RFC2141] apply.

Conformance with URN Syntax:

No special considerations.

Validation mechanism:

None specified. URN assignment will be handled by procedures implemented in support of CGINA activities.

Scope:

Global

3. Examples

The following examples are representative URNs that have been assigned by CGINA:

urn:cgi:document:CGI:CGIIdentifierScheme

- identifies the document that describes the CGI Identifier Scheme.

urn:cgi:register:CGI:CGIResourceClasses

- identifies the register of resource classes for which identifiers from the CGI scheme may be provided.

urn:cgi:xmlns:CGI:GeoSciML:2.0

- is the XML namespace for version 2.0 of GeoSciML, which is owned by CGI.

urn:cgi:schema:GGIC:MineralOccurences:1.0:XMI

- identifies the XML Metadata Interchange (XMI) representation of version 1.0 of the Mineral Occurrences information model owned by the (Australasian) Government Geoscience Information Committee.

urn:cgi:featureType:CGI:GeoSciML:2.0:Fault

- identifies the Fault feature-type from version 2.0 of the GeoSciML schema that is owned by CGI.

urn:ogc:serviceType:CGI:GSML-FS:1.0

- identifies version 1.0 of the "GSML-FS" service-type owned by CGI.

urn:cgi:classifierScheme:ICS:StratChart:2004

- identifies the 2004 edition of the Stratigraphic Chart published by the International Commission for Stratigraphy.

urn:cgi:classifier:ICS:StratChart:2004:Silurian

- identifies the geologic period designated Silurian from the 2004 edition of the Stratigraphic Chart published by the International Commission for Stratigraphy.

urn:cgi:classifier:GSV:Lithology:UIUYG1245NN07

- identifies the concept given the designation UIUYG1245NN07 from the lithology scheme published by Geoscience Victoria (Australia).

urn:cgi:feature:USGS:2feb49bc-6755-11dc-8314-0800200c9a66

- identifies a feature instance given the designation 2feb49bc-6755-11dc-8314-0800200c9a66 by the US Geological Survey.

urn:cgi:object:SGU:552cb080-6755-11dc-8314-0800200c9a66

- identifies an object given the designation 552cb080-6755-11dc-8314-0800200c9a66 by the Geological Survey of Sweden.

4. Namespace Considerations

There is currently no available namespace that will allow the CGI to uniquely specify and access resources, such as schemas and registries, that are required by organizations implementing CGI standards. There is also a need for other standards organizations, such as the Open Geospatial Consortium (OGC) to be able to access CGI-specific resources.

The CGI members considered use of other existing NIDs, such as those for OGC. However, these do not support the semantics required and in particular do not allow for the delegation of identifier assignment within the CGI community that is demonstrated here.

5. Community Considerations

CGI standards require access to resources, such as schemas, registries, catalogues, documents, and services. In order for the larger IT community to be able to implement applications that access CGI resources effectively, a unique namespace is required. We desire these resources to be freely and openly available as a set of community resources.

The design of the CGI namespace builds on the experience of the Open Geospatial Consortium (OGC) which has defined the framework of geospatial services within which CGI standards have been developed. The OGC membership has expertise in using the OGC URN [OGC-URN] [OGC-DEF], gained through implementation experiments and a variety of operational testbeds. The CGI namespace is compatible with this experience.

6. Security Considerations

There are no additional security considerations other than those normally associated with the use and resolution of URNs in general.

7. IANA Considerations

This document defines a URN NID registration of "cgi", which has been entered into the IANA registry located at:

<http://www.iana.org/assignments/urn-namespaces>

8. References

8.1 Normative References

[RFC2141] Moats, R., "URN Syntax", RFC 2141, May 1997.

[RFC3406] Daigle, L., van Gulik, D., Iannella, R., and P. Faltstrom, "Uniform Resource Names (URN) Namespace Definition Mechanisms", BCP 66, RFC 3406, October 2002.

8.2 Informative References

[OGC-URN] Reed, C., "A URN namespace for the Open Geospatial Consortium (OGC)", Work in Progress, October 2007.

[OGC-DEF] Whiteside, A., "Definition identifier URNs in OGC namespace", OpenGIS Best Practice document, OGC 06-023r1, August 2006. Available [online]: <http://portal.opengeospatial.org/files/?artifact_id=16339>

9. Acknowledgement

Thanks to Carl Reed for preparing the document, "A URN Namespace for the Open Geospatial Consortium", upon which this submission is based.

Author's Address

S.J.D. Cox
Commonwealth Scientific and Industrial Research Organisation
PO Box 1130
Bentley, WA, 6102, Australia
EMail: Simon.Cox@csiro.au

Full Copyright Statement

Intellectual Property