FGDC.GOV
FEDERAL GEOGRAPHIC DATA COMMITTEE

# Standards Update
# August 2016

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## FGDC

### Metadata standards

At its May 25, 2016 meeting, the FGDC Standards WG recommended the following standards for FGDC endorsement:

- INCITS/ISO 19115-1:2014[2014] Geographic information - Metadata - Part 1: Fundamentals
- INCITS/ISO 19157:2013[2014] Geographic information - Data quality

The FGDC Office of the Secretariat is reviewing the ballot package before it releases the package to the CG for vote to approve these two standards for FGDC endorsement.

The next FGDC Standards WG meeting is projected for the last week of September 2016.

### FGDC Standards WG charter

The latest FGDC Standards WG charter, which is published at http://www.fgdc.gov/standards/organization/FGDC-SWG/SWG_Charter.pdf, dates back to the 1990s. Much of the content is still relevant, and has been carried over to the draft revised FGDC Standards WG charter. The draft revised charter:

- cites more recent authorities;
- contains a bibliography of works cited; and
- references initiatives such as the Geospatial Platform, NSDI Strategic Plan and the National Geospatial Data Asset (NGDA) management plan

The CG ballot to approve the revised FGDC Standards WG charter closed on July 29. Voting results: 11 Yes, 0 No, 18 no response. The revised FGDC Standards WG charter will be forwarded to the FGDC Steering Committee for FGDC endorsement, along with the FGDC Architecture & Technology WG charter.

## INCITS Technical Committee L1 and ISO Technical Committee 211

### ISO 19115-3:2016 published

ISO 19115-3:2016, Geographic information -- Metadata -- Part 3: XML schema implementation, was published on August 12. On August 16, the INCITS Secretariat issued action item #0490, Request for vote on adoption of IS 19115-3:2016, for INCITS EB ballot. The due date is November 16.

ISO/TS 19115-3:2016 describes the procedure used to generate XML schema from ISO geographic information conceptual models related to metadata. The procedure includes creation of an UML model for XML implementation derived from the conceptual UML model.

ISO/TS 19115-3:2016 defines:

- XML schemas to validate metadata instance documents conforming to conceptual model elements defined in ISO 19115‑1, ISO 19115‑2, and ISO/TS 19139;
- ISO/IEC 19757‑3 (Schematron) rules that implement validation constraints in the ISO 19115‑1 and ISO 19115‑2 UML models that are not provided by the XML schema; and
- An Extensible Stylesheet Language Transformation (XSLT) for transforming ISO 19115-1 metadata encoded with the ISO/TS 19139 XML schema and ISO 19115‑2 metadata encoded with the ISO/TS 19139‑2 XML schema into a document that is valid against the XML schemas defined in this standard.

The XML schema has been generated from the UML model for XML implementation according to the rules defined in ISO/TS 19139 or ISO 19118.

### Other

- Glenn Guempel, USGS, is now chair of INCITS Technical Committee L1. The FGDC executive director and his deputy endorsed the nomination of Glenn Guempel as INCITS L1 Chair.
- The INCITS Secretariat, which serves as the administrator for the US TAG to ISO/TC 211, has approved the offer by the US National Body to host the 28 November - 2 December 2016 ISO/TC 211 Plenary and WG meetings at the Esri campus in Redlands, California.
- Sweden will serve as the ISO/TC211 chair and secretariat beginning January 2017.

## Open Geospatial Consortium

### Catalogue Services (CAT) Standard version 3.0

OGC® announced the release of OGC Catalogue Services (CAT) Standard version 3.0 on July 12.

OGC® Catalogue Services support publishing and searching metadata records for geospatial data, services, and related information. Catalogue services support discovery and binding to registered information resources.

OGC® Catalogue Services 3.0 - General Model (12-168r6) describes the common architecture for OGC Catalogue Services. It specifies interfaces between clients and catalogue services through abstract models. The common architecture is platform neutral and uses UML notation. Catalogue Services 3.0 aligns better than CAT 2.0.2 with other OGC standards, provides a developer-friendly OpenSearch Geo API, supports querying via temporal extents, and improves distributed search.

This is the first time that OGC has released a standard with an implementation test and implementations that have passed the test. The CSW 3.0 compliance test suite is available on the OGC validation web site. Two reference implementations (pycsw and Esri Geoportal Server) are available to re-use, implement, or customize: see https://github.com/opengeospatial/cite/wiki/Reference-Implementations.

### OGC® Catalogue Services 3.0 Specification - HTTP Protocol Binding

OGC announced the release of OGC® Catalogue Services 3.0 Specification - HTTP Protocol Binding on July 12.

OGC® Catalogue Services 3.0 Specification - HTTP Protocol Binding specifies the HTTP profile of CAT 3.0 and mapping of the Catalogue abstract model interface to HTTP protocol binding.

In HTTP protocol binding, operation requests and responses are sent between clients and servers using HTTP GET and/or HTTP POST. Two request encodings are defined in this standard: KVP is suitable for use with HTTP GET, while XML is suitable for use with HTTP POST.

This standard defines operations that allow a client to get a service description document for the catalogue (GetCapabilities); interrogate the service about the kinds of data available (GetDomain); retrieve records from the catalogue (GetRecordById and GetRecords); and add, modify and remove records from the catalogue service (Transaction, Harvest, UnHarvest).

### OGC Abstract Specification Topic 11: Metadata

The OGC and ISO TC/211, which maintains ISO 19115, align standards whenever possible. ISO has adopted many OGC standards, while OGC references fundamental ISO Standards in its Standards Baseline. The ISO 19115 metadata standard

was updated in 2014, and numerous organizations now mandate use of this most recent version: hence, there was a proposal to update of OGC Abstract Specification Topic 11: Metadata from ISO 19115:2003 to ISO 19115-1:2014.

History:

1. The OGC Architecture Board (OAB) completed review on 2016-02-28.
2. OGC® requested public comment on the update of OGC Abstract Specification Topic 11: Metadata from ISO 19115:2003 to ISO 19115-1:2014. The OGC Architecture Board (OAB) and the Metadata Domain Working Group (DWG) approved the update. The period for public comment closed May 7. Several comments highlighted dependencies on the previous version of the Abstract Specification Topic.
3. The candidate standard was presented to the Technical Committee (TC) during the Closing Plenary of the June 2016 Dublin TC meeting. At the June 2016 OGC TC meeting, members approved an electronic vote to approve [16-032r2] "ISO 19115-1:2014 Geographic information – Metadata – Part 1: Fundamentals" as an update to the OGC Abstract Specification, Topic 11.
4. TC approved the start of electronic vote 2016-06-23.
5. The ballot to update Abstract Specification Topic 11 - Metadata to ISO 19115-1:2014 opened on July 20. It will close on September 3.

### Community standards

OGC has introduced a new type of standard called a "community standard" that addresses widely implemented standards such as GeoTIFF. A community standard is a standard developed by communities external to the OGC that OGC members wish to bring into the OGC process.

3D Tiles is the first community standard being vetted through the OGC. OGC has issued an RFC on 3D Tiles: see http://www.opengeospatial.org/pressroom/pressreleases/2466. Comments are due on September 18.

Visit Section 9.5 and Annex C of OGC Technical Policies and Procedures Version 24.0, http://docs.opengeospatial.org/pol/05-020r24/05-020r24.html#103, for more information about the requirements for submitting a community standard for OGC consideration and a checklist of steps for community standard submission, review, and approval.

### Contact

Contact your agency's representative(s) to OGC for more information.

## Geospatial-Intelligence Standards WG (GWG)

No new items to report.

### Contact

For more information, contact Julie Binder Maitra, FGDC representative to GWG, or your agency's representative to GWG.

## Monthly standards update

The August 2016 standards tracking workbook may be downloaded from https://www.fgdc.gov/standards/monthlyStandardsUpdate/2016-08/2016-08_StandardsUpdate.xlsx/view.

To download the workbook, visit the link under the section titled Monthly standards update.

The benefit and use of the standards tracking workbook is under evaluation.

The standards tracking workbook (Excel) has been maintained since February 2011. There is a worksheet for each year, and within each worksheet, there are columns to track standards over the months.

The standards tracking workbook now covers over 300 standards from FGDC, INCITS Technical Committee L1, ISO Technical Committee 211, OGC, and other standardization activities. The effort is very time-intensive, due to the amount of information that is collected, reviewed, and corroborated.

The FGDC Standards Program Manager requests input from people working with standards. Questions:

- Is your agency aware of the standards update resource?
- Has your agency downloaded it?
- How have you used it?
- Do you have suggestions for improving its use/effectiveness?

## Events

| Year | Month | Date(s) | Event | Location |
|---|---|---|---|---|
| 2016 | **September** | 09/05-09/09 | ISO/IEC JTC1/WG10 Internet of Things (IoT) | Busan, Korea |
| | | 09/11-09/13 | SciDataCon 2016 – Advancing the Frontiers of Data in Research | Denver, Colorado |
| | | 09/13 | CG | |
| | | 09/14 | FGDC Metadata WG | |
| | | 09/19-09/23 | OGC | Orlando, FL |
| | | 09/19-09/23 | ISO/IEC JTC1/WG11 Smart Cities | Cagliari, Italy |
| | | 09/26-09/30 | FGDC Standards WG | |
| | | 09/26-09/30 | INSPIRE Conference 2016 | Barcelona, Spain |
| | | 09/27-09/28 | NGAC | Shepherdstown, WV |
| | | 09/29 | FGDC Steering Committee | Washington, DC |
| | | 09/30 | INCITS L1/U.S. TAG | Reston, VA |
| | **October** | 10/11 | CG | |
| | | 10/12 | ISO Metadata Forum | webinar |
| | | 10/13 | FedGeoDay | Washington, DC |
| | | 10/24-10/28 | World Standards Week | Washington, DC |
| | **November** | 11/07-11/11 | ISO/IEC JTC1 Plenary | Lillehammer, Norway |
| | | 11/08 | CG | |
| | | 11/11 | INCITS L1/U.S. TAG | |
| | | 11/16 | GIS Day | various locations |
| | | 11/28-12/02 | GSDI 15th World Conference | Taipei, Taiwan |
| | | 11/28-12/02 | ISO TC 211 Plenary and meetings | Redlands, California |
| | **December** | 12/04-12/08 | OGC | Taichung, Taiwan |
| | | 12/12-12/16 | American Geophysical Union (AGU) | San Francisco, California |
| | | 12/13 | CG | |
| 2017 | **March** | 03/20-03/24 | OGC | Delft, The Netherlands |
| | **June** | 06/26-06/30 | OGC | St. John's, Newfoundland, Canada |
| | **July** | 07/02-07/07 | International Cartographic Conference (ICC 2017) | Washington, DC |
| | | 07/23-07/28 | IEEE International Geoscience and Remote Sensing Symposium (IGARSS) | Fort Worth, TX |

Scroll to bottom of https://batchgeo.com/map/kml/8d9590012db8cb6f797aecf6bdad54ad to download KML

## Contact

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# FYI

## Items of interest

| Name | Annotation | URL |
|---|---|---|
| **World Data System** | The ICSU World Data System promotes long-term stewardship of and universal and equitable access to quality-assured scientific data and data services, products, and information across a range of disciplines in the natural and social sciences and the humanities. | https://www.icsu-wds.org/ |
| **Geospatial standards wiki** | The geospatial standards wiki was created by the International Cartographic Association Commission on SDI and Standards and is maintained by the Commission, ISO/TC 211 and other volunteers. | http://wiki.icaci.org/index.php?title=Standards |
| **Schema.org** | Schema.org is a collaborative community activity that creates, maintains, and promotes schemas for structured data. Schema.org vocabularies may be used with many different encodings. These vocabularies cover entities and relationships and can easily be extended.<br><br>Schema.org is open and machine-readable.<br><br>For geographic coordinates, see Thing > Intangible > StructuredValue > GeoCoordinates, . http://schema.org/GeoCoordinates | http://schema.org |
| **U.S. Federal Statistical System** | The U.S. Federal Statistical System spans 125 agencies that are engaged in collecting data and producing statistics. OMB's Office of Information and Regulatory Affairs (OIRA) coordinates the Nation's decentralized Federal statistical system. | http://proximityone.com/fss.htm |

| Name | Annotation | URL |
|---|---|---|
| **RDA metadata standards directory** | The Research Data Alliance (RDA) has set up a metadata standards directory on GitHub. The directory lists both the FGDC Content Standard for Digital Geospatial Metadata and ISO 19115. FGDC members might be interested in reviewing the directory for metadata standards that apply to their domains. | http://rd-alliance.github.io/metadata-directory/standards/ |
| **European Data Portal** | *The European Data Portal harvests metadata of Public Sector Information available on public data portals across European countries.*<br><br>Its catalogue of metadata is not limited to spatial information but contains records across different domains. One might find some of the Member States' geospatial data on the European Data Portal. The European Data Portal publishes spatial datasets from EU Institutions that are based on the INSPIRE data model. | http://www.europeandataportal.eu/ |
| **INSPIRE Geoportal** | *"The INSPIRE geoportal provides the means to search for spatial data sets and spatial data services, and subject to access restrictions, view spatial data sets from the EU Member States within the framework of the INSPIRE Directive."*<br><br>INSPIRE geoportal is the central access point to the geospatial data (and metadata and services) in the EU Member States. Data referenced in INSPIRE catalogue might be open data; however, unlike the European Data Portal, much available data has restricted access rights. | http://inspire-geoportal.ec.europa.eu/ |

| Name | Annotation | URL |
|---|---|---|
| **Counting down to the new ampere** | This article notes that in 2018, the base units of the International System of Units (SI) are scheduled to be re-defined in terms of physical constants, with major changes in the kilogram, ampere, kelvin, and mole.<br><br>NIST gave a presentation on SI units at the February 2014 FGDC Standards WG meeting | http://www.nist.gov/pml/div684/grp02/counting-down-to-the-new-ampere.cfm |
| **Open Geospatial Data, Software and Standards** | *Open Geospatial Data, Software and Standards provides an advanced forum for the science and technology of open data, crowdsourced information, and sensor web through the publication of reviews and regular research papers. The journal publishes articles that address issues related, but not limited to, the analysis and processing of open geo-data, standardization and interoperability of open geo-data and services, as well as applications based on open geo-data. The journal is also meant to be a space for theories, methods and applications related to crowdsourcing, volunteered geographic information, as well as Sensor Web and related topics.* | https://opengeospatialdata.springeropen.com/ |

## Data formats

| Title | Annotation | URL |
|---|---|---|
| **M-13-13 Memorandum for the heads of executive departments and agencies: Open Data Policy-Managing Information as an Asset** | Pursuant to Executive Order of May 9, 2013, Making Open and Machine Readable the New Default for Government Information, this Memorandum establishes a framework to help institutionalize the principles of effective information management at each stage of the information's life cycle to promote interoperability and openness …<br><br>Specifically, this Memorandum requires agencies to collect or create information in a way that supports downstream information processing and dissemination activities. This includes using machine-readable and open formats, data standards, and common core and extensible metadata for all new information creation and collection efforts. | https://www.whitehouse.gov/sites/default/files/omb/memoranda/2013/m-13-13.pdf |
| **File formats** | The Open Data Workbook explains the basic concepts of 'open data', especially in relation to government. It covers how open data creates value and can have a positive impact in many different areas.<br><br>This web page identifies several file formats, but does not explicitly identify which ones are open format machine readable formats. It does not identify geospatial data formats. | http://opendatahandbook.org/guide/en/appendices/file-formats/ |

| Title | Annotation | URL |
|---|---|---|
| **Machine-readable and open file formats** | "This document (Google Docs) contains a list of file formats. The goal is to bring clarity into the differences among file formats. Which file formats can be considered machine-readable? Which ones are open and which ones are closed? And which formats can be considered both open and machine-readable?<br>… In the past we have seen that a lot of users struggle with very topic-specific file formats - especially for geographic data. The goal is also to shed light on these special cases."<br><br>GeoJSON is identified as an open machine readable format, but KML is not. GML is not even mentioned.<br><br>Users may edit this document. | https://docs.google.com/document/d/1H0JJz6432kAxCYaxghe8LkEWOq33PtY-F4AS2PuSKVQ/edit# |
| **Implementation Guidelines For National Data Sharing and Accessibility Policy (NDSAP) Ver. 2.2** | This document from the National Informatics Centre, Government of India proposes that geospatial data should be published in GML or KML. An RFC recently concluded. | https://data.gov.in/sites/default/files/NDSAP_Implementation_Guidelines_2.2.pdf |
| **Choosing the right format for open data** | "When publishing this type of data, formats like GeoJSON (based upon JavaScript Object Notation - JSON) and KML (based upon Extensible Markup Language - XML) should be considered.<br><br>These formats are specifically designed with usability in mind and can easily be imported and exported from specialist mapping tools like Open Street Map and CartoDB [now CARTO]"<br><br>GML, however, is not mentioned. | https://www.europeandataportal.eu/elearning/en/module9/#/id/co-01 |

| Title | Annotation | URL |
|---|---|---|
| **Format Descriptions for Geospatial Data** | This web page from the Library of Congress provides links to comprehensive descriptions of many geospatial data formats, including GeoJSON, GML, and KML. Not all data formats listed are open data formats. | http://www.digitalpreservation.gov/formats/fdd/gis_fdd.shtml |
| **Linked Data** | Tim Berners-Lee's 5-star rating system for linked open data.<br><br>A 3-star rating means that data is available on the web (in whatever format) with an open license, as machine-readable structured data (2-star); and as a non-proprietary format .<br><br>KML, GeoJSON, and GML are all 3-star formats. 4-star includes 3-star formats; in addition, open standards from W3C (RDF and SPARQL) are used to "identify things." | https://www.w3.org/DesignIssues/LinkedData.html |
| **Semantic Web Primer** | Tutorials on Linked Data and the Semantic Web.<br><br>RDF (4-star) is the format that the semantic web uses to store data in graph databases.<br><br>OWL is the means for encoding meaning into data.<br><br>SPARQL is used to query the graph database. | http://www.linkeddatatools.com/semantic-web-basics |

| Title | Annotation | URL |
| --- | --- | --- |
| **RDF 1.1 Primer** | This primer provides the reader with basic knowledge to effectively use RDF. It introduces basic concepts of RDF and shows concrete examples of the use of RDF.<br><br>RDFa can be used to embed RDF data within HTML and XML, while RDF/XML provides XML syntax for RDF graphs.<br><br>RDF may be used to add machine-readable information to Web pages such as schema.org.<br><br>The RDF 1.1 Primer identifies schema.org as a vocabulary developed by major search providers. Webmasters can use these terms to mark-up Web pages so that search engines understand what the pages are about. | https://www.w3.org/TR/2014/NOTE-rdf11-primer-20140225/ |