FGDC.GOV
FEDERAL GEOGRAPHIC DATA COMMITTEE

Federal Geographic Data Committee Metadata Working Group

Quarterly Meeting

September 13, 2017

Agenda

- ISO Metadata Standards Update
- Best Practices Document Review
- ISO Metadata Summit - Highlights, Recommendations, and Next Steps
- News from the Field
- Open Discussion

FGDC.GOV
FEDERAL GEOGRAPHIC DATA COMMITTEE

ISO Metadata Standards Update

Julie Maitra, FGDC

FGDC.GOV
FEDERAL GEOGRAPHIC DATA COMMITTEE

Status of ISO Metadata Standards Endorsements

Jennifer Carlino,
FGDC

ISO 19115-3:2016 Endorsement Process

- Voting Results: Approve
  - Of 11 Federal Departments represented on MWG, 5 Yes, 0 No, 0 Abstain
  - Agencies voting: NOAA, BOEM, Forest Service, NGA, USACE, USGS
- Next Steps
  - Proposal has been submitted to FGDC Standards Working Group (SWG) for review
  - SWG meeting will be scheduled for mid-October to discuss and vote

FGDC.GOV
FEDERAL GEOGRAPHIC DATA COMMITTEE

Update to *Metadata Recommendations Supporting Data Discovery and Use in Data.gov and the Geospatial Platform*

Jennifer Carlino, FGDC

Update Objectives

- Identifies best practices for creating metadata records that support the full range of Data.gov and Geospatial Platform operational capabilities and improve the discovery and use of geospatial data resources
- Supports the ISO suite of metadata standards
- Includes guidance on
  - Metadata Content Best Practices such as documenting services, collections, and the assignment of unique identifiers
  - Metadata Publication Best Practices
- Companion to NGDA Metadata Guidelines
- Available on GeoPlatform.gov at: https://cms.geoplatform.gov/sites/default/files/document_library/DataGov%26GeoPMetadataRecommendations_Published20170614%20%281%29.pdf

FGDC.GOV
FEDERAL GEOGRAPHIC DATA COMMITTEE

Titles, Abstracts, and Dates

- Write informative titles and abstracts
  - Distinctive and descriptive
- Specify dates using the correct format
  - If using ISO 19115/-1: the ISO 8601 date format of YYYY-MM-DD is recommended. If the exact day or month is not known, the convention allows for the use of YYYY-MM and YYYY
  - If using CSDGM:
  - The format YYYYMMDD, is required. If the exact day or month is not known, the convention allows for the use of just the year, YYYY.
    - Note: The 6-letter representation, YYYYMM, e.g. 201112 (December of 2011), is not recommended as it is easily misinterpreted as the incorrect, but still used, YYMMDD (November 12, 2020).
  - Can use indeterminate dates

Use Unique Identifiers

- Identifiers should be created for both the dataset resources (data or service) being documented and, where possible, the resource (dataset) metadata record. Identifiers are best represented using a Unique Resources Identifier (URI) - an IETF/W3C standard scheme
- If using ISO 19115:
  - The resource identifier should be included as the resource Citation Identifier: MD_Metadata.identificationInformation>MD_Identification.citation>CI_Citation.identifier
  - The metadata record identifier should be included as the Metadata Identifier: MD_Metadata.fileIdentifier
- If using ISO 19115-1:
  - The resource identifier should be included as the resource Citation Identifier: MD_Metadata.identificationInformation>MD_Identification.citation>CI_Citation.identifier
  - The metadata record identifier should be included as the Metadata Identifier: MD_Metadata.metadataIdentifier
- If using CSDGM:
  - The resource identifier should be included as the Other Citation Details metadata>idinfo>citeinfo>othercit and formatted within the element as: resourceIdentifier="(identifier value)" e.g, Other Citation Details: resourceIdentifier= "doi:10.7358/V5057CV7"
  - The metadata record identifier should be included as the Other Citation Details: metadata>idinfo>citeinfo>othercit and formatted within the element as: metadataIdentifier="(identifier value)" e.g, Other Citation Details: metadataIdentifier= "gov.noaa.ngdc.stp.terrestrial:G37468"

Provide Keywords and Use Vocabularies

- Data.gov and the Geospatial Platform rely heavily on keywords to identify resources of highest interest to users
- Use ISO 19115-1 Topic Categories
  - For CSDGM, include one or more Topic Categories as a Theme Keyword and specify "ISO 19115 Topic Category" as the Theme Keyword Thesaurus
- Use available published keyword and vocabularies

ISO 19115-1 Topic Categories	
biota	*intelligenceMilitary*
boundaries	*location*
climatologyMeteorologyAtmosphere	*oceans*
economy	*planningCadastre*
elevation	*society*
environment	*structure*
farming	*transportation*
geoscientificInformation	*utilitiesCommunication*
health	*extraTerrestrial*
imageryBaseMapsEarthCover	*disaster*
inlandWaters	

FGDC.GOV
FEDERAL GEOGRAPHIC DATA COMMITTEE

Contact Information

- Promotes use of position titles and agency versus individuals who are likely to change
- Contact information should focus on the organization and include the Agency Name, Position Name, Agency Email and Phone.
- The record should include a Point of Contact for the resource being documented, a Metadata Contact, and contacts for resource Distribution and Processing as relevant.
- The use of ISO Responsible Party Role Codes is highly recommended. The role codes make clear the relationship of the contact to the resource, e.g. owner, distributor, processor, principal investigator, etc.

Links- Graphics and Data Download

- Include links to browse or “thumbnail” graphic
- Provide Direct URLs to online resources (data, services, applications)
- Provide Data Download URLs
  - If using the CSDGM, the data download URL should be documented in the “Distribution” section of the metadata record and provided within the “Digital Transfer Online Network Resource Name” element. In addition the value ‘download’ should be provided within the “Distribution Digital Transfer Format Specification” element. The “Citation – Online Linkage” should not be used to designate the download URL as it does not provide supporting elements to make clear the download function of the URL
  - If using ISO, the data download URL should be documented as a “Citation – Online Linkage”. The “Citation – Online Linkage” can originate from the “Identification” or “Distribution” section. The format of the download should be documented in the “Citation – Online Resource Application Profile’ and the value “download” should be provided within the “Citation – Online Resource Function” element

Web Services

- Metadata should include:
  1. An actionable service endpoint URL
  2. The URI that uniquely identifies the appropriate service application profile specification associated with the geospatial web service
  3. The designated title for the service
  4. A description of the service including the service specification author, e.g. OGC, Esri, and relevant information about the content, function, intended audience, etc.

FGDC.GOV
FEDERAL GEOGRAPHIC DATA COMMITTEE

Key Updates – Web Service ISO

ISO – Web Services Rationale and Comments	
Use the CI_OnlineResource metadata elements and content below within the Service Identification, Data Identification, Distributor, or Distribution component of the NGDA metadata record using *any* of the below: *MD_Metadata.identificationInfo/SV_ServiceIdentification.citation/CI_Citation.citedResponsibleParty/CI_ResponsibleParty.contactInfo/CI_Contact.onlineResource/CI_OnlineResource* *MD_Metadata.identificationInfo/SV_ServiceIdentification*.containsOperation/SV_OperationMetadata.connectPoint/*/CI_Contact.onlineResource/CI_OnlineResource* *MD_Metadata.identificationInfo/MD_DataIdentification.citation/CI_Citation.citedResponsibleParty/CI_ResponsibleParty.contactInfo/CI_Contact.onlineResource/CI_OnlineResource* *MD_Metadata.distributionInfo/MD_Distribution.transferOptions/MD_DigitalTransferOptions.onLine/CI_OnlineResource* *MD_Metadata.distributionInfo/MD_Distributor.distributorContact/CI_ResponsibleParty.contactInfo/CI_Contact.onlineResource/CI_OnlineResource*	
Citation Online Resource Linkage	Provide the URL for your geospatial web service(s) *…/CI_OnlineResource.linkage*
Citation Online Resource Application Profile	Include a link to the appropriate service API (application profile) specification (can include version as noted above): http://opengis.net/spec/wms http://opengis.net/spec/wfs http://opengis.net/spec/wcs http://opengis.net/spec/wmts http://opengis.net/spec/csw http://opengis.net/spec/kml http://www.geoplatform.gov/spec/esri-map-rest http://www.geoplatform.gov/spec/esri-image-rest http://www.geoplatform.gov/spec/esri-feature-rest *…/CI_OnlineResource.appProfile*
Citation Online Resource Name	Provide a Title for the geospatial web service *…/CI_OnlineResource.name*
Citation Online Resource Description	Provide additional information such as OGC, Esri, etc. to clarify the service type. Include other relevant information about the content, function, intended audience, etc. *…/CI_OnlineResource.description*

FGDC.GOV
FEDERAL GEOGRAPHIC DATA COMMITTEE

Key Updates – Web Service ISO

- ISO XML encoding example

ISO 19115 Web Services:

```
<gmd:CI_OnlineResource>
  <gmd:linkage>
    <gmd:URL>http://maps.ngdc.noaa.gov/arcgis/services/web_mercator/trackline_combined_dynamic/Map
    Server/WMSServer?request=GetCapabilities&amp;service=WMS</gmd:URL>
  </gmd:linkage>
  <gmd:applicationProfile>
    <gco:CharacterString>http://opengis.net/spec/wms</gco:CharacterString>
  </gmd:applicationProfile>
  <gmd:name>
    <gco:CharacterString>Geophysical Trackline Data Web Map Service (WMS)</gco:CharacterString>
  </gmd:name>
  <gmd:description>
    <gco:CharacterString>Capabilities document for Open Geospatial Consortium Web Map Service for
    Geophysical Trackline Data</gco:CharacterString>
  </gmd:description>
</gmd:CI_OnlineResource>
```

Key Updates – Web Service CSDGM

CSDGM - Web Services Rationale and Comments	
Use the Digital Transfer metadata elements and content below within the Distribution Section of the NGDA metadata record	
Distributor	Provide Contact Information (Section 10) for the resource */metadata/distinfo/distrib*
Distribution Liability	Provide a statement as to the liability assumed by the distributor */metadata/distinfo/distrib*
Distribution Digital Transfer Format Name	Provide a Title For the web map-related service */metadata/distinfo/storder/digform/digtinfo/formname*
Distribution Digital Transfer Format Version Number or Date	Indicate either the version date, e.g. '2016', or version number, e.g.'1.0', of the format */metadata/distinfo/storder/digform/digtinfo/formvern* *or* */metadata/distinfo/storder/digform/digtinfo/formverd*
Distribution Digital Transfer Format Specification	Include a link to the appropriate service API specification: http://opengis.net/spec/wms http://opengis.net/spec/wfs http://opengis.net/spec/wcs http://opengis.net/spec/wmts http://opengis.net/spec/csw http://opengis.net/spec/kml http://www.geoplatform.gov/spec/esri-map-rest http://www.geoplatform.gov/spec/esri-image-rest http://www.geoplatform.gov/spec/esri-feature-rest */metadata/distinfo/storder/digform/digtinfo/formspec*
Distribution Digital Transfer Format Information Content	Provide a description of the service including, as relevant, the content, function, intended audience, etc: */metadata/distinfo/storder/digform/digtinfo/formcont*
Digital Transfer Online Network Resource Name	Provide the URL for your web map-related service *metadata/distinfo/storder/digform/digtoption/onlinopt/networka/networkr*
Digital Transfer Fees	Indicate if fees are required to access the web map-related service. This is most commonly a value of 'none'. *metadata/distinfo/storder/fees*

FGDC.GOV
FEDERAL GEOGRAPHIC DATA COMMITTEE

Key Updates – Web Service CSDGM

- CSDGM XML encoding example

CSDGM Web Services:


```
<distinfo>
  <distrib>
    <cntinfo>
      <cntperp>
        <cntper>Jane Doe</cntper>
      </cntperp>
      <cntaddr>
        <addrtype>mailing and physical</addrtype>
        <address>70 Main Street</address>
        <city>Moscow</city>
        <state>Idaho</state>
        <postal>83843</postal>
        <country>USA</country>
      </cntaddr>
      <cntvoice>555-555-5555</cntvoice>
      <cntemail>JaneDoe@email.com</cntemail>
    </cntinfo>
  </distrib>
  <distliab>Distributor assumes no liability for misuse of data</distliab>
  <stdorder>
    <digform>
      <digtinfo>
        <formname>PADUS GAP Status Layer web service:</formname>
        <formvern>1.0</formvern>
        <formspec>http://www.geoplatform.gov/spec/esri-map-rest</formspec>
        <formcont> An ArcGIS Map Services that illustrates and describes public land ownership,
        management and conservation lands nationally, including voluntarily provided privately protected
        areas</formcont>
      </digtinfo>
      <digtopt>
        <onlinopt>
          <computer>
            <networka>
                <networkr>http://gis1.usgs.gov/arcgis/rest/services/gap/PADUS_Status/MapServer</networkr>
            </networka>
          </computer>
        </onlinopt>
      </digtopt>
    </digform>
    <fees>None</fees>
  </stdorder>
</distinfo>
```


FGDC.GOV
FEDERAL GEOGRAPHIC DATA COMMITTEE

Key Updates – Collection Level

ISO 19115

- Title of the resource collection
  MD_Identification.aggregationInfo>Md_AggregationInfo.aggregateDataSetName>Citation.title
- Type of Association
  MD_Identification.aggregationInfo>Md_AggregationInfo.associationType>DS_AssociationTypeCode, e.g. largerWorkCitation, partOfSeamlessDatabase, collectiveTitle, series
- Identifier for the resource collection
  MD_Identification.aggregationInfo>Md_AggregationInfo.aggregateDataSetIdentifier>Citation.identifier

ISO 19115-1

- Title of the resource collection: MD_Identification.associatedResource>Md_AssociatedResource.name>Citation.title
- Type of Association:
  MD_Identification.associatedResource>Md_AssociatedResource.associationType>DS_AssociationTypeCode, e.g. largerWorkCitation, partOfSeamlessDatabase, collectiveTitle, series
- Identifier for the resource collection:
  MD_Identification.associatedResource>Md_AssociatedResource.name>Citation.identifier

CSDGM

- Title of the resource collection Identification>Citation>Larger Work Citation>Citation.title
- Identifier for the resource collection Identification>Citation>Larger Work Citation>Citation.otherCitationDetails
- using the following format: 'identifier=(identifier value)

Enable Data.gov harvest without introducing duplicates

- Placing all the member metadata records in a single WAF separate from the collection-level metadata record
- Registering the WAF that includes the member metadata records as a "WAF Homogeneous Collection" Harvest Source in catalog.data.gov
- When creating the "WAF Homogeneous Collection", providing agency-specific URLs for the following Harvest Source registration elements is key: URL – provide a link to the WAF that contains the member metadata records and Collection Metadata URL – provide a link to the collection-level metadata record

Publishing Metadata

- Don’t Publish Metadata for Resources Produced by Others
  - Metadata should be published to Data.gov by the agency that is responsible for the resource. If metadata for the same resource is duplicated, it can result in conflicting information about the resource, confusion about the resource authority, and the unintended use of derived resources
  - If an organization modifies a resource, the Title, Abstract, and Lineage of the metadata record for the modified resource should make clear the modification and attribute both the source resource and the authority responsible for the resource.
  - In some cases, publishers may serve as a metadata clearinghouse for other organizations, such as a federal Enterprise Data Inventory (EDI) or state metadata catalog. These publishers are encouraged to publish to Data.gov if the metadata records within their catalog are unique and clearly cite the authority responsible for the resource.

FGDC.GOV
FEDERAL GEOGRAPHIC DATA COMMITTEE

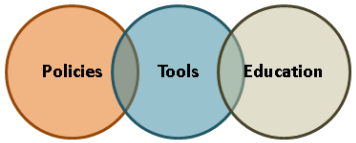
May 23&24, 2017
ISO Geospatial Metadata Summit
Highlights, Recommendations, and Next Steps

Jennifer Carlino, FGDC

ISO Metadata Summit: Our Progress to Date

- ISO 19115/-1 Endorsement by FGDC
- ISO Forum
- ISO Implementation Workflow Model
- NOAA Transforms
- Benefits of ISO
- ISO Metadata Editor Registry
- NOAA ISO Webinars
- NOAA/NASA wikis
- Data.gov/POD githubs

ISO Metadata Summit



Breakout sessions

- Tools
  What tools and applications are needed to support organizations in moving forward with ISO metadata implementation? How can the Geospatial Platform be leveraged?
- Policy
  What policy and planning efforts and resources are needed to support organizations in moving forward with ISO metadata implementation?
- Education
  What education and outreach efforts and resources are needed to support organizations in moving forward with ISO metadata implementation?

Summit Breakout: Tools and Applications

- Guidance on using tools to document services
- Validation app with easy to understand error reporting
- Transform app for multiple standards that can be customized for agency/stakeholder use
- Build upon AK Data Integration Working Group Metadata Toolkit (mdEditor, mdJSON, mdTranslator)
- Coordinate the assignment of URIs
- Library of common controlled vocabularies/taxonomies

Summit Breakout: Policy and Planning

- Transition strategy and timeline to ISO metadata (deprecate CSDGM?)
- Harmonize A16, Open Data Policy, EO 12906, data management and reporting policies and practices
- Develop master crosswalk across multiple metadata standards
- NGDA Lifecycle Maturity include 19115-1 use as a metric
- Elevate geospatial data and metadata standards within agency data steering committees
- Data.gov capability to publish 19115-1 metadata
- Maintenance of CSDGM profiles in ISO, e.g. biological profile

Summit Breakout: Education and Outreach

- ISO 19115-1 'workbook' or online app to serve as both reference and guidance document
- Library of ISO metadata examples for different use cases including services and feature catalog
- ISO geospatial metadata listserver to directly exchange updates, resources, questions, etc.
- Training videos on specific topics similar to FGDC 2013 Workshop presentations
- GeoPlatform training about metadata capabilities and best practices
- Promote benefits of ISO metadata to agency/stakeholder

Discussion

News From the Field

FGDC.GOV
FEDERAL GEOGRAPHIC DATA COMMITTEE

Esri Metadata Update

Marten Hogeweg,
Esri

Next Meetings

<u>October 11</u>
ISO Forum

Implementing ISO Summit Outcomes

<u>November 8</u>
ISO Forum

To Be Determined

<u>December13</u>
Metadata Working Group

Implementing ISO Summit Outcomes