FEDERAL METADATA COORDINATORS’ WEBINAR:
ISO GEOSPATIAL METADATA IMPLEMENTATION
USE CASE: U.S. CENSUS BUREAU

Day Two
ISO Geospatial Metadata Implementation

Wednesday
April 17, 2013
12:00-4:00 PM
The Census Bureau's mission
- To serve as the leading source of quality data about the nation's people and economy.

Geography Division (GEO)
- Geography is central to the work of the Census Bureau, providing the framework for survey design, sample selection, data collection, tabulation, and dissemination.
- GEO produces geospatial data to support the Census and for public consumption

Data Production Environment for Public Products
- TIGER/Line shapefiles – automated process for metadata
- Cartographic Products – semi-automated process for metadata
- TIGERweb – currently manual process for metadata
The Path of Least Resistance
  - Postponed as many decisions as possible in order to just get started

We did make one decision immediately
  - Just transform new metadata into ISO format
OUR FIRST STAGE ACTIVITIES

ISO Geospatial Metadata Implementation Model Workflow

Planning Team:
- Include:
  - lock & management staff
  - varied units/disciplines
  - champions
- Assign roles:
  - planning
  - implementation

Metadata Templates:
- Incorporate standards into single record
- Include:
  - custom domains
  - fixed content
  - value restrictions

Metadata Components:
- Include:
  - contacts
  - sources
  - methods
  - Identify component registry

Transform Approach:
- Which metadata
  - all
  - select
  - none
- Identify:
  - Metadata editor/import
  - XSLT:
    - publication e.g. GeoPlots
  - New/transform edits

Establish Geospatial Metadata Foundation:
- Inventory metadata resources
- Address shortcomings

Develop ISO Metadata Implementation Plan:
- Establish planning team
- Select ISO standards
- Select ISO editor
- Build organizational metadata record templates
- Build metadata component library
- Determine UUID assignment
- Establish transform approach
- Establish implementation policy & timeline
- Establish training & outreach plan

Initiate ISO Geospatial Metadata Implementation:
- Educate staff
- Train metadata creators
- Pilot implementation
- Revise plan based on pilot outcomes
- Create & publish ISO geospatial metadata
- Actively participate in ISO metadata awareness community

Metadata Resource Inventory:
- Metadata holdings
- Staff
- Policies
- Tools
- Community
- Training
- Infrastructure
- Standards

ISO Standards:
See ISO Standards Overview

ISO Editor:
See FGDC ISO Editor Review

UUID Assignment:
- Identify & explore UUID options

Policy and Timeline:
- Directive or guidance
- Applicable agencies/units
- Required plan components
- Staged timeline
  - apply to new metadata
  - transform existing records

Training Plan:
- Existing online training
- Available training materials
- Develop or procure custom training
We have a Geography Division Product Metadata Standard (GPMS)
- References OMB and internal mandates
- States that metadata must be produced for public products
- Identifies mandatory elements based on our products and consumers

Shortcomings
- Need to update the GPMS to refer to ISO instead of CSDGM
- GAO said we need Department of Commerce level metadata policies
- We will be preparing DOC level metadata policies in FY13

Metadata coordination and implementation staff
- Implementation manager, metadata content subject matter staff, and programmer contained within one organizational unit
We took advantage of every training opportunity
- FGDC CAP grant sponsored training by Westat 2010/2011
- NOAA Data Documentation workshop June 2011
- FGDC Metadata Summit October 2011
- NOAA Webinar series spring 2012
- NOAA Webinar series winter 2013
We regularly participate in FGDC Working Group activities

We stay engaged with our product leads and software support team within GEO to continuously review and improve our content and procedures

- Made significant improvements to TIGER/Line metadata content in 2012
- Working with software support team to have a user interface to review and specify requirements

Infrastructure

- Requirement specifications drive the production process
- Metadata holdings
  - CSDGM publishing process in place
  - Metadata files consolidated in Web Accessible Folders (WAF)
  - Accessible to geo.data.gov harvesting

- Tools
  - Stylus Studio XML editor
  - oXygen XML editor
  - Saxon software for production validation
    - Open Source XSD and XSLT processor
OUR SECOND STAGE ACTIVITIES
We chose to implement ISO 19115-2
  - The transforms were available

We wanted to implement 19110
  - Postponed until other pieces were in place

We knew we needed to implement 19119 for web services
  - TIGERweb

We set a goal to produce ISO metadata in FY12
  - We were minimally successful in meeting that goal
  - Now on target for ISO metadata for FY13 products
Three steps for creating our components

- First – translated one existing CSDGM metadata into ISO format
- Second – create a basic record that met our minimum requirement per the GPMS
- Third - refine to leverage incorporate advanced capabilities
SAVINGS WITH RE-USABLE COMPONENTS

- Reduced the size of the 19115 file by a third using re-usable components for contact info

- A tenfold reduction in file size (from over one thousand lines to less than a hundred lines) by using re-usable components for contact info and entity attributes in the 19110 file
OUR THIRD STAGE ACTIVITIES

ISO Geospatial Metadata Implementation Model Workflow

Planning Team
- Include:
  - Full-time management staff
  - Various units/divisions
- Assign roles:
  - Planning
  - Implementation

Metadata Templates
- Incorp. ISO standards into single record
- Include:
  - Custom domains
  - Fixed content
  - Value restrictions

Metadata Components
- Include:
  - Contacts
  - Sources
  - Methods
  - Identify component registry

Transform Approach
- Which metadata to apply
- Select sources
- Metadata editor/vox
- Metadata editor/import
- XSLT
- Publication, e.g., GeoPlatform
- ID to assign metadata

Establish Geospatial Metadata Foundation
- Inventory metadata resources
- Address shortcoming

Develop ISO Metadata Implementation Plan
- Establish planning team
- Select ISO standards
- Select ISO editor
- Build organizational metadata record template
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ISO Standards
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ISO Editor
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- UUID assignment
  - Identify & explore UUID options

Policy and Timeline
- Directive or guidance
- Applicable agencies/units
- Required plan components
- Staged timeline
- Apply to new metadata/transform existing meta

Training Plan
- Existing online training
- Available training materials
- Develop or procure custom training
Planning and finalizing
- Re-usable components/UUID implementation
- Entity and attribute approach
- Projection registration

Our pilot implementation will be in May – June timeframe
- Will produce both CSDGM and ISO metadata for products
- TIGERweb being the exception – just ISO metadata

Choose ISO metadata editor tool
- Low priority
# IMPLEMENTATION DECISIONS

<table>
<thead>
<tr>
<th>Issue</th>
<th>Implementation Approach</th>
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<tbody>
<tr>
<td>19115 or 19115-2</td>
<td>Chose 19115-2 due to availability of transformation/translation files</td>
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<tr>
<td>Convert existing metadata</td>
<td>Will prepare ISO metadata for new products only</td>
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<tr>
<td>Re-usable components</td>
<td>Will use for contact related info</td>
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<td>Detailed entity and attribute information</td>
<td>Will implement ISO 19110 and plan to leverage re-usable components</td>
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<tr>
<td>Projections</td>
<td>Plan to register our projections</td>
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<tr>
<td>Hierarchical format</td>
<td>Want to investigate as it applies to geo.data.gov and data.gov</td>
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Our first published ISO metadata file was for our TIGERweb services in 2012.

Our next will be ISO metadata for our 2013 cartographic data products (early summer 2013).

Then we will have ISO metadata for the 2013 TIGER/Line shapefiles (late summer 2013).
**NEXT STEPS**

- Conduct a lessons learned and move into a second phase of implementation
- Create ISO metadata directly rather than translating from CSDGM
- Make adjustments to our process if needed, to align with upcoming DOC policies
- If needed, adjust process to align with geo.data.gov and data.gov needs
USE CASE: CENSUS BUREAU

- Questions?
- Comments?