Federal Geographic Data Committee

Metadata Working Group

Quarterly Telecon
June 29, 2011

vers. 20110629

Outline

- Geospatial Intelligence Standards Working Group (GWG) Metadata Focus Group (MFG) Activities
- ISO/NAP Metadata Status and Activities
- ISO Metadata Implementation Testing
- ArcGIS 10.x Metadata User Issues
- ArcGIS 10.x Metadata Resources
- News From the Field
    – Minnesota Metadata Workgroup
    – Other?

Geospatial Intelligence Standards Working Group (GWG) Metadata Focus Group (MFG)

Charles Heazle, WiSC Enterprises

GWG Overview

- The Director, National Geospatial-Intelligence Agency (NGA) is the functional manager for GEOINT standards.

- The GWG is a National System for Geospatial-Intelligence (NSG) forum that serves in executing the functional management responsibilities authorized in NSG Directive ST 8100, 1 March 2007.

- The GWG is also the Joint Technical Working Group for GeoINT standards supporting both the DoD and IC standards governance processes.

- The GWG consists of eight chartered focus groups made up of subject matter experts that address topical issues related to GEOINT standards.

Geospatial Intelligence Standards Working Group (GWG) Metadata Focus Group (MFG)

GWG Metadata Focus Group Scope

- GWG-MFG will deal with those aspects of the standardization of GEOINT relating to imagery, sensor and geospatial metadata

- GWG-MFG will coordinate activities between the various recognized organizations and will assume a leading role in the development of standardized metadata in respective communities

Geospatial Intelligence Standards Working Group (GWG) Metadata Focus Group (MFG)

NSG Metadata Foundation (NMF) Part 1, Vers. 2.0

- The NMF Defines the conceptual schema for specifying geospatial metadata in and for the National System for Geospatial-Intelligence (NSG)

- The companion NSG Metadata Implementation Specification (NMIS) defines the methods for specifying and encoding geospatial metadata in the NSG.

- The NMF is a multi-part standard. Part 1 contains the conceptual schema profile. Additional parts will contain governance rules, extensions, among other things.

- The main goal of the NMF is to support the data discovery and interoperability needs of the NSG in both today's and tomorrow's systems. To meet this goal, the NMF's conceptual schema profile was developed using input from International Standards and domestic specific

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NMF Status

- Version 1.0
  - NSG Metadata Foundation (NMF) Part 1: Conceptual Schema Profile version 1.0 was delivered April 27, 2010
  - NMF V 1.0 registered in the DISR as an emerging standard June 2010

- Version 1.5
  - NMF v1.5 was circulated for comment on October 12, 2010

- Version 2.0
  - Addressed comments on version 1.5
  - NMF 2.0 DISR Change Request approved for DISR 11-1 cycle
  - NMF 2.0 is a mandated standard in the DISR and ICSR as of April 22, 2011

Geospatial Intelligence Standards Working Group (GWG) Metadata Focus Group (MFG)

NSG Metadata Implementation Specifications (NMIS)

Part 1 – Logical Model

Specifies a common NSG-wide logical metadata model (UML & OCL) for geospatial data and data resources, rules for restricting and/or extending that logical model, and a set of logical conformance tests.

- **Core platform-independent logical model for geospatial data and data resources**

Part 2 – XML Exchange Schema

Specifies a common NSG-wide XML-based exchange schema, rules by which that schema was derived from the Logical Model, a set of rules for restricting and/or extending that schema, and a set of physical conformance tests.

- **High-value data exchange schema for direct use in NSG participant implementations**

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NSG Metadata Implementation Specifications (NMIS) (cont'd)

Part 3 – Publication for Geospatial Resources

    Specifies a common NSG-wide logical model for deriving externally-specified metadata sets (*e.g.,* IAW the DoD Discovery Metadata Specification) from NMIS-conformant metadata sets, a set of rules for tailoring that logical derivation model
as necessary for specific business practices, and technology-specific mechanisms (*e.g.,* XML stylesheets) for implementing that logical derivation model.

        ○ How "NSG Metadata" shall be re-purposed for use by external communities

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NMIS Status

- NMIS – Part 1: TBD

➔ NMIS – Part 2: Mandated DISR Baseline 11-1.0
  - Specifies an XML grammar (encoding) written in XML Schema and Schematron
  - Requirements
    - Content established in the **NMF – Part 1**: **Conceptual Schema Model**
    - Structure established in the **NMIS – Part 1: Logical Model**
  - NMIS encoding schema imports, profiles, and/or extends:
    - ISO/TS 19139:2007 Metadata – XML schema implementation
    - ISO 19136:2007 Geographic Markup Language (GML)
    - XML Data Encoding Specification for Information Security Marking Metadata,
      Version 4 (DES.ISM.XML.V4)

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NMIS Status (cont'd)

- NMIS – Part 3: TBD
  - Specifies XSLT-based mechanisms for deriving metadata for "external use"
  - Initial emphasis on DDMS-based publication in the Enterprise Catalog & use with IC/DoD Content Discovery and Retrieval (CDR) specifications
    - ○ OpenGIS Filter Query Type Specification for SOAP Implementations *(draft V1.0)*
    - ○ DDMS Search Guide *(draft V1.0)*

ISO/NAP Activities and Status

*Dave Danko,
ESRI/INCITS L1*

ISO 19115-1
Metadata -
Fundamentals

- ISO 19115:2003 Metadata
- ISO 19115 Corrigendum
- ISO 19119:2005 Services and extensions for service metadata model (Part)
- User suggestions
- Lessons learned
- New methods
- Changes in related standards

ISO/NAP Activities and Status

New in ISO 19115-1:

- Backward compatible*

- Feature catalog included (physically or by link)

- Many new elements added or replaced (online linkage in Citation)

- Reference system type code attribute added to reference system identifier

- Responsible party restructured to enable reuse for different roles

- Data quality (except Lineage) removed to ISO 19157

*by translation

ISO/NAP Activities and Status

ISO 19115-1 related items:

- Annex provided showing changes and mapping between old and new elements

- New XML namespace in new ISO 19139

- An XSLT would be provided in ISO 19139 revision

- Old implementations would remain compliant to ISO 19115:2003/ISO 19139:2007

- Old ISO 19139:2007 schemas would remain in place indefinitely

- New implementations would be compliant with ISO 19115-1:2013/ISO 19139:2013

ISO/NAP Activities and Status

Other items:

- Revision and concept used for backward compatibility described in Introduction

- No new mandatory unless replacement element

- If a metadata element's definition/concept changed it was replaced (old names not used)

- Metadata element's type allowed to change without replacement

- Concepts of <deprecated> and <new> goes away
  - delete deprecated elements and present in annex

- Model refactoring – OK
  - Very minor (responsible party?)
  - Maintain element order wherever possible

ISO/NAP Activities and Status

ISO 19115-1 Schedule:

- Committee Draft released   2011-01
- Editing committee meeting – Delft, NL   2011-5-23-26
- EC document to ISO TC 211 members   2011-8-31
- Vote in Pretoria   2011-11-18
- Draft International Standard (DIS) - firm   2011-12
    ISO 19139 (xml schema) update expected to begin
- Final Draft International Standard (FDIS)   2012-12
- International Standard   2013-05

ISO/NAP Activities and Status

NAP will be updated to:

First, reflect ISO 19115-1 and preserve key changes:
- increased conditionality for some elements
- extended domains for some elements
- best practices
work initiates when ISO 19115-1 reaches DIS

Then… consider enhancement of 19115-1 feature catalog implementation

ISO Metadata Implementation Testing
Jennifer Carlino, USGS / FGDC CAP Detail

FGDC examining options to support ISO Metadata implementation testing projects

Expected Project Outcomes:
- CSGDM to ISO 19115-1 transformation, validation & publication
- documentation of:
  - methods/strategies
  - technical and organizational issues
  - successes/challenges/solutions
  - recommendations for others
- FGDC compilation of findings/recommendations

ISO Metadata Implementation Testing

Options for sponsoring projects:

– CAP 2012

limited to non-fed NSDI Stakeholders

– FGDC Coordination Group initiated project

federal agency participation

Discussion:

Is there sufficient interest:

– CAP interest?

– Coordination Member interest?

Other options/approaches?

User Implementation ArcGIS 10.x

Curtis Price, USGS

Keep in mind

- simple metadata presentation encourages users to enter some basic information

    - metadata authors need to know options of going beyond simple

- Arc10 has significant ISO metadata flavor, however many users need CSDGM info

    - especially attribute descriptions and citations

User Implementation ArcGIS 10.x

Specifics:

- Arc 10 metadata functionality includes tools which can be very useful – with some effort

- CSDGM view/export included with SP 1

- Best way to create a metadata record:

  1. use ArcCatalog to populate things automatically
  2. export to xml or text to strip the ESRI-specific tags
  3. final cleanup and check with mp or other tools

User Implementation ArcGIS 10.x
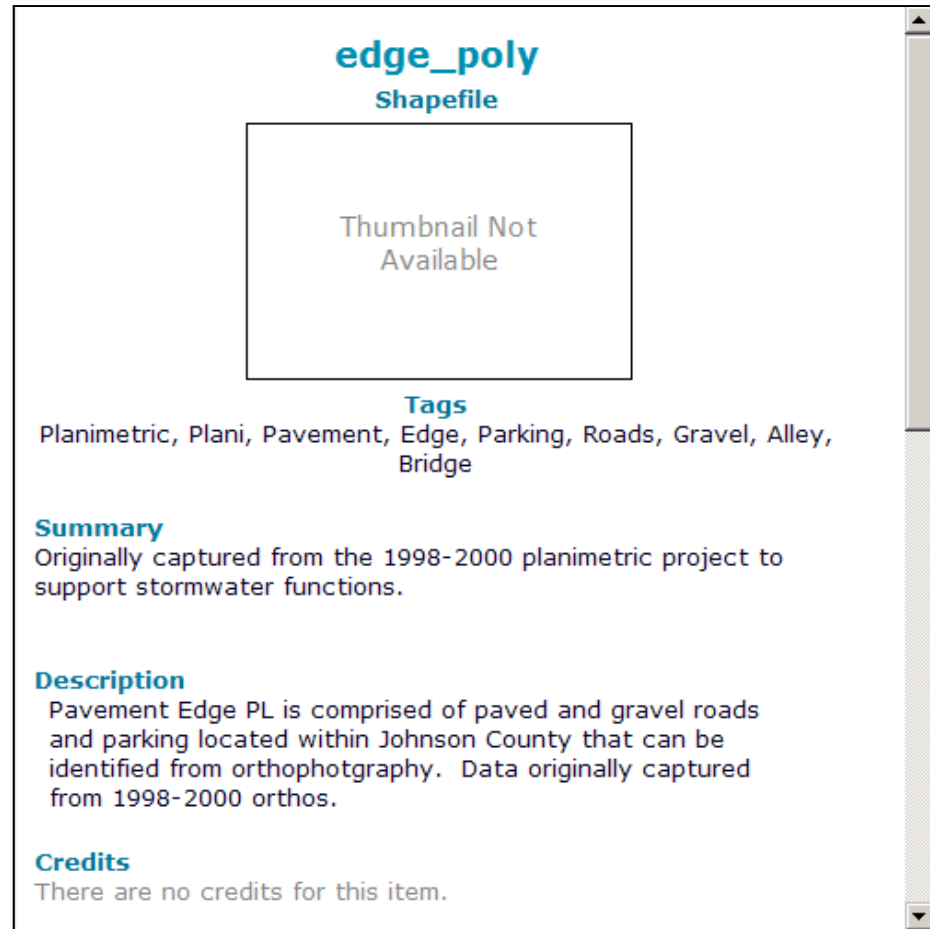
Outstanding Issues:

- missing CSDGM elements
- lack of CSDGM editor or tools to build one
- lack of metadata support in server products

User Implementation ArcGIS 10.x

Default "Item Description" view

- Who stole
  my metadata?

User Implementation ArcGIS 10.x

FGDC CSDGM Metadata Style
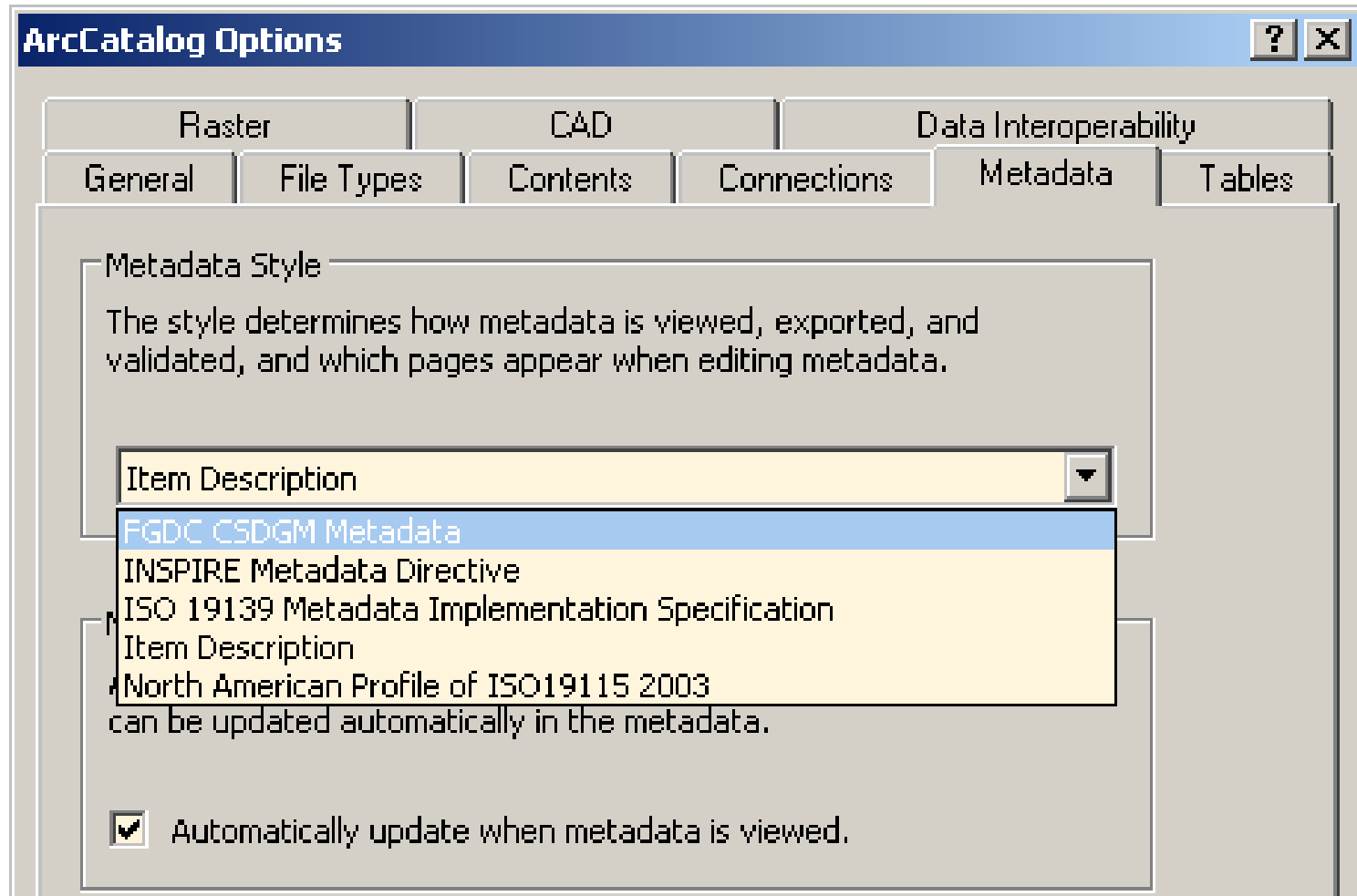
User Implementation ArcGIS 10.x

FGDC style shows old and new

ArcGIS Metadata ▼

FGDC Metadata ▼
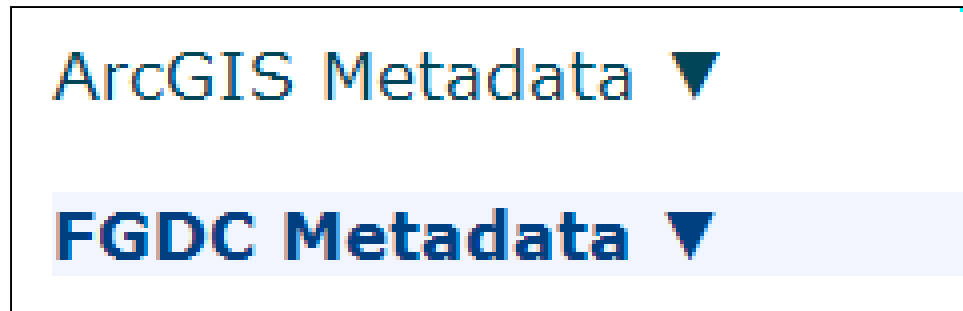
Arc 10
edit/refresh in Arc 10

Arc 9.x
edit only with 10.x add-in (download)

User Implementation ArcGIS 10.x

ArcGIS Metadata Tools

- Tools for new Arc 10 metadata format

- Import (+translate)

- XSLT transforms

- Export (+translate)

- Many standards supported out-of-the-box

Conversion Tools.tbx
- From KML
- From Raster
- From WFS
- Metadata
  - ESRI Metadata Translator
  - Export Metadata
  - Export Metadata Multiple
  - Import Metadata
  - Metadata Importer
  - Metadata Publisher
  - Synchronize Metadata
  - Upgrade Metadata
  - USGS MP Metadata Translator
  - Validate Metadata
  - Validate Metadata Multiple
  - XML Schema Validation
  - XSLT Transformation
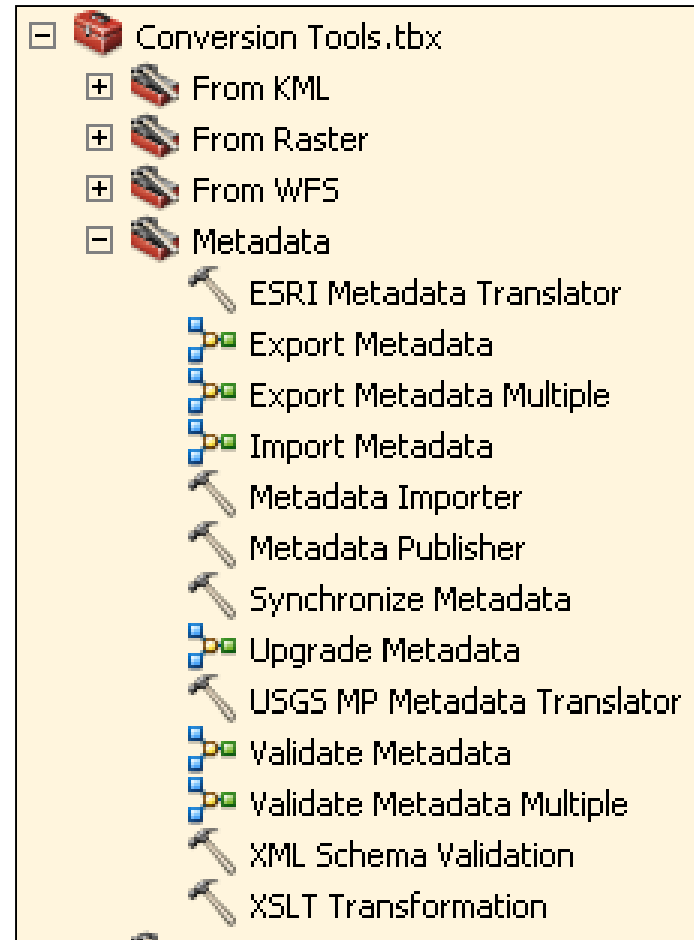
User Implementation ArcGIS 10.x

'Upgrade Metadata' Tool

ArcGIS Metadata ▼

FGDC Metadata ▼

Arc 10
*edit/refresh
in Arc 10*

*Not
complete!*

↑

Arc 9.x
*edit only with
10.x plug-in*

User Implementation ArcGIS 10.x

USGS CSDGM Metadata Tools

Model   Edit   Insert   View   Windows   Help

Source
metadata

P

Get DTD path

FGDC 1998 dtd

Validate
Metadata

P

Output XML
file

Get translator
file path

ArcGIS2FGDC
Translator
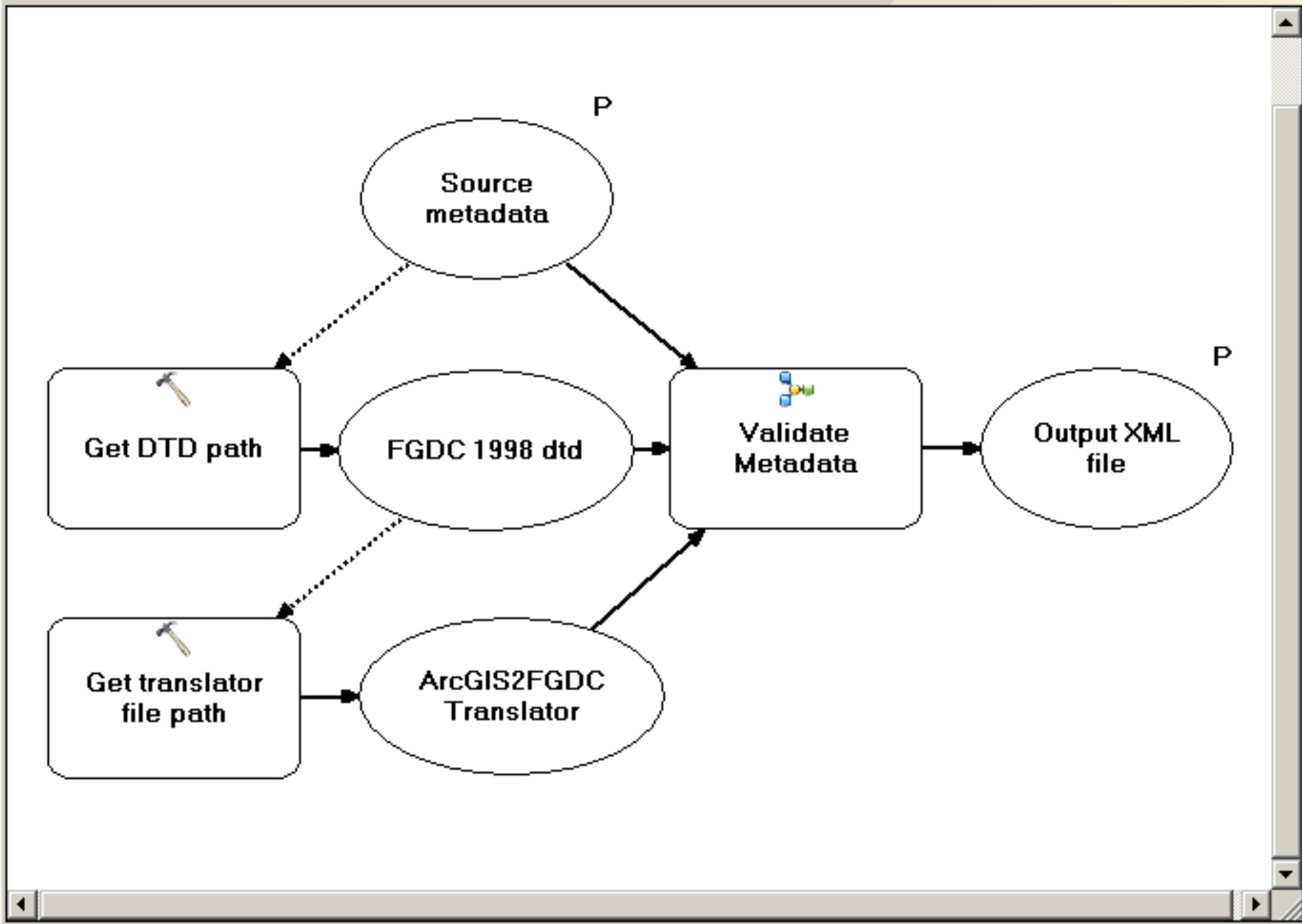
User Implementation ArcGIS 10.x

References

- ArcGIS Desktop blog:
  - A New Approach to metadata with ArcGIS
    http://blogs.esri.com/Dev/blogs/arcgisdesktop/archive/2011/01/03/A-new-approach-for-Metadata-with-ArcGIS-10.aspx
  - FGDC Metadata Add-In
    http://blogs.esri.com/Dev/blogs/arcgisdesktop/archive/2010/06/25/FGDC-Metadata-Editor-for-ArcGIS-10.aspx

ArcGIS 10: Creating and Managing CSDGM Metadata

Jason Cupp, ESRI

- Help Topic
  - http://help.arcgis.com/en/arcgisdesktop/10.0/help/index.html#/Creating_and_managing_FGDC_metadata/003t00000031000000/
  - general workflow for CSDGM metadata users

- CSDGM/NAP Patch for 10.0 SP2
  - available beginning of August.
  - complete illustrated guide for producing CSDGM
  - expanding on the help topic

- ArcGIS Metadata Toolkit to be released mid-August
  - Mix custom pages with out-of-the-box pages using a custom style

- Metadata Special Interest Group (SIG) Meeting at Esri UC: Wednesday, July 13, 5:30-7:00 PM, Room 12

News from the Field

- ▪ Minnesota's Metadata Workgroup
  Nancy Rader, MnGeo

  New workgroup is re-examining Minnesota's streamlined version of CSGDM: the MN Geographic Metadata Guidelines or "MGMG"

  We are:

  ❑ Adapting the EPA Metadata Editor (EME) for MGMG since our custom MGMG Editor for ArcCatalog 8 & 9, written in VB, no longer works in ArcGIS 10.

News from the Field

Minnesota's Metadata Workgroup Activities (cont'd)

❑ Updating MGMG to be compatible with NAP
- including all mandatory NAP elements
- removing the 4 MGMG elements not in NAP
- including elements for web services

❑ Planning to submit the updated MGMG for approval as a state standard
- users will remain free to use CSGDM or NAP if they prefer.

More info:

http://www.mngeo.state.mn.us/workgroup/metadata/index.html

News for the Field

- Other?

Thank you for your participation

Send questions/comments: Lwayne@fgdc.gov