



It's All About The Metadata

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Why metadata?

- Metadata is “data about data”
- It makes your geospatial data
 - Discoverable
 - For example: geodata.gov
 - Understandable
 - Usable
 - Appropriate use
 - Citable

Two primary metadata standards

- **Content Standard for Digital Geospatial Metadata, version 2**
a.k.a. CSDGM, “FGDC metadata”
- **ISO 19115 Geospatial Metadata**
 - Using ISO 19139 XML implementation
 - ISO 19139 North American Profile (2003) “NAP”

CSDGM components

- General Information
- 0 Metadata
- 1 Identification Information
- 2 Data Quality Information
- 3 Spatial Data Organization Information
- 4 Spatial Reference Information
- 5 Entity and Attribute Information
- 6 Distribution Information
- 7 Metadata Reference Information
- 8 Citation Information
- 9 Time Period Information
- 10 Contact Information

CSDGM Mapped to ISO standards

19115

19110

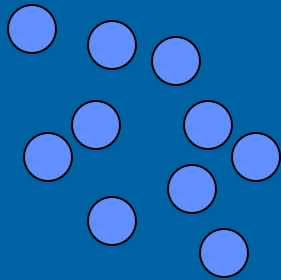
- General Information
- 0 Metadata
- 1 Identification Information
- 2 Data Quality Information
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New approach in ArcGIS 10

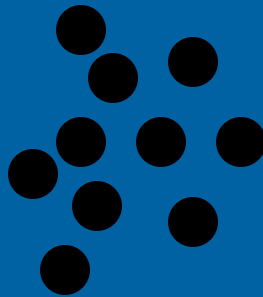
- **ArcGIS 9x**
 - Each standard had its own editor and schema (different XML tags)
- **ArcGIS 10x**
 - Metadata stored using one ArcGIS schema
 - One metadata editor (may be customized using open-source WPF toolkit).
 - Multiple standards are supported using tools that transform content using XML stylesheets (XSLT)

ArcGIS 10.0 Metadata Content

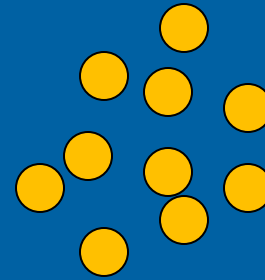
- New “ArcGIS 10 metadata” schema
- Old FGDC elements (and others) are kept



Arc 10 elements
(mostly ISO)

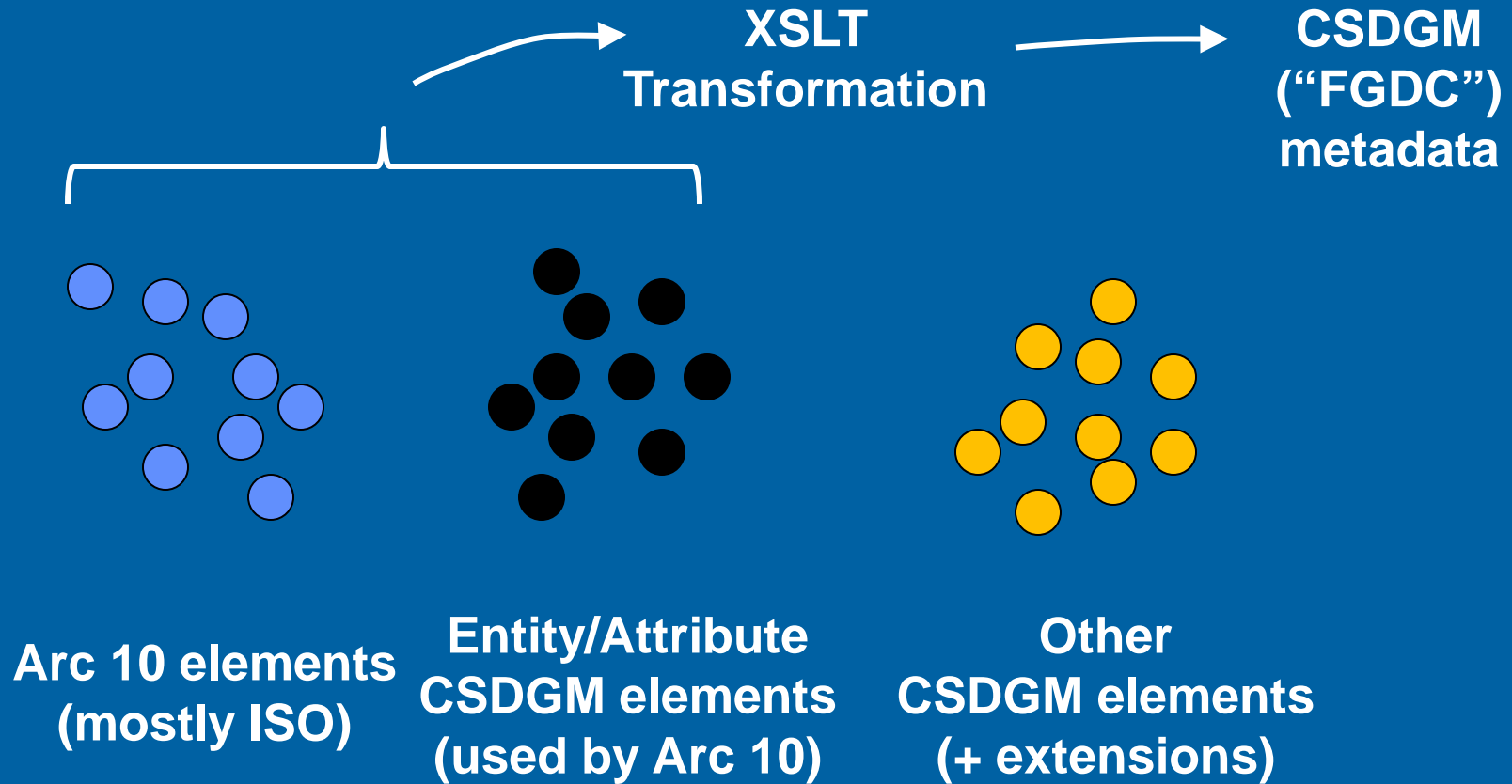


Entity/Attribute
FGDC elements
(used by Arc 10)



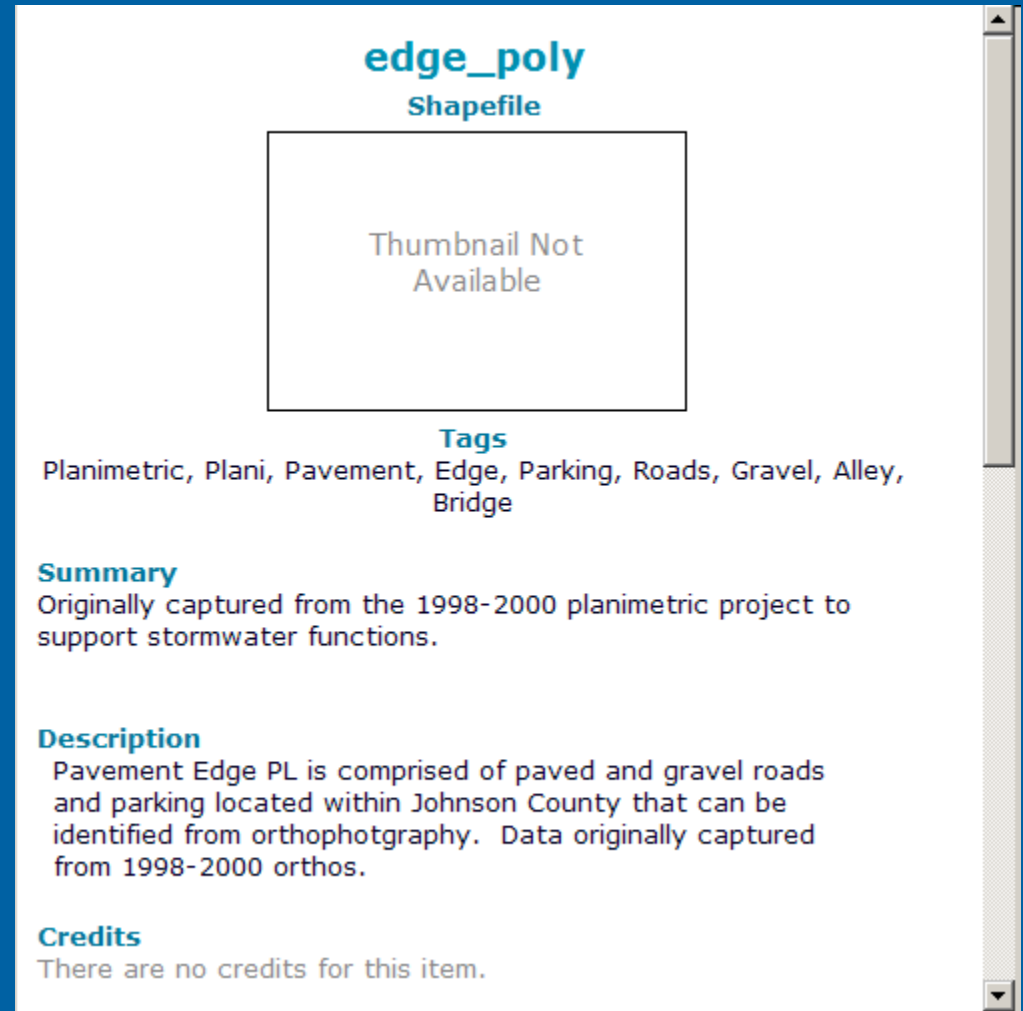
Other
FGDC elements
(+ extensions)
“read-only”

Creating CSDGM from Arc 10



ArcGIS “Item Description” view

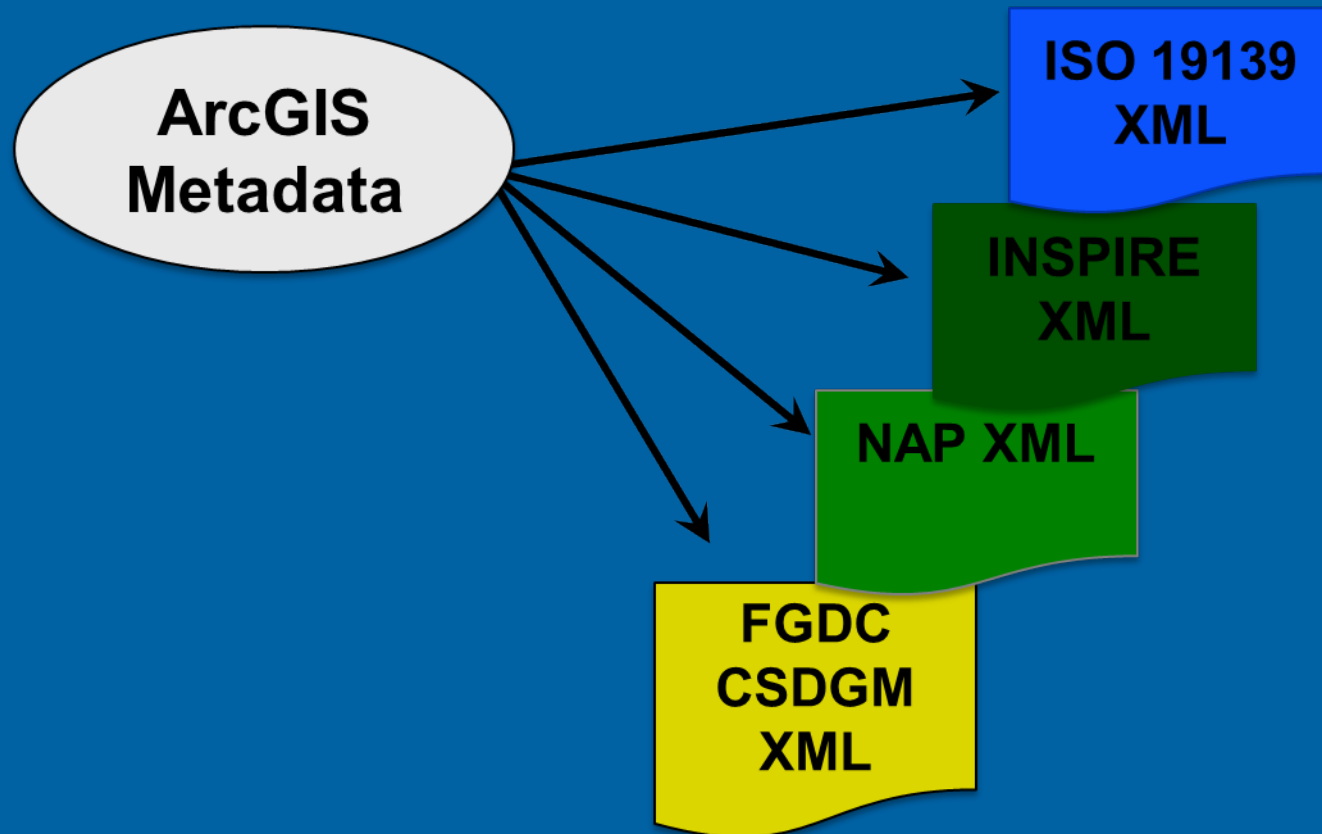
- “Who stole my metadata?”
- This view should be used for documenting ArcGIS objects (tools, layers) -- as opposed to datasets



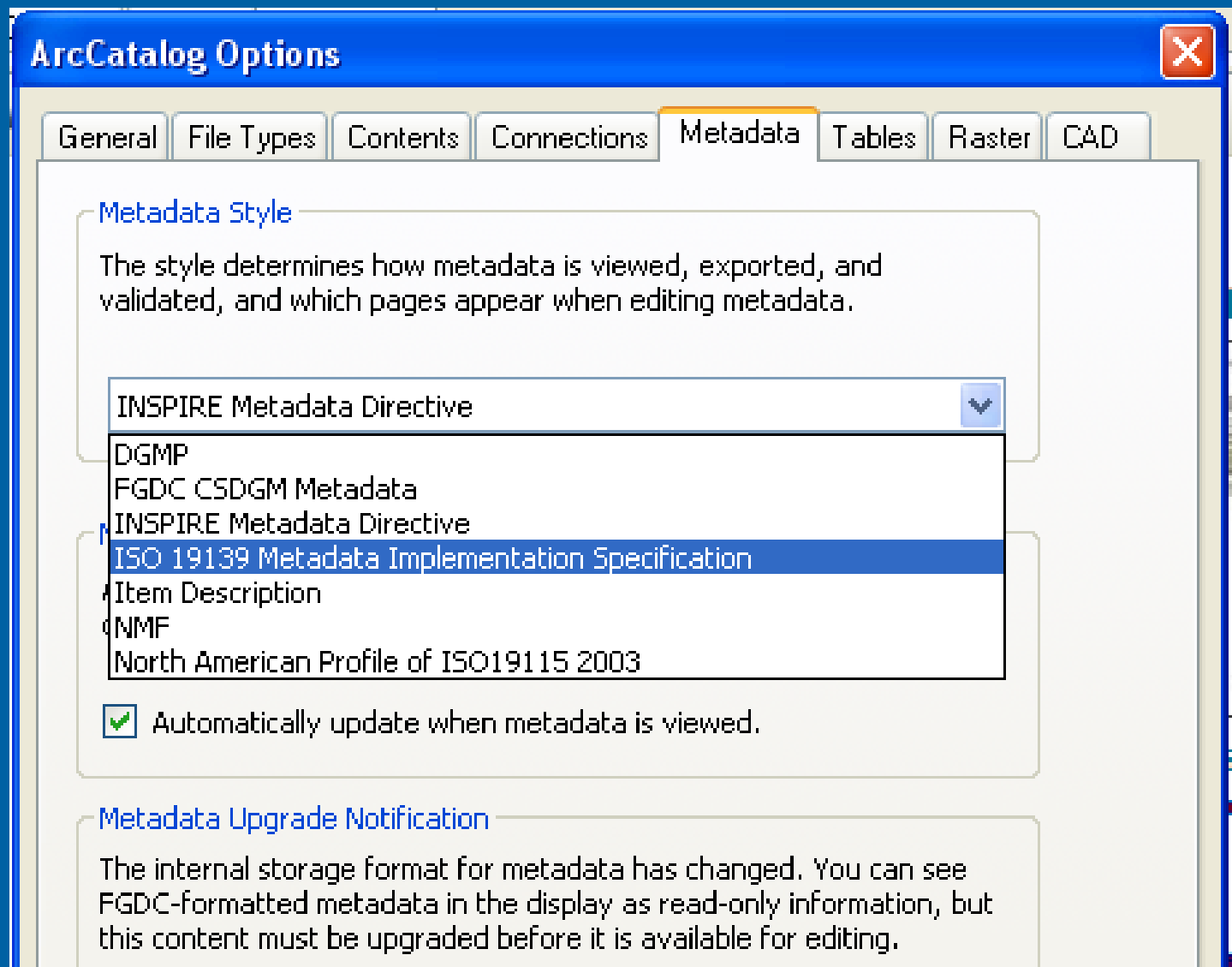
The screenshot shows the ArcGIS Item Description view for a Shapefile named "edge_poly". The title is "edge_poly Shapefile". Below the title is a placeholder for a thumbnail, which says "Thumbnail Not Available". Underneath the thumbnail is the "Tags" section, listing: "Planimetric, Plani, Pavement, Edge, Parking, Roads, Gravel, Alley, Bridge". The "Summary" section states: "Originally captured from the 1998-2000 planimetric project to support stormwater functions." The "Description" section states: "Pavement Edge PL is comprised of paved and gravel roads and parking located within Johnson County that can be identified from orthophotography. Data originally captured from 1998-2000 orthos." The "Credits" section states: "There are no credits for this item."

Configure ArcGIS for the standard you follow:

- Export from ArcGIS to a standard XML format



Configure ArcGIS for the standard you follow



ArcGIS 10.1 Internal Metadata Validation

- Identify and fix problems as you type

Page
flagged
for
having
errors



Save X Exit

Contacts Maintenance Constraints

Resource

Details

Extents Points of Contact Maintenance Constraints Spatial Reference Spatial Data Representat

Content

Quality Lineage Distribution Fields References Geoprocessing History

attribute description is required
band minimum value must be less than the maximum value
minimum value must be a real value

Content Information

Image Description

Attribute Description

Content Type Image

Band

Sequence Identifier / Type

Descriptor Band_1

Min Value not a number

Max Value 251

Units Empty

Peak Response

Bits per Value 8

The shortest wavelength the sensor is capable of collecting in this band. Data type: Real. From: ISO 19115:2003.

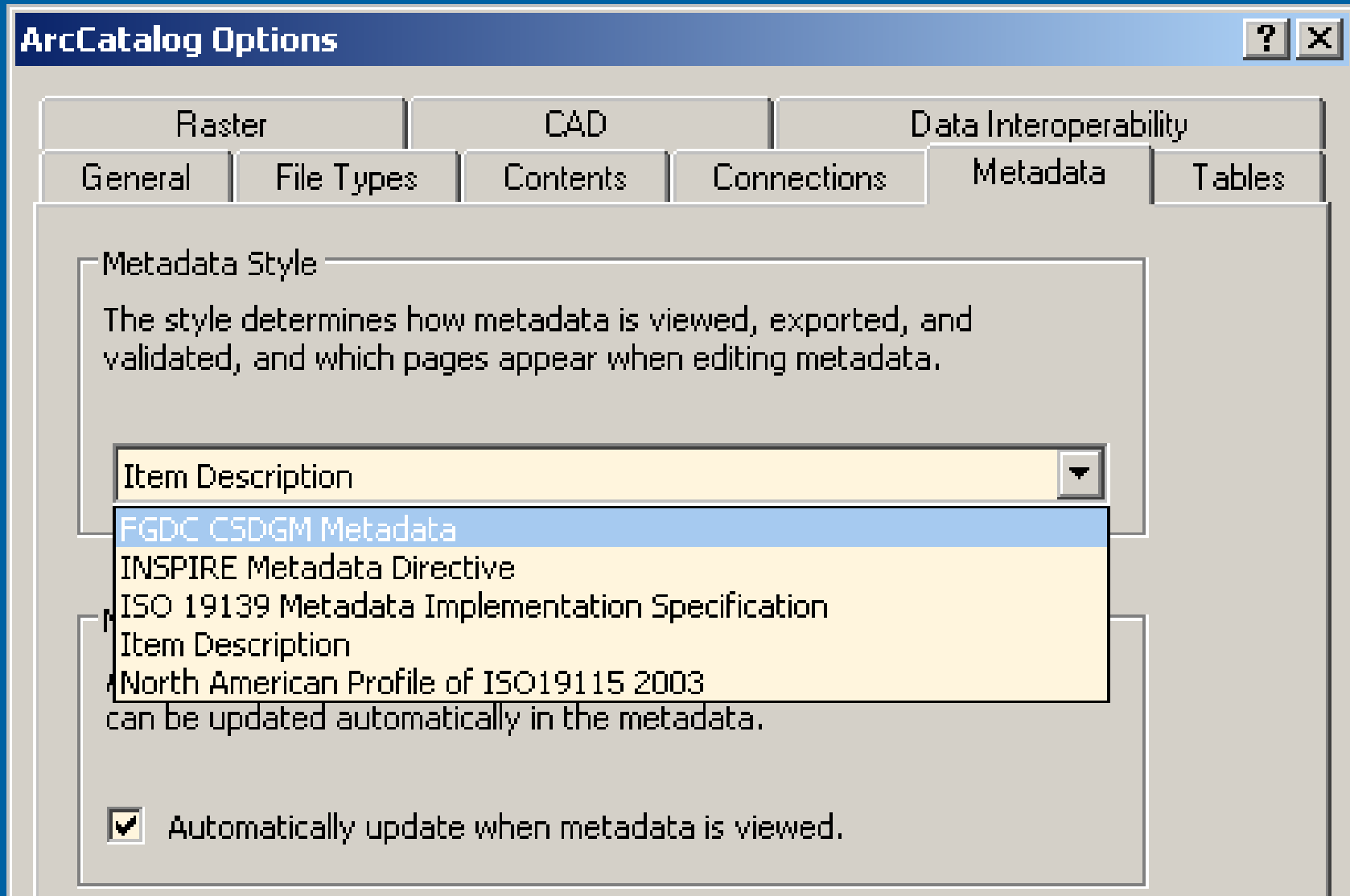
Problems
listed

Missing
required
value

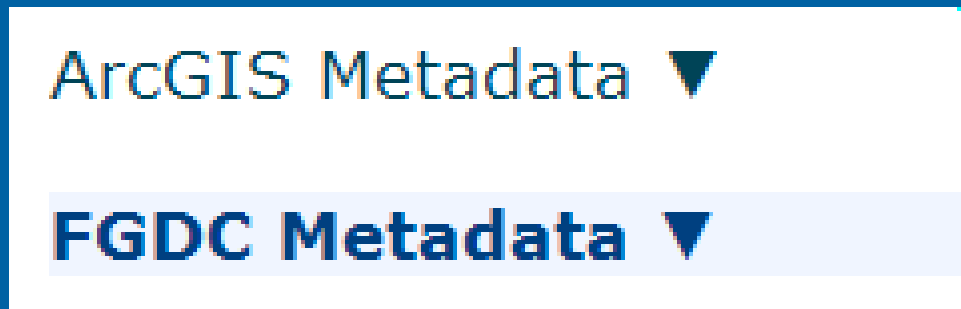
Invalid
data type

Expected
value
described

FGDC CSDGM Metadata Style



FGDC Style shows old and new

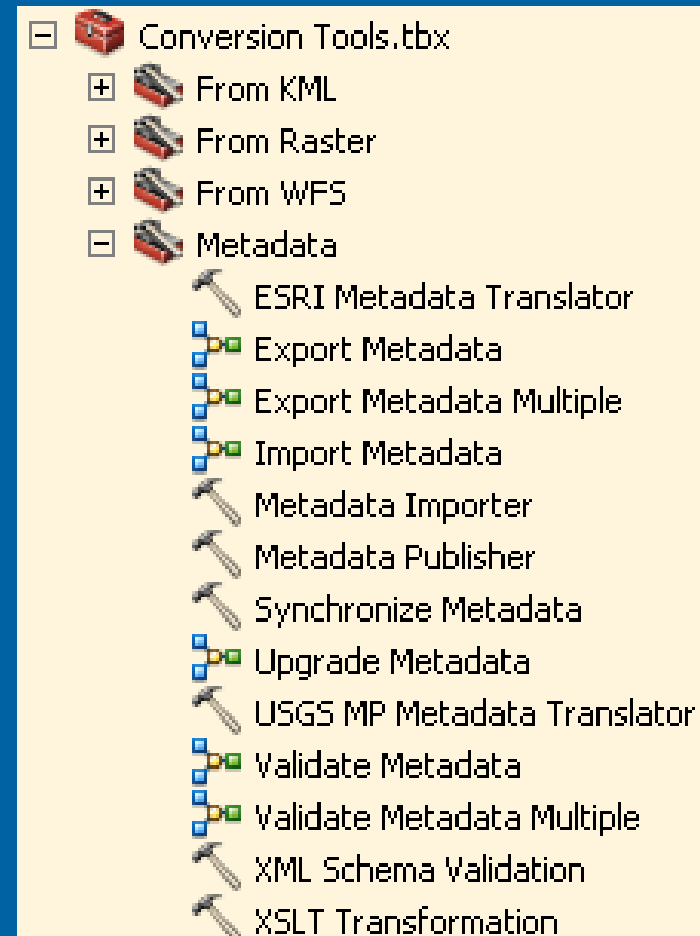


Arc 10
*edit/refresh
in Arc 10*

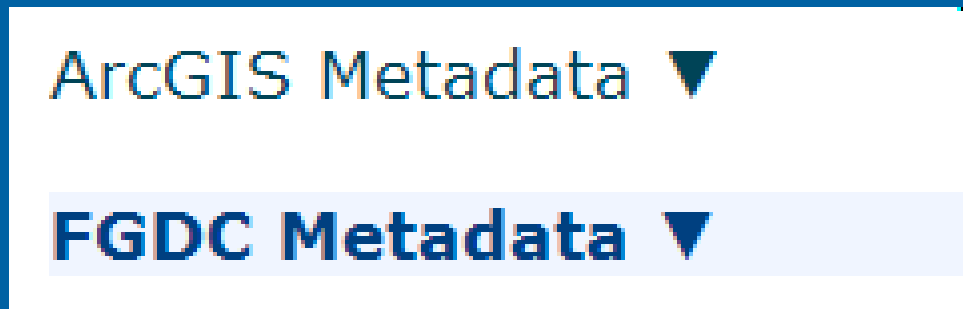
Arc 9.x
*edit only with
10.x addin
(download)*

ArcGIS metadata tools

- Tools for new Arc 10 metadata format
- Import (and translate)
- XSLT transforms
- Export (and translate)
- Several standards supported “out-of-the-box”



“Upgrade Metadata” tool

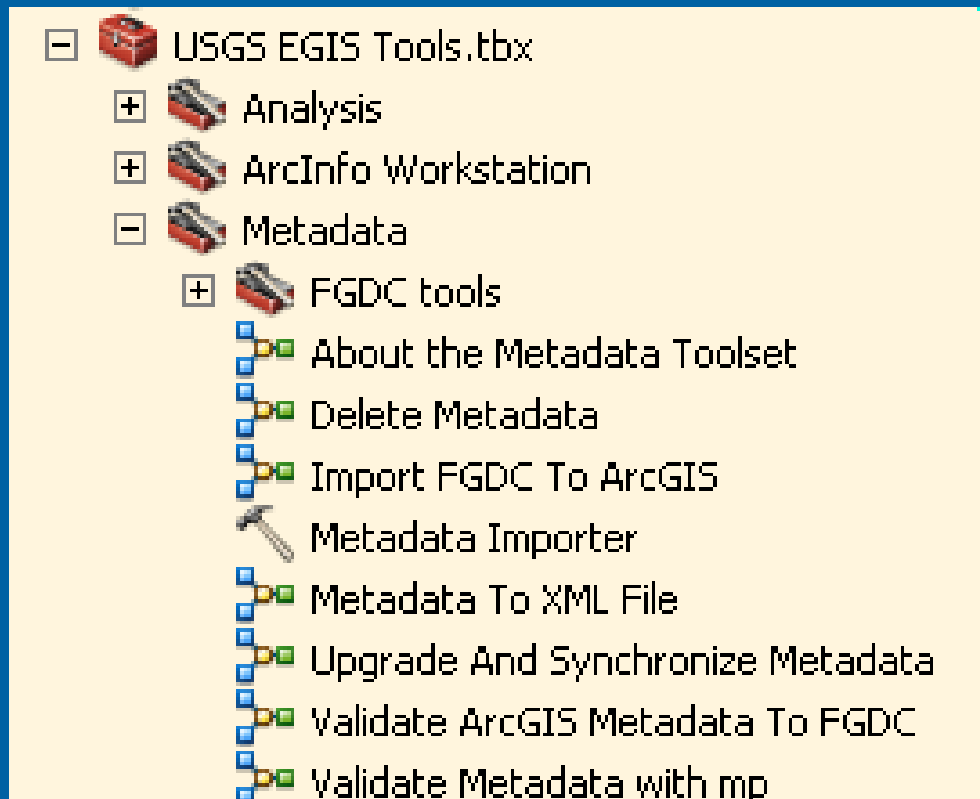


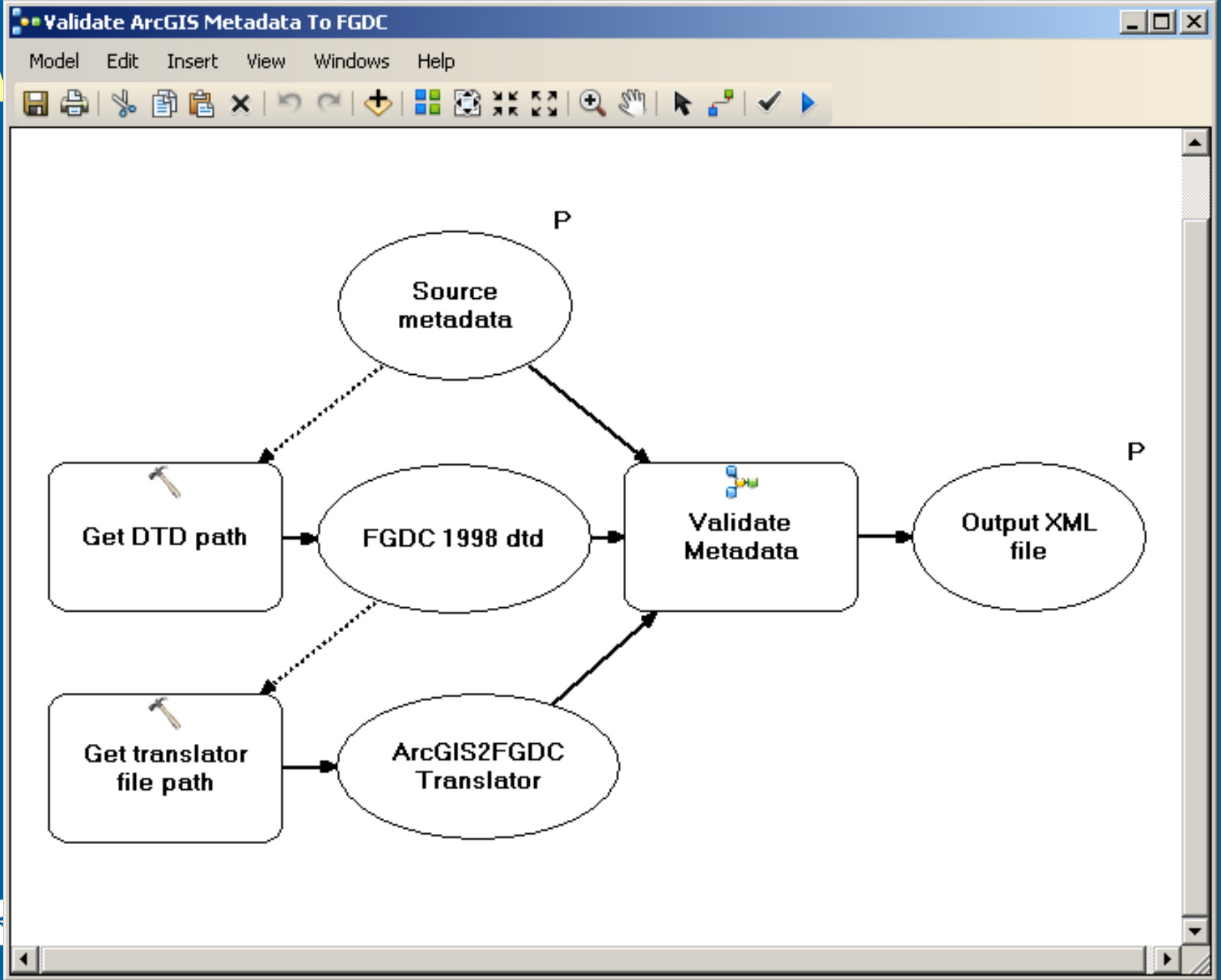
Arc 10
*edit/refresh
in Arc 10*



Arc 9.x
*edit w/ 10.x
plugin*

USGS CSDGM metadata tools





Takeaway

- Use Item/Description style when formal metadata not needed (i.e. working datasets)
- Complete detailed metadata for workgroup, organization, and public sharing
- Display and edit using the standards that meet your needs

References

- **FGDC: Geospatial Metadata**
<http://www.fgdc.gov/metadata/>
- **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 Editor Add-In**
<http://blogs.esri.com/Dev/blogs/arcgisdesktop/archive/2010/06/25/FGDC-Metadata-Editor-for-ArcGIS-10.aspx>
- **Illustrated guide to complete FGDC metadata**
<http://desktop.arcgis.com/en/desktop/latest/manage-data/metadata/illustrated-guide-to-complete-fgdc-metadata.htm>