



Understanding and Using Metadata in ArcGIS

Adam Martin

Marten Hogeweg

Aleta Vienneau

An abstract graphic on the right side of the slide. It features a 3D perspective view of various geometric shapes and lines in shades of blue, orange, and green. Some shapes resemble topographic contour lines or data points. The overall style is modern and technical.

**GIS
INSPIRING
WHAT'S
NEXT**



Adam Martin
National Government
Account Management
R&D Open Data



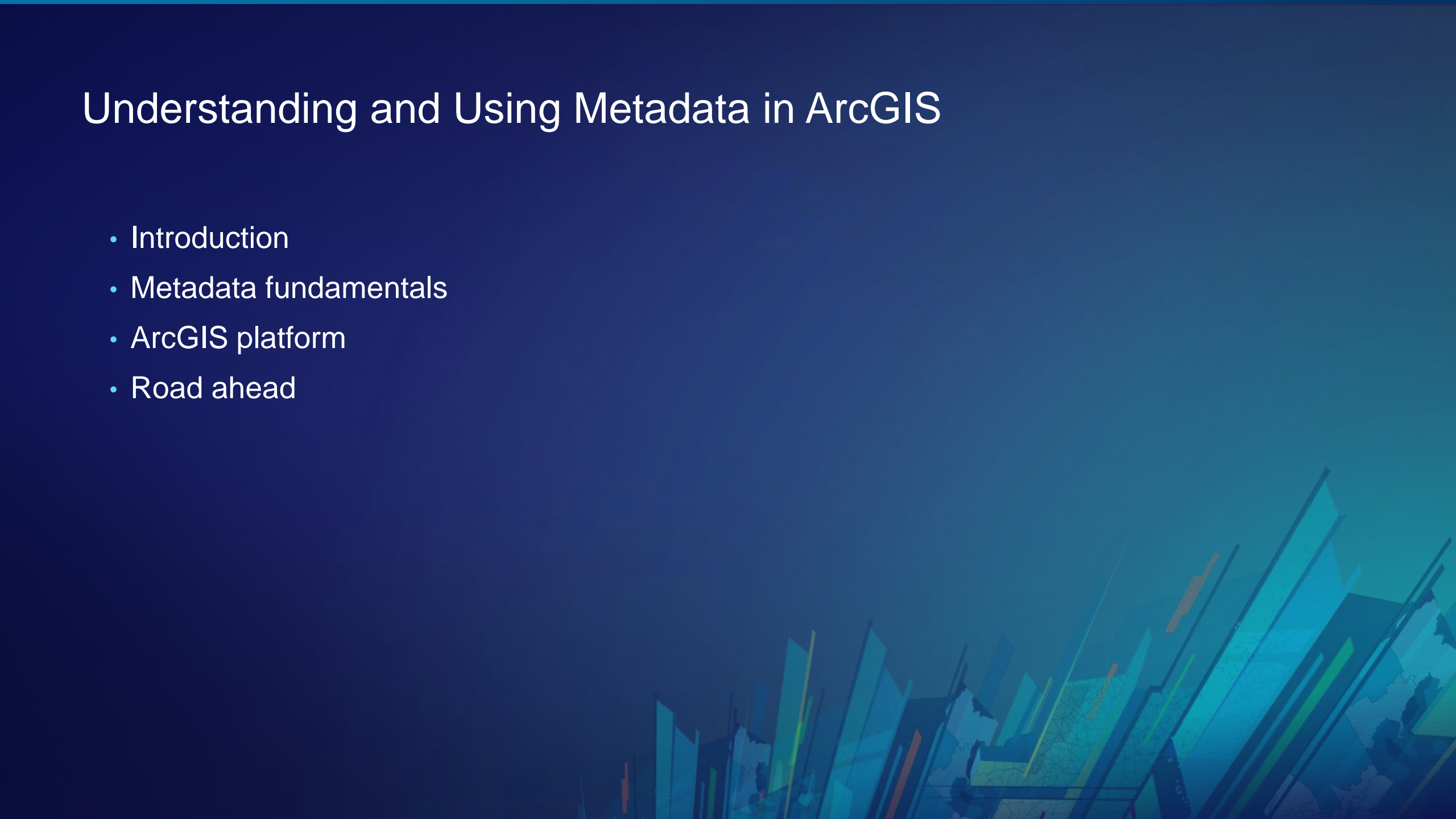
Marten Hogeweg
National Government
Professional Services
Geoportal Server



Aleta Vienneau
Desktop Product Development
Interoperability Teams
R&D Open Data

Interoperability Team

Understanding and Using Metadata in ArcGIS

- Introduction
 - Metadata fundamentals
 - ArcGIS platform
 - Road ahead
- 

Modern Software Needs and Requirements

Portability

Interchangeability

Extensibility

Interoperability

Standards Compliance

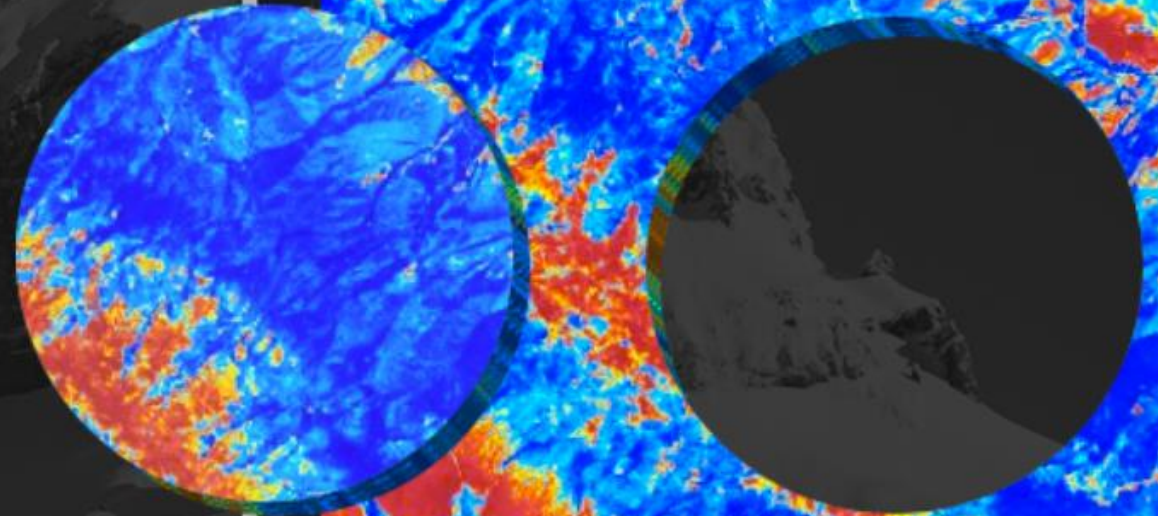
Componentization ...



Esri's Open Vision

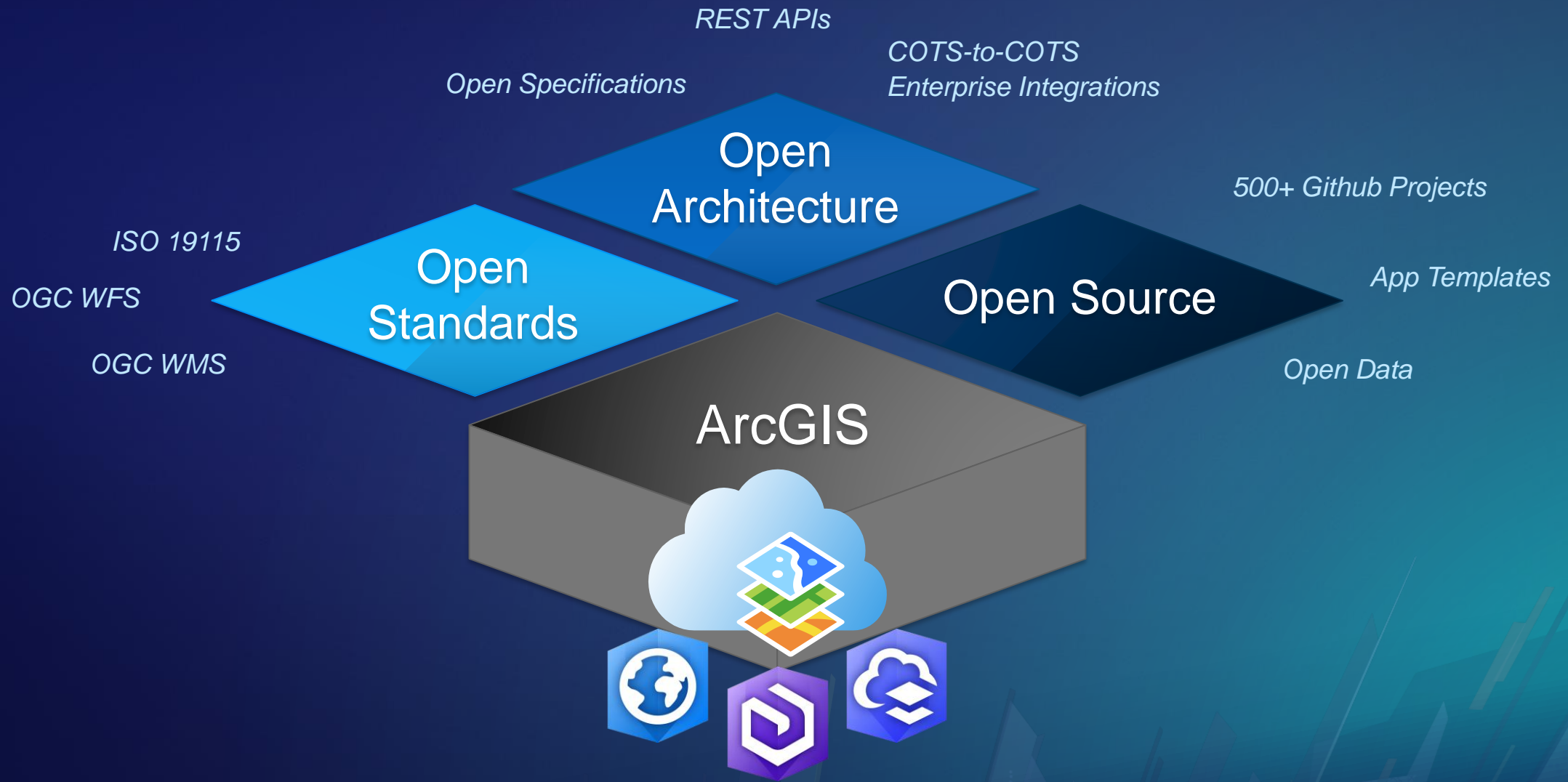
ArcGIS is an open, flexible, and interoperable platform that supports innovation

Our vision explained by Jack ▶



**Open systems encourage innovation,
support interoperability,
promote transparency,
improve reliability
and increase collaboration.**

ArcGIS is Open Out of the Box





Esri drives new standards and methods...

To solve customer problems



Creating new de facto
GIS standards

i3s

...and supports community standards

To enable interoperability and align with best practices

Industry

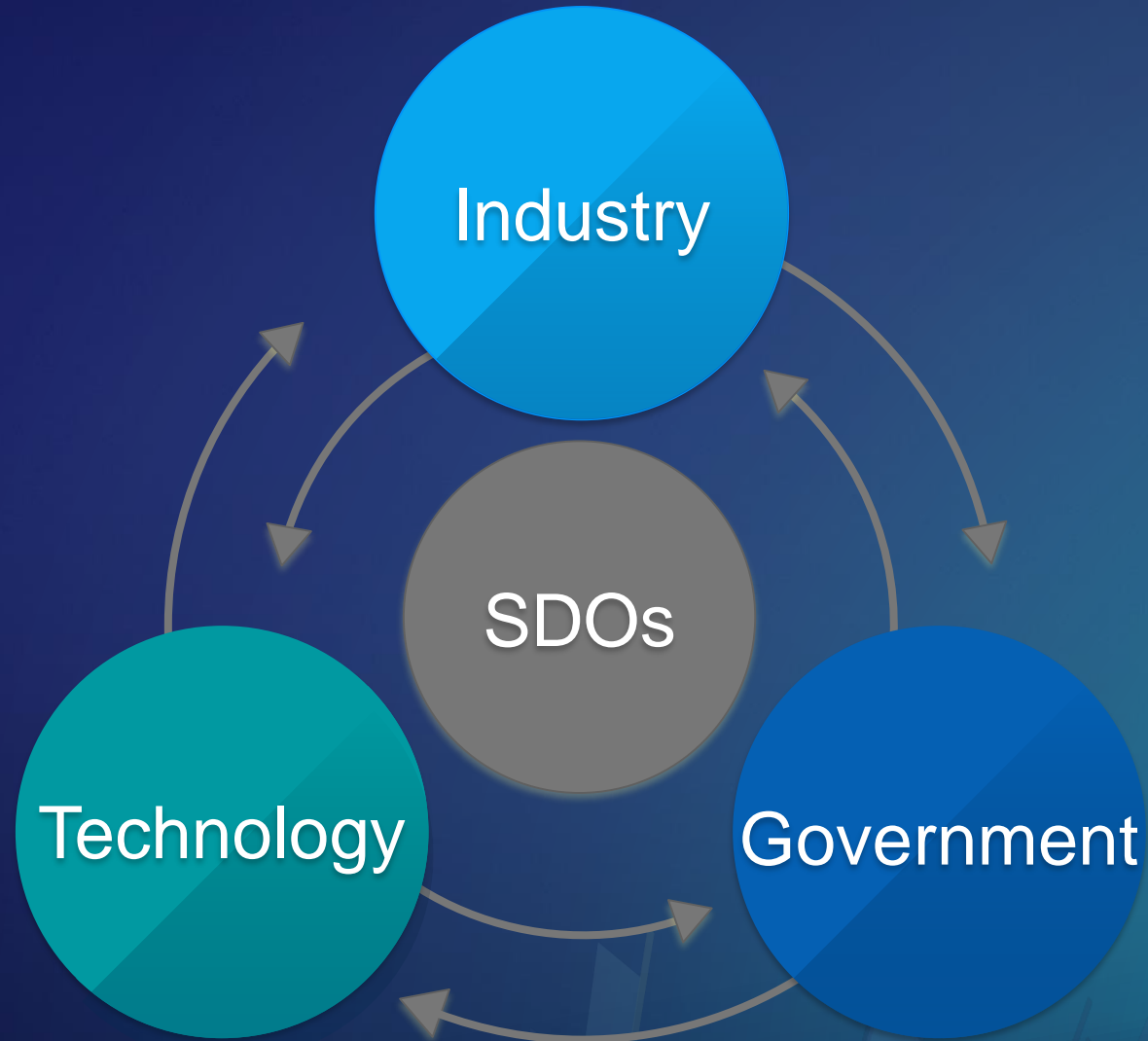
Prioritized by Customer
Demand



esri

Government

Standards creation process



ESRI supports standards through active participation

Organizations

- ISO TC 211
- OGC
- ANSI/INCITS -L1
- CEN
- Global Map
- GSDI
- DGIWG
- IHO
- GWG



Implementations

- IT/industry standards
- GIS standards

Standards Development

- International Standards
- Regional Standards
- National Standards
- Information Community Standards

Projects/Testbeds

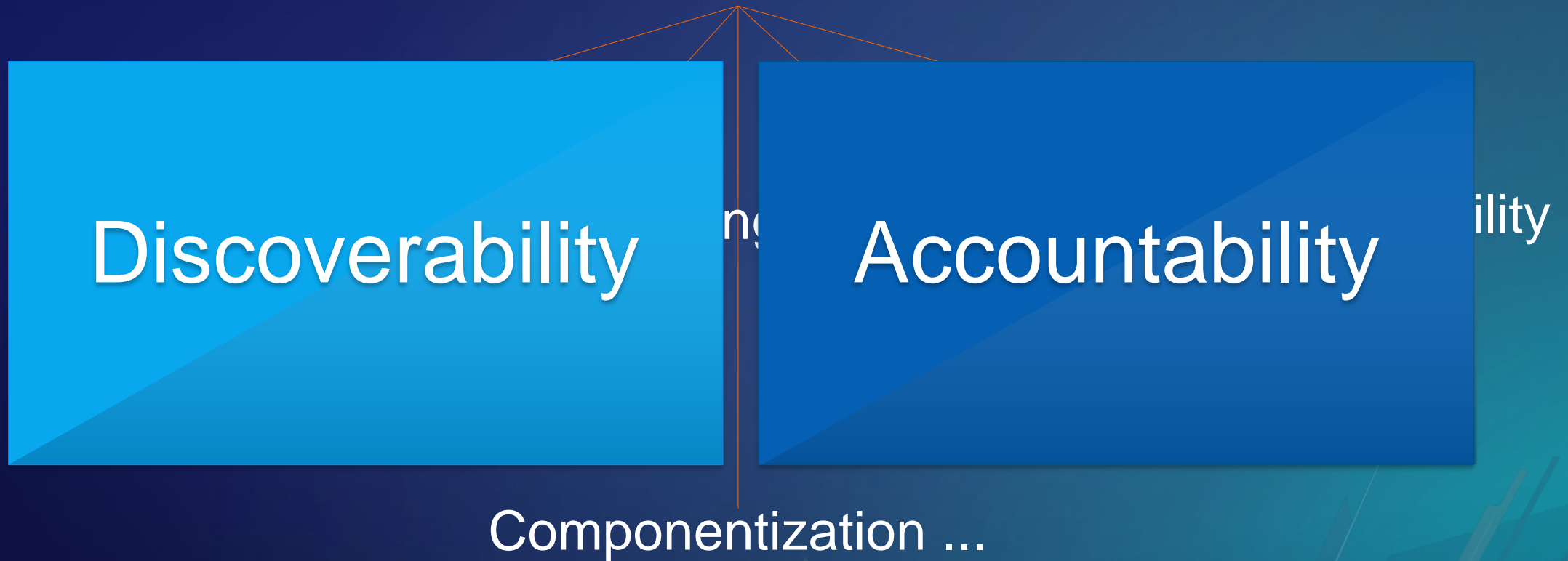
- OGC Web Services testbeds
- GEOSS
- INSPIRE
- NATO Core GIS

Metadata @ Esri



Modern Software Needs and Requirements

Metadata



Metadata Fundamentals

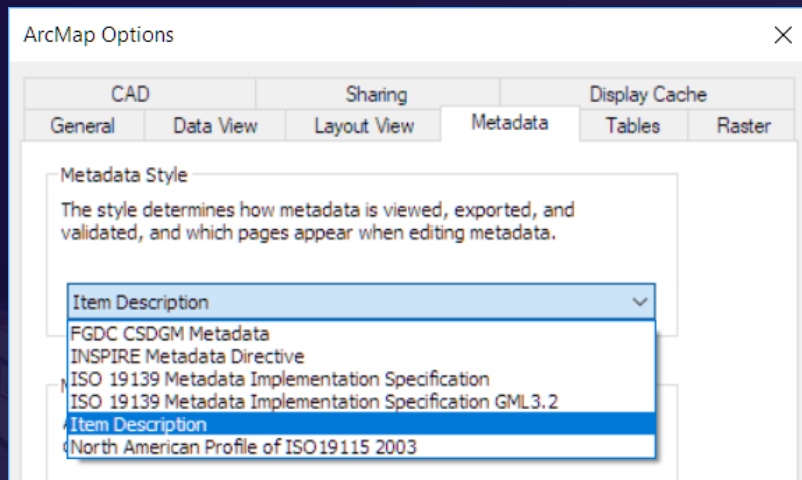
- **Metadata documents geospatial content**
 - for search, discovery, evaluation, archiving
- **ArcGIS platform should facilitate these efforts**
- **Goal: improve the experience**



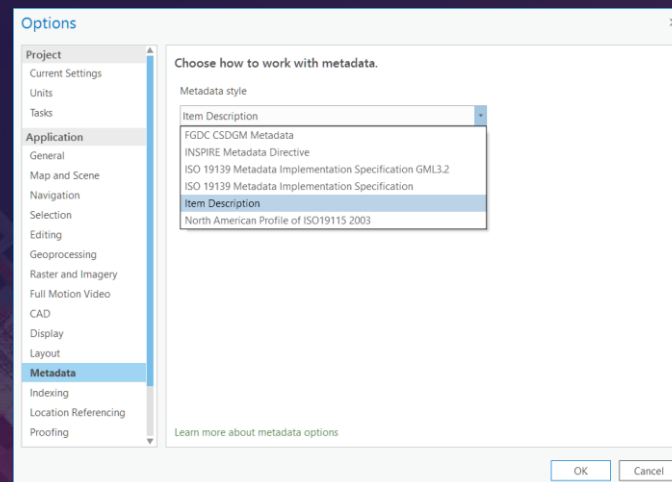
Metadata in ArcGIS

- All items have metadata
- Metadata in ArcGIS is stored in ArcGIS XML
- Metadata styles determine how you display, edit, validate, export metadata

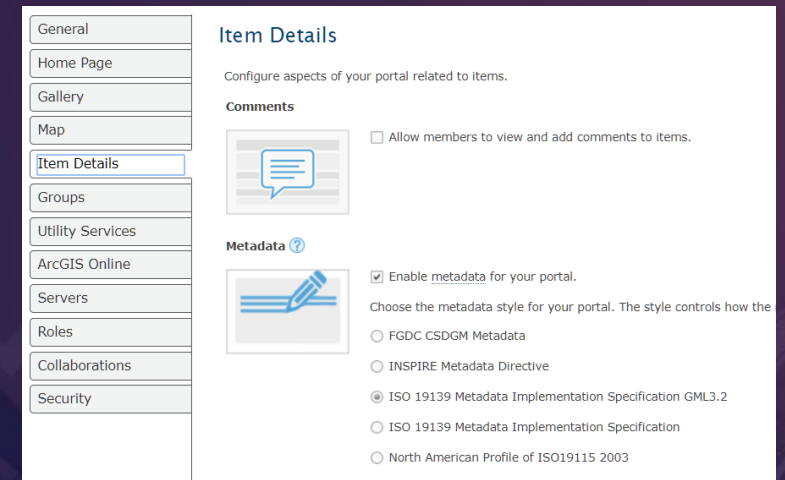
ArcMap



ArcGIS Pro



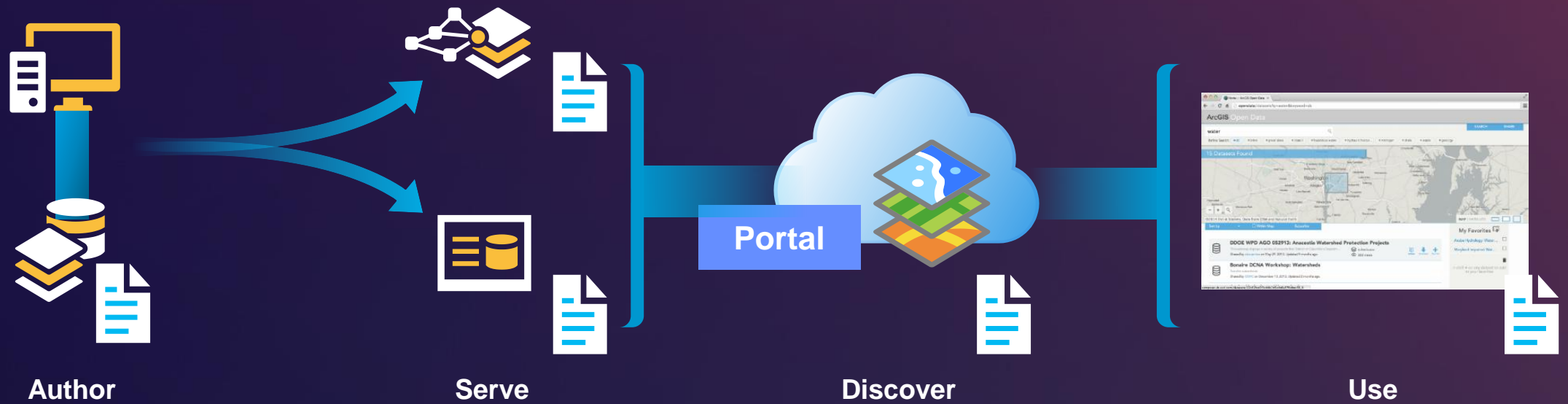
Portal for ArcGIS / ArcGIS Online



Metadata Styles

- **FGDC *CSDGM* Metadata**
 - **Content Standard for Digital Geospatial Metadata (CSDGM)**
- **ISO 19139 Metadata Implementation Specification**
 - **ISO 19115:2003 / ISO 19139:2007**
 - **ISO 19119:2005 / OGC CSW 2008**
 - **ISO 19110:2005 / ISO 19110:2005 Amd.1 2011 Annex E**
- **North American Profile of ISO 19115:2003 (NAP)**
- **INSPIRE Metadata Directive**

Metadata Lifecycle



ArcGIS Platform

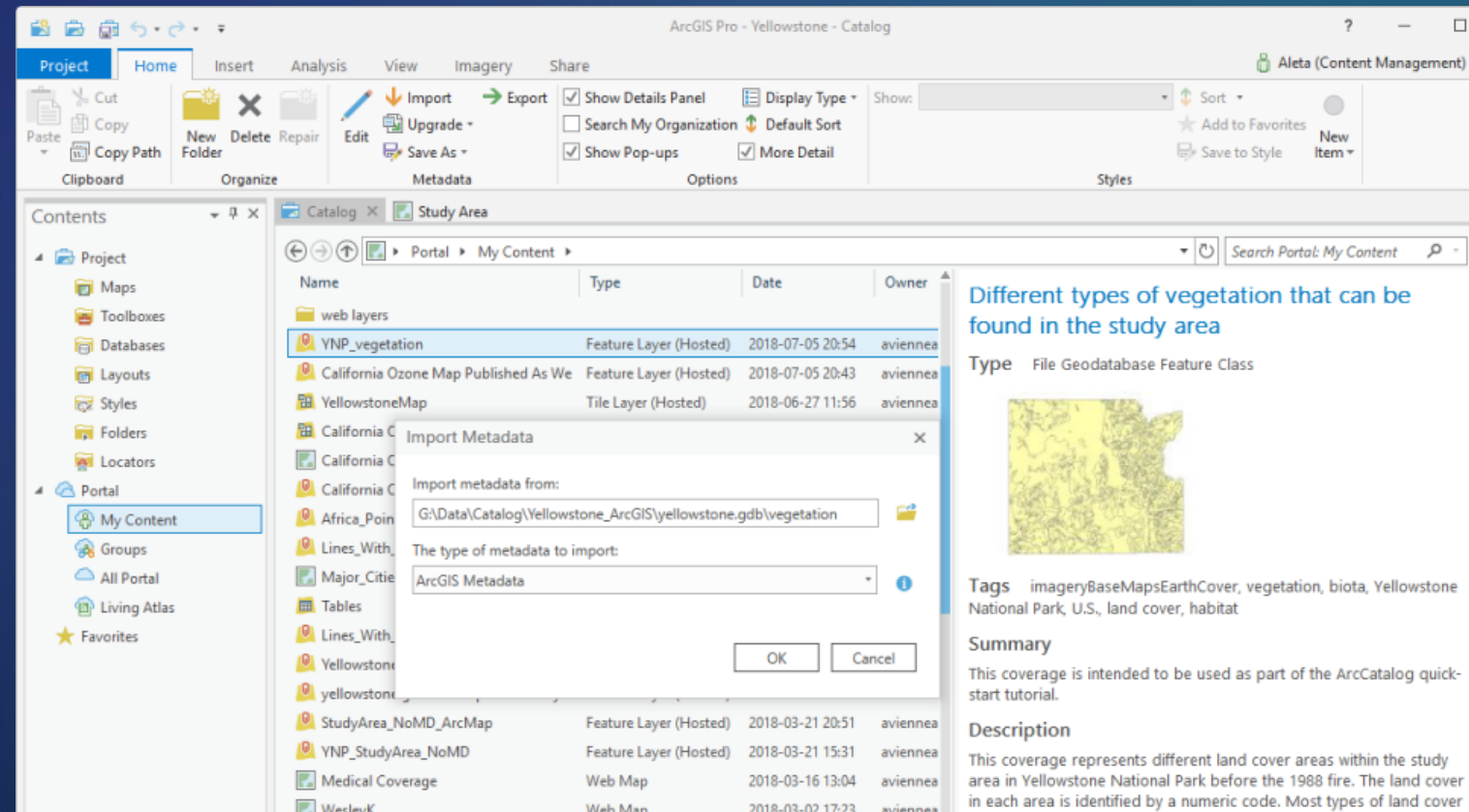


Metadata Support in ArcGIS for Desktop

	ArcMap 10.x	PRO 2.0	PRO 2.1	PRO 2.2
Metadata styles for geospatial metadata standards	Yes	Yes	Yes	Yes
Display and edit full metadata	Yes	Yes	Yes	Yes
Map layers have metadata	No	Yes (limited)	Yes	Yes
Import and export metadata	Yes	No	No	Yes
Manage metadata programmatically	Yes	Yes (limited)	Yes (improved)	Yes
Manage metadata with geoprocessing tools	Yes	No	No	No
Publish map with full metadata	Yes	No	No	Yes
Customize the metadata editor	Yes	No	No	Yes (soon)
ISO 19115-1/-2/-3	No	No	No	No

Metadata Support in ArcGIS Pro

- Metadata styles for geospatial metadata standards
- Display and edit full metadata
- Metadata for map layers
- Import and export metadata
- Save and filter content to files
- Copy ArcGIS metadata
- Upgrade CSDGM metadata



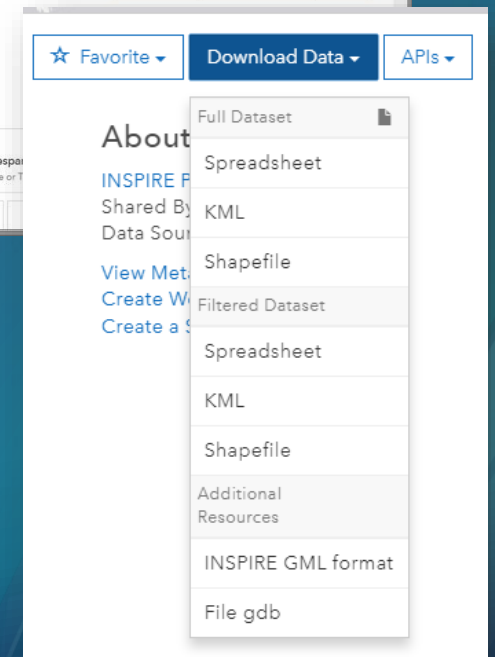
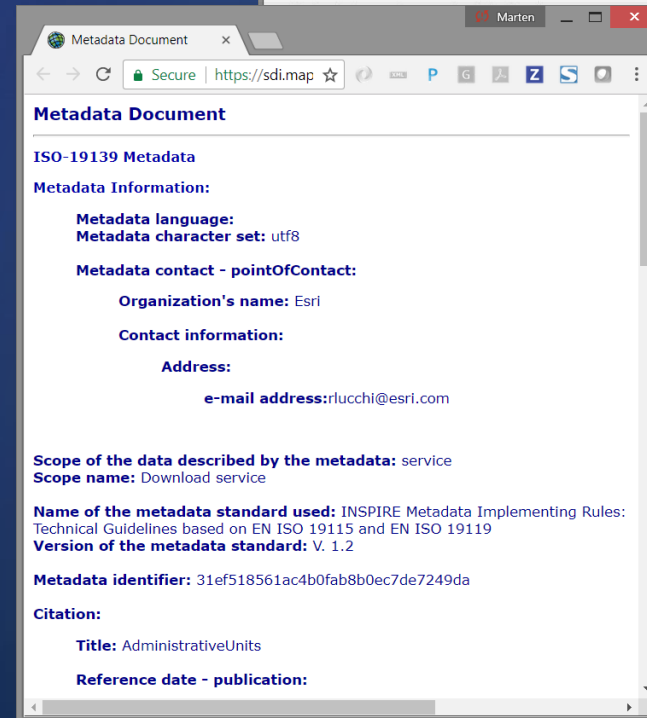
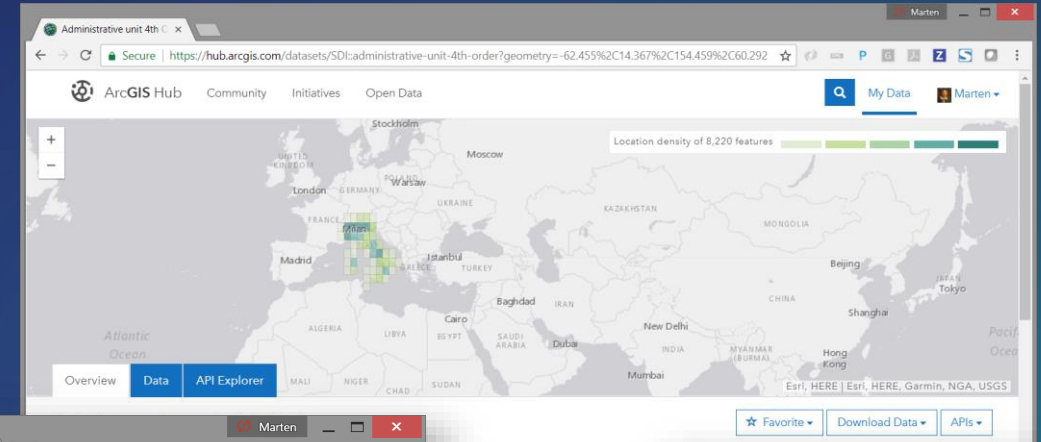
Metadata Support in ArcGIS Online and ArcGIS Enterprise

- Metadata styles for geospatial metadata standards
- Display and edit full metadata
- Scores quality of content
- Metadata for item layers
- Export metadata
- Copy ArcGIS metadata
- Save content to file

The image shows two screenshots of the ArcGIS Online metadata interface. The left screenshot displays the metadata for a map titled "California Ozone Map Pul". It includes a thumbnail map of California, a description of datasets used for geospatial extension, and a list of layers: "O3_Sep06_3pm" and "ca_cities". The right screenshot shows the metadata for "YNP_vegetation", with the "Description" tab selected. The description text reads: "This coverage represents different land cover areas within the study area in Yellowstone National Park before the 1988 fire. The land cover in each area is identified by a numeric code. Most types of land cover consist of different types of vegetation; others are rock, water, or bog. Several types of vegetative cover may have similar groups of plants. Often, the same dominant plant species is paired with different companion or successional species. Details". The interface includes various tabs for metadata (Resource, Quality, Distribution, Representation, Content, Fields, Reference, Metadata) and a "Description (Abstract)*" section with an "Edit..." link. At the bottom right, there are buttons for "Update Data", "Share", and "Metadata", along with an "Item Information" section showing a quality score bar from Low to High.

Metadata Support in ArcGIS for Open Data

- Leverage existing metadata for public items
- Display and edit full metadata
- Scores quality of metadata content
- Search metadata
- Export metadata
- Leverage metadata for additional access options




Flow of Metadata Publishing to ArcGIS Online

- **Create metadata for data**
- **Add data to an ArcGIS Pro map**
 - Layer reference's data's metadata
- **Publish map to ArcGIS Online as a hosted feature layer**
 - Data with metadata is copied
- **Individual layers in the feature layer reference the copied data's metadata**
- **Update metadata locally, overwrite item to make updates available online**

Flow of Metadata Publishing to ArcGIS Enterprise

- **Create metadata for data in registered enterprise geodatabase**
- **Add data to an ArcGIS Pro map**
 - Layer reference's data's metadata
- **Publish map to ArcGIS Enterprise as a feature layer**
 - Data with metadata is referenced
- **Individual layers in the feature layer reference the data's metadata**
- **Update metadata in the enterprise geodatabase, immediately available online**



Update metadata in referenced database

Aleta Vienneau

Road Ahead – Near Term

- **Publish ArcGIS Pro Metadata Toolkit**
- **Support importing and exporting ISO Metadata 19115-1/-2/-3**
- **Import standard metadata in ArcGIS Online and ArcGIS Enterprise**

Road Ahead – Mid Term

- **Support scripting metadata workflows in Pro**
- **Leverage organizational metadata settings in Pro**
- **Metadata editor usability improvements**
- **Enhance the ArcGIS metadata editor to support ISO 19115-1/-2/-3**

Road Ahead – Long Term

- **Common metadata editing experience for the ArcGIS platform**
- **Controlled vocabularies**

Metadata in the ArcGIS Platform

- **Improve metadata support throughout the platform**
- **Create metadata that complies with standards**
- **Goals**
 - **Improve flow of metadata through the platform**
 - **Make it easier to produce high quality metadata content**

See Us Here

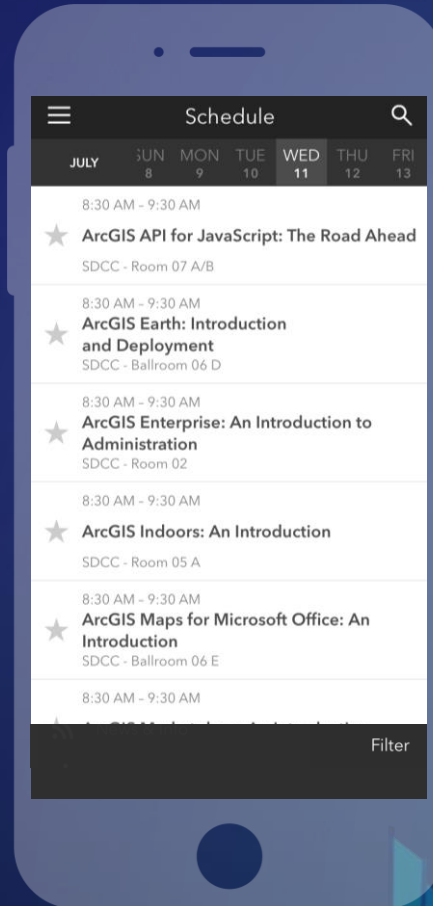
WORKSHOP	LOCATION	TIME FRAME
<ul style="list-style-type: none">• ArcGIS for INSPIRE• ArcGIS for INSPIRE• Geoportal server• Geoportal Server• Metadata• Metadata• Metadata• Metadata• Metadata• OGC Services• Interoperability	<ul style="list-style-type: none">• Spotlight• Demo Theater• Technical Workshop• Spotlight Theater• Spotlight Theater• Special Interest Group• Spotlight Theater• Technical Workshop• Technical Workshop• Spotlight Theater• Technical Workshop	<ul style="list-style-type: none">• Tuesday 10:00AM• Tuesday 11:15AM• Tuesday 2:30PM• Wednesday 10:30AM• Wednesday 11:15AM• Wednesday 5:30PM• Thursday 10:30AM• Thursday 1:00PM• Thursday 2:30PM• Wednesday 12:15PM• Wednesday 1:00PM

Please Take Our Survey on the App

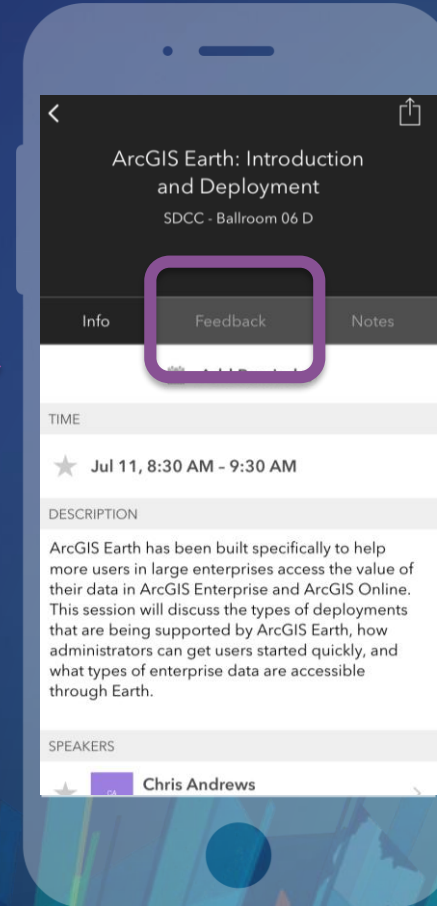
Download the Esri Events app and find your event



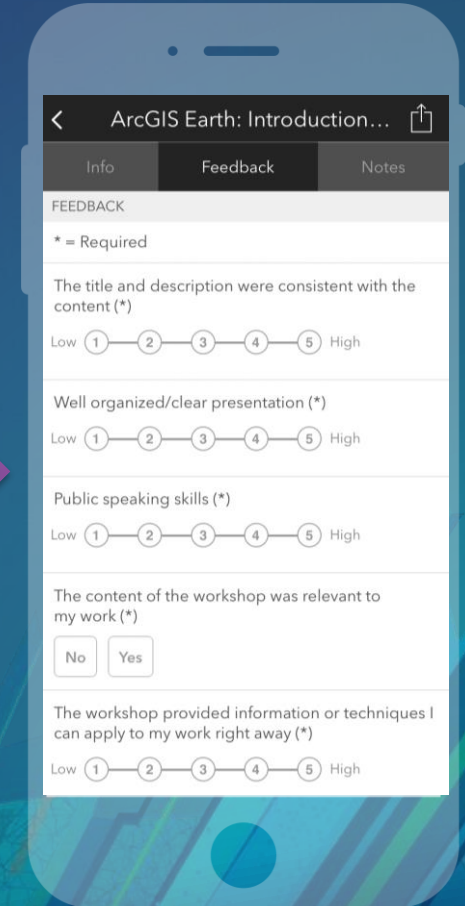
Select the session you attended



Scroll down to find the feedback section



Complete answers and select "Submit"





esri

THE
SCIENCE
OF
WHERE