Achieving Interoperability using the ArcGIS Platform

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Thank you…

- Please fill out the session survey in your mobile app
- Select [Achieving Interoperability using the ArcGIS Platform] in the Mobile App
  - Use the Search Feature to quickly find this title
- Click “Technical Workshop Survey”
- Answer a few short questions and enter any comments
The ArcGIS Platform

- An Open & Interoperable Platform
  - Supporting a thriving ecosystem of focused apps and applications.

- A Standards Compliant Platform
  - Supporting many relevant standards including those from ISO TC 211 and OGC.
User Scenarios

- Organizations participating in SDI and Large Federal and Defense Infrastructures
  - Help me satisfy my obligations (workflows) using mandated standards

- Organizations participating in Opendata
  - Help me satisfy my obligations

- Organizations participating in cross-domain, cross organizational workflows
  - Help my workflow. Help me work with my other stakeholders and business entities
Achieving Interoperability
ArcGIS Technology
(supporting standards)
**Situation:**
There are 14 competing standards.

**14?! Ridiculous!**
We need to develop one universal standard that covers everyone's use cases.

**Yeah!**

**Soon:**

**Situation:**
There are 15 competing standards.
OGC Support

SERVER TECHNOLOGIES

Server
Support WMS, WFS, WCS, WPS, WMTS, KML, SLD, FE

ArcGIS Online / Portal

CLIENT TECHNOLOGIES

Desktop
wms, wcs, wfs, kml oPeNDAP, gml, NetCDF, geopackage

Runtime
Kml, wms, wmts

ArcGIS Online / Portal
Register wms, kml services
Webmap / mapviewer: Add wms, wmts, kml layers

Javascript Web Api
wms, wmts, kml
ArcGIS Platform Components

- Portals (AGOL, Portal)
  - Providing & Consuming
- Server
  - Providing
- Developer Solutions (runtime, Javascript Api)
  - Consuming
- Desktop (ArcMap & PRO)
  - Consuming
- Apps
  - Consuming

Core Standards

- Metadata (ISO, FGDC, …)
- Data (Geopackage, geoJSON, gml-JPEG 2000…)
- Portrayal Standards
- Services (wms,wfs,wcs, wps,sos,cs-w, …)
Standards Requirements – Across the platform ..... What we are hearing!

- **Online / Portal**
  - Register OGC services
  - Consume OGC services
  - Create hosted OGC services
  - Geopackage support
  - Allow analyses on OGC services
  - Support Discovery Standards – OGC CS-W, OpenSearch, DCAT
  - Managing Secured OGC Services
- **Metadata Support across the platform**
- **Federated searches across portals**

- **Server**
  - Improve existing OGC support (compliancy, update to new version, new profiles)
- **Desktop (ArcMap / Pro)**
  - Consume OGC services
  - Geopackage support
- **Runtime and Apps**
  - Consume OGC services
  - Geopackage support
- **Javascript API**
  - Consume OGC services
Standards Support

- Producing
  - Hosted WMS service (2016)
  - Hosted WFS Service (2016)

- Consuming
  - WMS (support identify operation)
  - WMTS
  - WFS (2016) – Support as a first class layer type
  - WCS
  - GeoPackage
  - KML
  - Metadata Support (@ version 3.8)

portals
(ArcGIS Online, Portal for ArcGIS)

Producing & Consuming
Standards Support

- **CS-W Support**
- **Federated Portals**
  - Federated Searches & Metadata Harvesting
- **Metadata Support (Special Profiles)**

Portals (Portal for ArcGIS)

Producing & Consuming

Geoportal

- Ongoing Work
- Planned Work
- Supported Today
Standards Support

- **Server**
  - WMS
  - WFS (WFS-T)
  - WCS
  - WMTS
  - WPS
  - KML
  - GeoJSON ( @ 10.4)
  - WPS 2.0
  - WCS – Met Ocean Profile

Ongoing Work

Planned Work

Supported Today
Standards Support

- **Runtime**
  - Wms
  - Wmts
  - GeoPackage
  - Wfs

- **Javascript Api**
  - WMS
  - WMTS
  - WFS ( @ version 3.1.4)

Developer Solutions (Runtime, Javascript Api)

Ongoing Work

Planned Work

Supported Today
Standards Support

- Apps
  - WMS, WMTS, WFS, WCS, GeoPackage

Apps
Consuming

Ongoing Work
Planned Work
Supported Today
Standards Support

Desktop
(ArcMap & PRO)
Consuming

• ArcMap
  - WMS, WMTS, GeoPackage, WCS, KML
  - WFS
  - WFS-T (part of production mapping)

• PRO
  - WMS, WMTS, GeoPackage, KML
  - WFS /WFS-T
  - WCS

Ongoing Work
Planned Work
Supported Today
Standards Support

- **PRO 1.1**
  - WMS, WMTS, Geopackage, KML
  - WFS (import –part of Data Interop)

- **PRO 1.2**
  - WMS, WMTS, Geopackage, WFS/WFS-T

- **PRO (2016)**
  - WCS
Achieving Interoperability
Explore Open.

(Hint, with Esri the possibilities are endless.)

http://www.esri.com/software/open-site
Esri’s Open Initiatives

Our strategy incorporates the many aspects of an open platform - open code, open data, open formats, open content, and open community.

- Centralized many of our Open Source Software projects via the Esri Github community
- GeoPortal – Esri’s Open Source Platform for Collaboration & Sharing
- Openstreetmap Editor – Esri’s OS Arcmap extension for editing OpenStreetMap Data
- Open-sourced a core geometry engine to enable developers to leverage the Hadoop Big Data platform.

...... Join & Collaborate
Esri - Open Specifications

• Shapefile

• File Geodatabase API

• Geoservics REST Specification

• Esri i3S specification (https://github.com/esri/i3s-spec)

…… Advancing Interoperability
Some Links to Esri’s Open Source Libraries

- https://github.com/Esri/geoservices-js
- https://github.com/Esri/Terraformer
- https://github.com/ajturner/geoservices-ruby
- http://dtc-sci01.esri.com/OGCAApps/OpenLayersApp
- https://github.com/kevinsigwart/EsrOpenLayersClient/
- https://github.com/Esri/esri-leaflet
- https://github.com/Esri/koop
- https://github.com/Esri/3d-cities-template/tree/master/Workflows/3DCityMaintenance/CityGML%20Tools

http://esri.github.io/
ArcGIS Open Data Platform

Explore 27,331 Open Datasets from 2,149 Organizations Worldwide

Search for data about Streets, Schools, Park Services...

Featured Organizations Sharing Data

http://opendata.arcgis.com/
Demonstrations
Organizations participating in SDI and Large Federal and Defense Infrastructures

Organizations participating in Opendata

Organizations participating in cross-domain, cross organizational workflows

User Scenarios

Examples
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Understanding our world.