



Achieving Interoperability Using Open Standards and Specifications

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Technical Workshop

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Offering ID: 1430

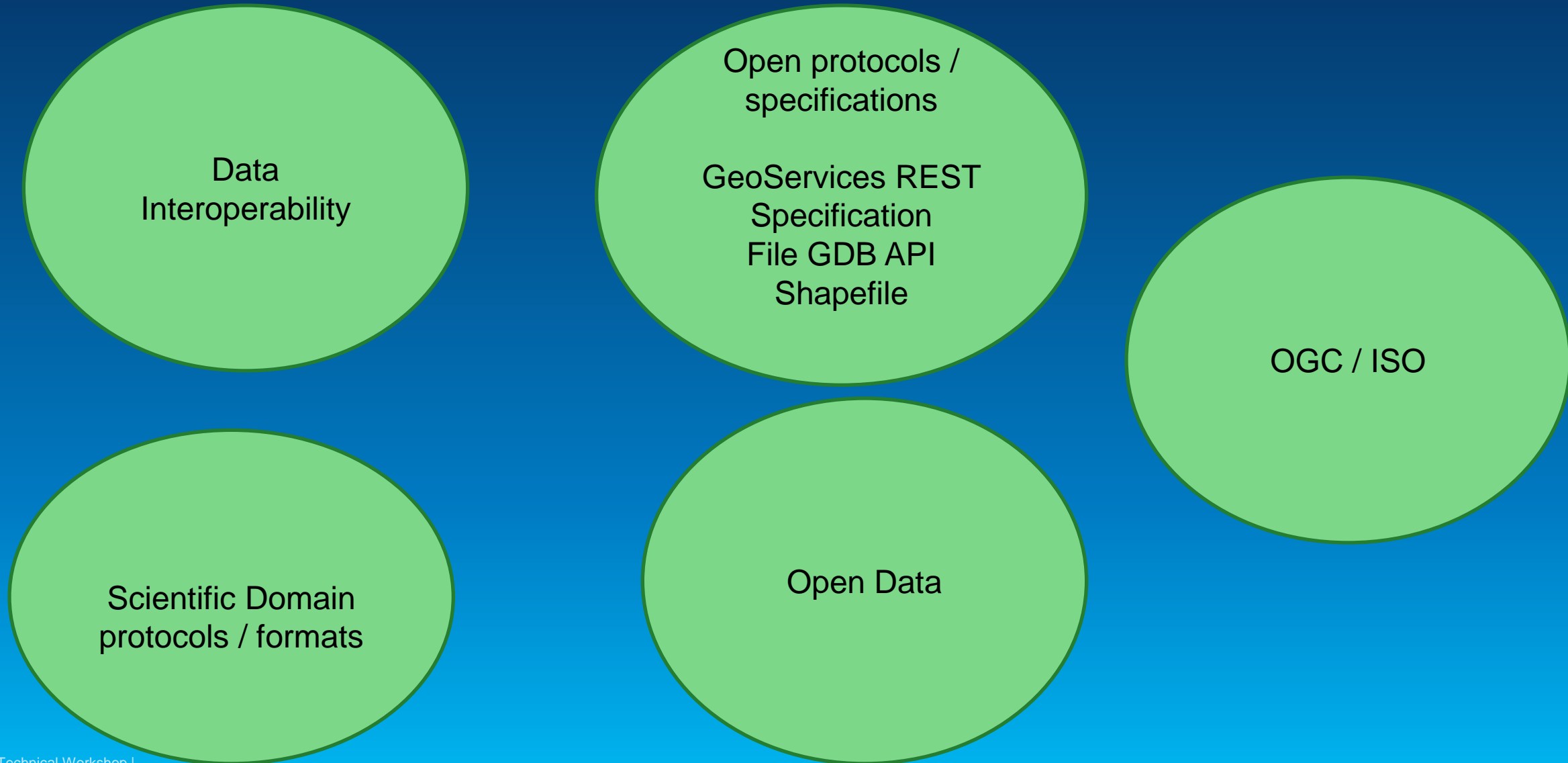
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Open

Standards

Interoperability

ArcGIS – Open, Standards Based and Interoperable



Agenda

Interoperability via Web Services –

- **GeoServices Rest Specification**
 - **Map Service, Feature Service, Image Service, Geocoding Service, ...**
- **OGC Web Services Standards**
 - **WMS, WFS, WCS, WPS, KML, WPS, WMTS, SOS, ...**

Agenda .. contd

- **Esri's Open Source Initiatives - Advancing Interoperability**
- **ArcGIS Online – Leveraging Interoperability**

ArcGIS for Server - Vision

**Powerful
GIS capabilities**



**Delivered as
Web services**



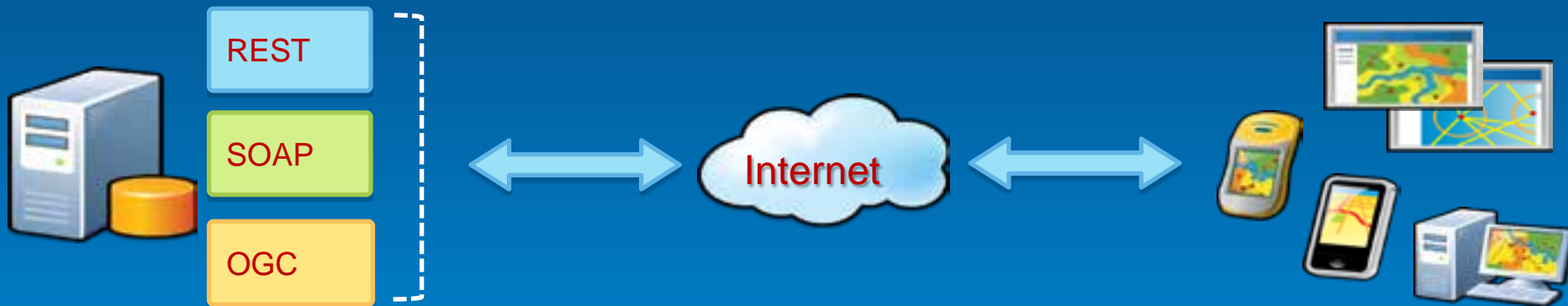
To help solve real problems



ArcGIS for Server - Building Open and Interoperable Systems

Supporting Multiple Protocols

- Representational State Transfer (**REST**)
- Simple Object Access Protocol (**SOAP**)
- Open Geospatial Consortium (**OGC**)



Catering to Multiple Communities:

Neogeography/ Mashup (WEB 2.0)
Enterprise Architectures (EA)
Spatial Data Infrastructures (SDI)

REST – The Elevator Pitch

4 Key Principles*	
Identification Of Resources	Everything is a URL
Manipulation Of Resources Through Representations	Exchange standard formats using standard verbs
Self-Descriptive Messages	Every request asks the full question, every response includes the full answer
Hypermedia As The Engine Of Application State	Hyperlinks Yeah!

<http://www.intertwingly.net/blog/2198.html>

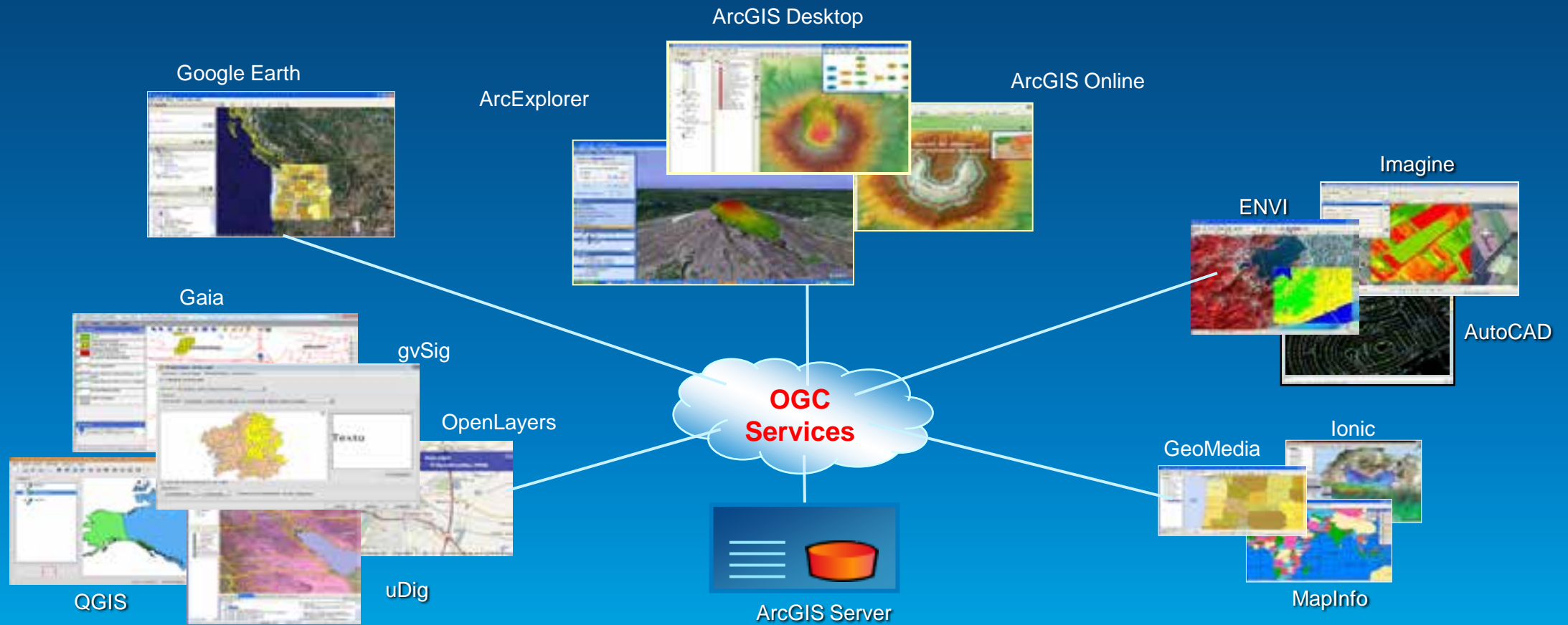
Building Open and Interoperable Systems using the GeoServices REST Specification



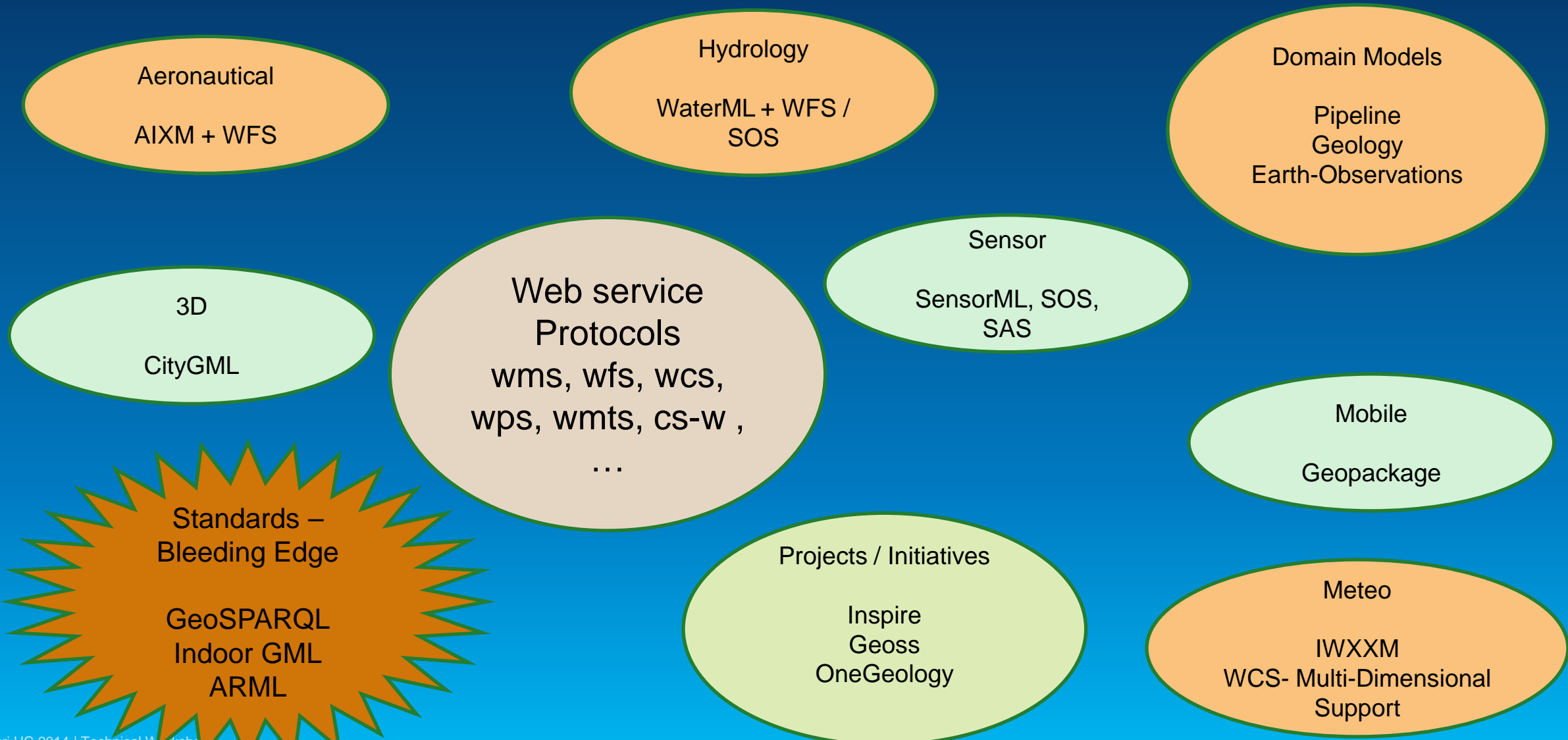
Quick History Lesson



Building Open and Interoperable Systems using the OGC Web Services Specifications



OGC Landscape



OGC / ISO standards support (ArcGIS 10.2)

- WMS
 - + Style Layer Descriptor
 - + Filter Encoding Support
 - + Time Support
- WFS
 - + Transactions
 - + Filter Encoding Support
- WCS
 - +GeoTiff, NITF, HDF, JPEG, JPEG2000, PNG
- WMTS
 - + REST & KVP Encoding
- WPS
 - + Synchronous
 - + Asynchronous
 - + Data and Services as inputs
- CSW
 - + OGC Core
 - + ISO 19139

<http://www.esri.com/library/whitepapers/pdfs/supported-ogc-iso-standards.pdf>

OGC / ISO standards support

What's New & What's Coming

- OGC Geopackage
 - Available since 10.2.1
 - Enhanced at 10.2.2
 - Planned enhancements for 10.3
- WMS Support for Multi-dimensional data (Time, + Additional dimensions [Elevation,])
 - Available since 10.2.1
 - Planned enhancements for 10.3
- WFS 2.0
 - Planned Support for 10.3
- WCS 2.0.1
 - Planned Support - Post 10.3

Esri - Open Specifications

- **Shapefile**
- **File Geodatabase API**
- **Geoservices REST Specification**

..... **Advancing Interoperability**

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**

..... **Advancing Interoperability**

Demo

.... 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://dev.openlayers.org/apidocs/files/OpenLayers-js.html>
- <https://github.com/kevinsigwart/EsriOpenLayersClient/>
- <https://github.com/Esri/esri-leaflet>
- <https://github.com/Esri/koop>

<http://esri.github.io/>

ArcGIS Online / Portal for ArcGIS

A complete, map-centric, collaborative content management system for working with geographic information.

Supporting Interoperability thru

GeoServices REST Specification, OGC WMS, CSV, OGC KML, OGC WMTS,

..... **Leveraging Interoperability**

Thank you...

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Understanding our world.