A Unified Approach to Metadata Standards

Scott Hills (Chevron) & Jerry Hubbard (Energistics)
25th February 2013
SLC - London
Outline

A Quick Refresh:
- The opportunity and Vision
- The approach: Energy Industry Metadata Initiative

The Core Deliverable:
- The Energy Industry Profile (EIP) metadata exchange standard

The EIP Prototype Project, Phase I
- Prototype Implementation based on EIP v1.0 Release Candidate

Future Plans
**Initiative Background: Business Driver & Goal State**

**Business Driver**
- 40% of staff time devoted to finding, retrieving, and verifying information, while data volume is growing at 60-80%/yr and need for integrating distributed, diverse resources is increasing

**Goal State:**
Realize metadata standards and guidelines which enable stakeholders in the energy industry (“the community”) to effectively and efficiently **discover, evaluate, and retrieve structured and unstructured** information resources.

Support both proprietary data management needs, and exchange of data between and within organizations.

**Leverage existing open standards to encourage adoption** within the community and integration into the business, and **exploit existing organizational resources needed for governance and long-term maintenance.**
Background:
Vision for Industry Metadata Exchange & Use

Application Managed
(e.g., EPOS, Gocad, Petrel)

Structured resources
(e.g., OpenWorks, RESQML, WITSML)

Internally Harvested

Legend:
Metadata exchange via EIP standard

Unstructured resources

Partner & Subscription Delivered
(e.g., CoreLogic, IHS Energy, Neftex, Wood Mackenzie)

Externally Harvested
(Commercial, Gov’t & Academic: e.g., AAPG, EGI, USGIN, USGS)

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Initiative Participants

Work Group

Dave Danko, ESRI
Lisa Derenthal, Gimmal
Alan Doniger, ACD Consulting Solutions
Scott Hills, Chevron
Hari Koduru, Energistics
Steve Richard, USGIN, AZ Geol Survey

Active Participants (SMEs)

AAPG
Apache
Boise State Univ.
Carbon Lifecycle Technology
ConocoPhillips
DCP Midstream
Deloitte Services LP
Devon Energy
ETL Solutions
Exprodat
ExxonMobil
First American Spatial Solutions
Flare Solutions
Fugro Robertson
Geoscience Australia
Geosoft
Ies Brazil Consulting & Services
IHS Energy
Maersk Oil
New Century Software
North West Geomatics
Oracle
ORNL
P2 Energy Solutions
PEMEX
PennWell
PetroWEB
Pioneer Natural Resources
PPDM
Priemere Consulting Group
SAS Global Oil & Gas
Schlumberger
Shell
Univ. of Auckland, NZ
Virginia Dept of MM&E
Wood Mackenzie

1 Energistics member; Bold: Contributed initial EIP requirements,
Feedback about v1.0 Release Candidate
Key External Engagements

USGIN Project
• Joint project of U.S. Geological Survey and all 51 U.S. State Geological Surveys
• Steve Richard (AZ State Geol. Survey) on Work Group Steering Team, contributing significant technical input

ISO/TC 211, 19115 Revision Project
• Energistics granted Class A Liaison status to ISO TC 211
• S. Hills represented Work Group on ISO 19115 Revision Project Team & Editing Committee
• Contributed several enhancements to ISO/DIS 19115-1 important to the Energy Industry Metadata Initiative vision

ISO/TC 211, 19115-1 XML Encoding Project
• Energistics submitted New Work Item Proposal for XML encoding of ISO 19115-1
• Invited Dr. Ted Habermann (NOAA) to fill Team Lead role
• S. Richard representing Metadata Work Group on Project Team

NOAA/National Geophysical Data Center
• Accepted key role in EIP Prototype Project
Leverage existing standards

- ISO 19115 (*content model*)
  - and ISO 19139 (*XML encoding*)

- Existing profiles of ISO 19115
  - ANZLIC Profile (Australia, New Zealand)
  - European Union INSPIRE guidelines
  - USGIN Profile

... to Deliver

- “Energy Industry Profile of ISO/DIS 19115-1” v1.0
  - ISO Conformance Level 1 Profile designed to enable community interoperability

- 125 pp. document includes:
  - Normative Specifications
  - Implementation Guidelines
  - Selected XML Encoding Examples
Initiative Roadmap

**2011**
- EIP v1.0 Rel Candidate Development

**2012**
- Updates:
  - ISO 19115-1 Revision Drafts (WD0, WD1, CD, DIS)
  - AGU
  - OGC TC Mtg (TX)

**ISO Participation:**
- EIP v1.0 Release Candidate
- Community Review
- Initial Workable XML Encoding
- EIP Prototype
- Community Workshop(s)
- Finalize EIP v1.0
- EIP v1.0 Pilots

**2013**
- OGC TC Mtg (CA)
- Esri PUG
- ISO TC 211, Toulouse
- ISO TC 211, Jeddah
- EIP v1.0 published
- EIP v1.1 dev.
EIP Prototype Project Overview
Objectives

Demonstrate the feasibility of the vision, and Expedite and encourage adoption of EIP v1.0:

- Provide a working, Prototype Implementation based on EIP v1.0 Release Candidate
- Place all project artifacts in the public domain.
Customization needed to demonstrate a subset of the Initiative vision, and to develop freely-available resources that encourage community adoption.
Next Steps - 2013

EIP Prototype Project Phase II

• Developing proposal with Phase I Sponsors
• Finalize costs and secure funding in 1-2Q 2013
• Execute 3-4Q 2013

Pilot Implementations

• Identify candidate organizations, with Phase I Sponsors
• Current discussions with AAPG/Datapages, Elsevier/Geofacets
• Other candidates: EGI, Fugro Robertson, IHS Energy, SEG, SPE, Wood Mackenzie
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<th>Year</th>
<th>Standards Development</th>
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<tr>
<td>2011</td>
<td>• Test EIP v1.0 Release Candidate</td>
<td>• Outline EIP Prototype Project (4Q)</td>
<td>• Use meeting presentations, webinars to engage stakeholders</td>
<td>• ISO 19115 Revision Project participation (1Q-4Q)</td>
<td>• USGIN, OGP Geomatics Comm, FGDC, NOAA</td>
<td>• Work with RESQML team to integrate EIP as discovery metadata in EOPC packaging design</td>
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<td>2012</td>
<td>• EIP v1.0 Release Candidate completed (4Q)</td>
<td>• Secure funding for EIP Prototype Project Phase I, &amp; Execute (1Q-4Q)</td>
<td>• Conduct 2+ presentations/ webinars (1Q-4Q)</td>
<td>• ISO 19115-3 XML Encoding Project initiated (Q2)</td>
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<td>2013</td>
<td>• EIP v1.0 published (Q1)</td>
<td>• Secure funding for EIP Prototype Project Phase II, &amp; Execute (1Q-4Q)</td>
<td>• Conduct 3+ presentations/ webinars/ workshops (1Q-4Q)</td>
<td>• ISO 19115-1 progresses to IS (2Q)</td>
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<td>2014</td>
<td>• EIP v1.1 Release Candidate completed</td>
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<td>• ISO 19115-3 XML Encoding progresses to Final Draft Technical Spec</td>
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**Standards Development**
- Test EIP v1.0 Release Candidate
- EIP v1.0 Release Candidate completed (4Q)
- EIP v1.0 published
- EIP v1.1 Release Candidate completed
- ISO 19115 Revision Project participation (1Q-4Q)
- EIP v1.1 Published
- ISO 19115-3 XML Encoding progresses to Final Draft Technical Spec

**Deployment**
- Outline EIP Prototype Project (4Q)
- Secure funding for EIP Prototype Project Phase I, & Execute (1Q-4Q)
- Secure funding for EIP Prototype Project Phase II, & Execute (1Q-4Q)
- Security engagement of external EIP-compliance resource catalogs, as appropriate

**Adoption Support**
- Use meeting presentations, webinars to engage stakeholders
- Conduct 2+ presentations/ webinars/ workshops (1Q-4Q)
- Conduct 3+ presentations/ webinars/ workshops (1Q-4Q)
- Conduct 3+ webinars/ workshops
- Define adoption metrics (3Q)
- Analyze/Report adoption metrics

**Base Standards**
- ISO 19115-3 XML Encoding Project initiated (Q2)
- ISO 19115-1 progresses to IS (2Q)
- ISO 19115-3 XML Encoding progresses to Final Draft Technical Spec
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**External Engagements**
- Add 2+ orgs (e.g., USGS, W3C)
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**Cross-SIG Activities**
- Work with RESQML team to integrate EIP as discovery metadata in EOPC packaging design
- Support Energistics’ interest to internally leverage EIP XML schema
- Continue efforts to leverage EIP in support of SIGs/WGs
- Expand NDR engagement
- Support Energistics’ interest to internally leverage EIP XML schema
Questions / Comments?