IC Ontology and Controlled Vocabulary (O/CV) Framework

Spatial Ontology Community of Practice Workshop

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Agenda

■ IC O/CV Program Overview
■ Framework FAQ
■ Target Capabilities
■ Roadmap
IC O/CV Program Overview

Who: Team of MITRE engineers sponsored by IC CIO to provide guidance for IC-wide collaborative ontology and controlled vocabulary (O/CV) development, management and implementation

What/When

- Phase 1-2008
  - Assess the current IC ontology and CV development and management capabilities and gather requirements for target capabilities
  - Develop a framework that estimates target capabilities and provides guidance for achieving them

- Future Phases – 2009+
  - Refine Framework
  - Support implementation

Why: To rapidly and continuously improve the semantic and structural interoperability of IC information, including legacy information from disparate sources
What is Semantic and Structural Interoperability?

- Fragmented Intelligence Sources
- Semantic Interoperability
- Entities of Interest
- Ontologies
- Controlled Vocabularies
- Structural Interoperability

Model

Scopes

Define

Name & Describe
IC O/CV Framework FAQs

1. What is the IC Ontology and Controlled Vocabulary Framework?
   - The framework is an end-to-end approach for the collaborative development, management, governance and implementation of ontologies and controlled vocabularies across the IC enterprise.
   - Defines target capability, processes, principles and best practices

2. How does the intelligence analyst benefit?
   - Improved enterprise information sharing and exchange capability
     ■ preserves context of information from disparate sources
     ■ improves information retrieval and discovery capabilities
     ■ enables intelligent information aggregation and visualization
   - Improved advanced analytic capabilities such as
     ■ entity correlation and disambiguation
     ■ link analysis capability
     ■ predictive analysis
IC O/CV Framework FAQs

3. How does the IC enterprise benefit?

– Provides continuous, measurable improvement of information sharing and analytic capability
– Supports centralized planning and rapid, distributed execution via communities of interest (CoI)
– Addresses enterprise-scale information sharing challenges at the enterprise level such as
  ■ cross-domain information assurance
  ■ enterprise standards support
  ■ mediation of formal data sharing agreements
– Builds trust through the establishment of a community of communities
– Promotes transparency and reduces waste by managing ontologies and controlled vocabularies as enterprise assets
  - reduces wasted time and money on agency-specific solutions to enterprise-scale problems
  - reduces inefficiency, redundancy, and rework associated with O/CV development and implementation
  - makes enterprise semantics continuously more explicit and transparent
IC O/CV Framework FAQs

4. How does O/CV developers and implementers benefit?

– Enterprise-level infrastructure
  ■ collaboration space and tools enable collaborative development and IC O/CV transparency
  ■ enables the IC to concentrate on developing and implementing ontologies and controlled vocabularies rather than building the infrastructure to support them
  ■ builds an enterprise library of high quality ontologies and controlled vocabularies for repurposing and reuse

– Enterprise-level O/CV Technical Support
  ■ improves the quality and reusability of ontologies and controlled vocabularies
  ■ provides the technical guidance that ensures practical use and reuse through consistent development and implementation

– Governance
  ■ provides a venue to resolve the challenges, which will enable enterprise-wide information sharing
  ■ provides enterprise-level guidance for implementing information sharing solutions
IC Ontology/Controlled Vocabulary Framework Concept

Enterprise O/CV Collaboration Space

- Collaboration Tools
- Implementation Support
- O/CV Development & Management Tools
- Technical Support
- O/CV Catalogue
- O/CV Registry & Repository
- Governance Support
- Terminology Management Server

- Cols
- Standards Groups
- IC O/CV Support Team
- Application & Service Developers
- Ontologists
- O/CV Advisory Council
- Linguists
- Analysts

Unclassified
IC O/CV Capability Model
Roadmap Phase 1: 2008

1. Develop Framework
2. User and developer input from perspective of Catalyst
   - Develop initial requirements via RIE
   - Develop preliminary assessment of existing IC ontologies/CVs
   - Develop preliminary IC ontology/CV Management Framework
Roadmap Phase 2: 2009

- Continue design and begin initial pilots
- Establish organizational structure for technical implementation
- Establish organizational structure for governance
- Develop methodology including metrics
- Select/develop toolsets and training
Roadmap Phase 3: 2010+

- **Enterprise Deployment**
  - **FY10+**
    - Deploy enterprise pilots
    - Deploy in applications, Intelink, services
    - Implement outreach and training
    - Lifecycle maintenance of ontologies, CVs
    - Continuous Improvement
Questions?