Semantic Interoperability Community of Practice (SICoP)

Semantic Web Applications for National Security Conference
Hyatt Regency Crystal City, Regency Ballrooms E and F
Brand Niemann (US EPA) and Rick Morris (U.S. Army), Co-Chairs
Semantic Interoperability Community of Practice (SICoP)
Best Practices Committee (BPC), CIO Council
April 7, 2005
http://web-services.gov/ and http://colab.cim3.net/cgi-bin/wiki.pl?SICoP
Overview


• SICoP Was Chartered by the Knowledge Management Working Group (KM.Gov) of the CIO Council’s Best Practices Committee in March 2004.

• SICoP is Producing Three “Best Practices” Modules:
  – (1) Introducing Semantic Technologies and the Vision of the Semantic Web (completed-delivered February 28th)
  – (3) Implementing the Semantic Web (in process for September 2005)
Overview

- SICoP is Conducting Pilot Projects at the Request of the Federal CIO Council:
  - Formal Taxonomies for the U.S. Government
  - Federal Enterprise Architecture Reference Model Ontology (FEA RMO)
  - Semantic Technology Profiles for the Federal Enterprise Architecture Data Reference Model

- SICoP is Producing Workshops and Conferences:
  - Second Semantic Technologies for E-Government Conference, September 8-9, 2004
  - XML 2004 Conference: From Syntax to Solutions, November 14-17, 2004 (Keynote & Session Tracks)
  - Semantic Interoperability Study Group for the CIOC Architecture & Infrastructure Committee Leadership, October-December 2004
  - Monthly Collaboration Expedition Workshops with the Architecture & Infrastructure Committee at NSF (December 2004 and February 2005)
  - XML 2005 Conference: From Syntax to Semantics, November 14-18, Atlanta, Georgia (Keynote & Session Tracks)
Formal Taxonomies for the U.S. Government

Transportation Class Hierarchy

OWL Listing:
```xml
<?xml version="1.0"?> <rdf:RDF
   xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
   xmlns:xsd="http://www.w3.org/2001/XMLSchema#"
   xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
   xmlns:owl="http://www.w3.org/2002/07/owl#"
   xmlns:daml="http://www.daml.org/2001/03/daml+owl#"
   xml:base="http://www.owl-ontologies.com/unnamed.owl#">
   <owl:Ontology rdf:about=""
      <owl:Class rdf:ID="Transportation"/>
      <owl:Class rdf:ID="AirVehicle">
         <rdfs:subClassOf rdf:resource="#Transportation"/>
      </owl:Class>
      <owl:Class rdf:ID="GroundVehicle">
         <rdfs:subClassOf rdf:resource="#Transportation"/>
      </owl:Class>
      <owl:Class rdf:ID="Automobile">
         <rdfs:subClassOf rdf:resource="#GroundVehicle"/>
      </owl:Class>
      <owl:Class rdf:ID="Sports Car">
         <rdfs:subClassOf rdf:resource="#Automobile"/>
      </owl:Class>
      <owl:Class rdf:ID="Sedan">
         <rdfs:subClassOf rdf:resource="#Automobile"/>
      </owl:Class>
   </owl:Class>
   <owl:Class rdf:ID="Truck">
      <rdfs:subClassOf rdf:resource="#GroundVehicle"/>
   </owl:Class>
</owl:Ontology>
```

Source: SWOOP 2.2.1 from MindSwap Research Group (Jim Hendler).
This set of white papers is the combined effort of KM.Gov and SICoP.

The papers will make the case that these technologies are substantial progressions in information theory and not yet-another-silver-bullet technology promising to cure all IT ills.

The papers are written for agency executives, CIOs, enterprise architects, IT professionals, program managers, and others within federal, state, and local agencies with responsibilities for data management, information management, and knowledge management.
This white paper is intended to inform readers about the principles and capabilities of semantic technologies and the goals of the Semantic Web.

- It provides a primer for the field of semantics along with information on the emerging standards, schemas, and tools that are moving semantic concepts out of the labs and into real-world use.
- It also explains how describing data in richer terms, independent of particular systems or applications, can allow for greater machine processing and, ultimately, many new and powerful autonomic computing capabilities.
Module 1: Introducing Semantic Technologies and the Vision of the Semantic Web

• This white paper focuses upon applications of semantic technologies believed to have the greatest near-term benefits for agencies and government partners alike.
  – These include semantic web services, information interoperability, and intelligent search. It also discusses the state and current use of protocols, schemas, and tools that will pave the road toward the Semantic Web.

• Takeaways: We want readers to gain a better understanding of semantic technologies, to appreciate the promises of the next generation of the World Wide Web, and to see how these new approaches to dealing with digital information can be used to solve difficult information-sharing problems.
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SICoP at SWANS

• Semantic Web Government-Wide Enterprises, Projects, and Initiatives, Rick Morris, SICoP Co-Chair
• Pilot Program Elements Panel and Keynote – Strategic Information Delivery, Mike Daconta, SICoP Module 3 Team Lead
• Pilot Program Elements Panel:
  – FEA Reference Model Ontology: Lessons Learned So Far
  – Building a National Health Information Network Ontology
  – Public Domain Databases for Semantic Searching and Ontology Building
  – Proposed SICoP Ontology and Taxonomy Coordinating Work Group (ONTACG)
• Business Use Case, Mills Davis, SICoP Module 2 Team Lead
• Pilot Program Advice: Technical Leadership (Ralph Hodgson) and Program Management (Mike Daconta and Rick Morris)