A Framework for Earth Science Search Interface Development

Design and Implementation of S2S

S2S: the Seafloor to Surface Ocean Data Finder

Knowledge Panel

Search Dashboard

Data Source:
- Biological and Chemical Oceanographic Data Management Office

Search Facets:

- Bounding Box:
  - North: 30.514429
  - East: 146.836197
  - West: 20
  - South: -60

- SeaDataNet Category:
  - aerosol samplers
  - anemometers
  - bathythermographs
  - continuous air samplers
  - CTD profilers
  - current profilers
  - discrete water samplers
  - fluorometers

- Programs:
  - Census of Marine Life
  - Iron Synthesis
  - U.S. Joint Global Ocean Flux Study

- People:
  - Abraham, Edward
  - Allison, Dicky
  - Almgren, Daniel
  - Azam, Farooq
  - Bakker, Dorothee
  - Balch, William
  - Barber, Richard
  - Bender, Michael

- Equipment:
  - Acoustic Doppler Current Profiler

Presenter: Stephan Zednik, Tetherless World Constellation

EGU2011-13413
Authors

Rensselaer Polytechnic Institute, Tetherless World Constellation
• Eric Rozell
• Peter Fox
• Stephan Zednik

Ocean Informatics Working Group, Woods Hole Oceanographic Institution
• Andrew Maffei
S2S Overview
Use Cases

• Faceted Browsing Interface
  – Search by…
    • award number and principal investigator
    • geographic region and parameter
    • publication date

• Maintain current value chain
  – BCO-DMO acts as archivist, curator, and provider

• S2S enables…
  – Faceted browsing
  – Discovery portals and self-deployed interfaces
Research Methodology

Semantic Web Methodology & Technology Development Process

- Establish and improve a well-defined methodology vision for semantic technology based on application development
- Leverage controlled vocabularies, etc.

Fox et al., 2009
Interaction Paradigm

ExView (Maffei et al., 2007) and 4DGeoBrowser (Lerner and Maffei, 2001)
Framework Ontology
Prototype Implementation

**Technology**
- OpenSearch services
- jQuery interface
- PHP backend

**Data Resources**
Summary

- Extensible Framework
  - Add web service standards
  - Add search and analysis widgets
  - Add data services

- Enables community development
  - Data managers
  - User Interface designers

- Uniform search interface
  - Customizable, reusable
Future Work

• Evaluations (usability, extensibility)

• Implement additional web service standards
  – Semantic Annotations for Web Service Definition Language (SAWSDL)
  – SPARQL - a query language for RDF
  – The OpenGIS® Web Processing Service (WPS)

• Federated search interface

• Incorporate web service discovery techniques
References


Acknowledgements

- Andrew Maffei
- Stace Beaulieu
- Ruth Curry
- Steve Lerner
- Cyndy Chandler
- Maurice Tivey
- Katherine Joyce

- Peter Fox
- Patrick West

Questions or Comments?
Eric Rozell, rozele@rpi.edu

Slides: http://bit.ly/idQhMZ