Connecting the science user with science data and services via the BCube broker and crawler

Science Users

Technology Framework

1A Science Scenario – Ocean

Science scenarios illustrate the types of research undertaken by scientists in the ocean, climate, hydrology and polar domains. These scenarios are the basis of the demonstration that BCube is giving at the EarthCube All Hands meeting.

1B Science Scenario – Hydrology/Climate

3D Brokering Governance – A Research Data Alliance (RDA) Working Group focused on Sustainability

1C Science Scenario – Coastal: Climate Change Impacts on East Coast Estuaries

Biὁre can enable easy access to data from the NOAA-funded National Estuarine Research Reserve Sites (NERRS). Scientists are using these data to examine how fundamental water quality characteristics in estuaries along the East Coast of the U.S. are changing.

The BCube Broker will access and transform persistent data, commonly stored in ASCII tables, into geoJSON for easy use by researchers in developing models of carbon flux due to harsh climate conditions.

1D Polar Scenario (Permafrost)

2B Interconnect Major Facilities

Data Ads, discoverable through web crawlers, allow long-tail and other researchers to make their data more discoverable while allowing local control over their data.

Data would be visible through brokers or special purpose portals, or via search engines such as Google and Bing.

Preliminary discussions with publishers indicate that with the addition of maintained DOI’s, Data Ads are sufficient to satisfy requirements for journal publications.

2C. Create a new Paradigm for Data Discovery through Data Advertisements and Web Crawling

3B Building on Building Blocks BCube, GEOVIS and CINEIGI - St Augustine Volcano

- BCube accesses GEOVIS compatible IRS oceanic data, and UNAVCO SPOS and ISODAR data
- BCube accesses NOAA NSIDC aerosol data
- BCube refines metadata for improved discovery
- Scientists use the data to study eruption dynamics.

3C Building on Building Blocks BCube, GEOVIS and CINEIGI - St Augustine Volcano

Expand the role of Brokering to support geosciences research by:
- Supporting a broader range of cross domain discovery and access use cases
- Incorporating an extended set of semantic vocabularies
- Making it easier to find unique datasets through a “google for data”
- Integrating the broker into an operational EarthCube environment
- Defining the options for long term sustainability

4 Path Forward

1. Science Scenario – Coastal: Climate Change Impacts on East Coast Estuaries

2. Polar Scenario (Permafrost)

3. Building on Building Blocks BCube, GEOVIS and CINEIGI - St Augustine Volcano

4. Path Forward

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5. Engage Brokers to support geosciences research by:
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6. Path Forward

Expand the role of Brokering to support geosciences research by:
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