U.S. Geoscience Information Network: A Critical Path for Data Integration in the U.S. Earth Sciences


Abstract:
Development efforts for the U.S. Geoscience Information Network (USGIN) over the last two years have crystallized around the Community for Data Integration (CDI) at the USGS, and the 50-state AASG State Geological Data project. The next step in developing a USGS-AASG Community to bring these two efforts into closer alignment through greater participation in CDI activities by geoinformatics practitioners from state geological surveys, and implementation of test bed activities by the USGS partners, within two years.

Test bed activities in the geoscience community will define a scope and provide a foundation to promote the use of specifications developed by the larger geoscience community. Adoption of some of these specifications as standards by USGS and AASG for use by those organizations will lend authority and motivate wider adoption. The arc from use case to test to production deployment to agreement on 'standards' for data discovery and access must be propelled by active interest from the user communities who have a stake in the outcome. The specifications developed will benefit the organizations involved in development, testing and deployment, which motivates participation—a model that has worked successfully for standards organizations such as OGC, ISO and OASIS.

Partnership Test Bed Activities

Test Bed Proposal 1: OneGeology — USGS

- USGS and AASG collaborate to implement Web Map and Web Feature Services according to the OneGeology profile
- USGS: responsible for national maps (surficial deposits, glacial deposits, bedrock geology of U.S., etc.)
- State Geological Surveys: deploy services for state-scale geologic maps

- Community agrees on an integrated portal scheme to achieve interoperability between map services

Test Bed Proposal 2: Observation Services

- States and USGS deploy observation services for geochronologic data, geochemical data, gravity stations, or similar community available data or sample-based data

- Community agrees on:
  - Service profiles and interchange formats
  - Procedures to avoid data duplication

- This Test Bed project could build on and enhance the National Geohazard Data System and EarthChem

Implementation Business Model:
- Establish USGIN as a non-profit foundation that will administer the observation services
- Resource from user community and infrastructure support

Establish Governance:
- Community of Practice
- Technical Steering Committee (7 members)
- Representatives from State Geological Surveys, USGS, and other geoscience-focused communities

A Partnership in Delivering Geosciences Information

USGS Strategic Planning Working Group

- Develop a vision for USGIN
- Establish a roadmap for sustainability
- Define interoperability experiments among USGIN partners to demonstrate capabilities

Outreach and Sustainability Planning:
- Engage State Geological Surveys
- Develop services and knowledge base that provides value to user community

Conduct ‘Test Bed’ Activities

- OneGeology — USGS
- Observation Services

Integrated Catalog Capability

USGS Community for Data Integration

CDI is a community of practice established in 2009:
- Facilitate discovery of data and tools
- Develop use of scientific computing capacity
- Develop, implement scientific data products and services
- Enable data integration

CDI members:
- USGS data providers/practitioners/scientists/consumers
- External partners in government, academia, industry

High-value opportunities for USGS:
- Application for better access to USGS corporate data through ArcGIS
- Minerals Resources Data (MRDATA)
- The National Map (TMD)
- National Water Information Service (NWIS)
- A framework for loosely coupled models
- A tool for data upload, registry, and access
- A data management best practices Web site (in progress)
- A series of data management education modules (in progress)
- A new metadata policy to be published in the USGS "Survey Manual" (in progress)