Geophysical Research Abstracts
Vol. 12, EGU2010-1556, 2010
EGU General Assembly 2010

AuScope's use of Standards to Deliver Earth Resource Data

Robert Woodcock (1), Bruce Simons (2), Guillaume Duclaux (3), and Simon Cox (4)

(1) CSIRO Earth Science and Resource Engineering, Australia (Robert.Woodcock@csiro.au), (2) GeoScience Victoria, Australia (Bruce.Simons@dpi.vic.gov.au), (3) CSIRO Earth Science and Resource Engineering, Australia (Guillaume.Duclaux@csiro.au), (4) JRC, Institute for Environment and Sustainability, Italy (Simon.Cox@jrc.ec.europa.eu)

AuScope is an integrated national geosciences framework being built as a component of the Australian National Collaborative Research Infrastructure Strategy. The AuScope Grid element is a geoinformatics network using open standards to allow real time access to data, information and knowledge stored in distributed repositories. AuScope Grid draws together information from new initiatives and existing sources in academia, industry and government.

The network is being deployed using infrastructure components from multiple open source projects in various domains. Together these provide a complete suite of tools for spatial data interoperability. The tools have been used to deploy OGC Web Map and Web Feature Services (WMS/WFS), service registration (CSW) and vocabulary services, and for the development of community application schemas. The key to linking resources in this Community Earth Model is web-service access to geoscience information holdings and computational services, using common service interfaces and standard (i.e. community agreed) information models.

For example, EarthResourceML has been developed under the leadership of the Australian Government Geoscience Information Committee. EarthResourceML is an extension of GeoSciML, the IUGS developed language for exchange of geological map features. Each State and Territory Geological Survey has an earth resource database, storing information on mineral occurrences, commodities, historical production, reserves and resources, deposit classification and the like, each with its own format and sets of attributes and vocabularies. An OGC Web Feature Service has been deployed in each jurisdiction, which maps the local database to the common exchange model, thus allowing the AuScope Discovery Portal to query and consume the earth resource data from the distributed databases. This approach to interoperability is predicated on (a) community acceptance of the exchange model (b) ability and commitment by each data provider to deploy and maintain a conformant service.

In addition to standard information models, interoperability is further enhanced by use of common vocabularies. AuScope has built a service based on SKOS vocabularies, which is used by the Discovery Portal to match user searches against preferred and alternative names. Each service provider matches their local terms to the unique identifier for the same concept in the vocabulary service, which enables the portal to find all responses that match the concept the user specified. This overcomes differences due to language, spelling, synonyms and local variations.