AuScope

AN ORGANISATION FOR A NATIONAL EARTH SCIENCE INFRASTRUCTURE PROGRAM

An invitation to attend the AuScope Web Services Roadshow

Why do we need the AuScope Community Earth Model?

Globally Geological Surveys are experiencing an ever increasing digital data deluge. Our customers are becoming more digitally sophisticated and are no longer satisfied with images and portrayals of data. Customers want digital data in standardized formats that can be used immediately in applications. Hours, days or weeks spent merging data sets obtained separately from multiple agencies is time wasted.

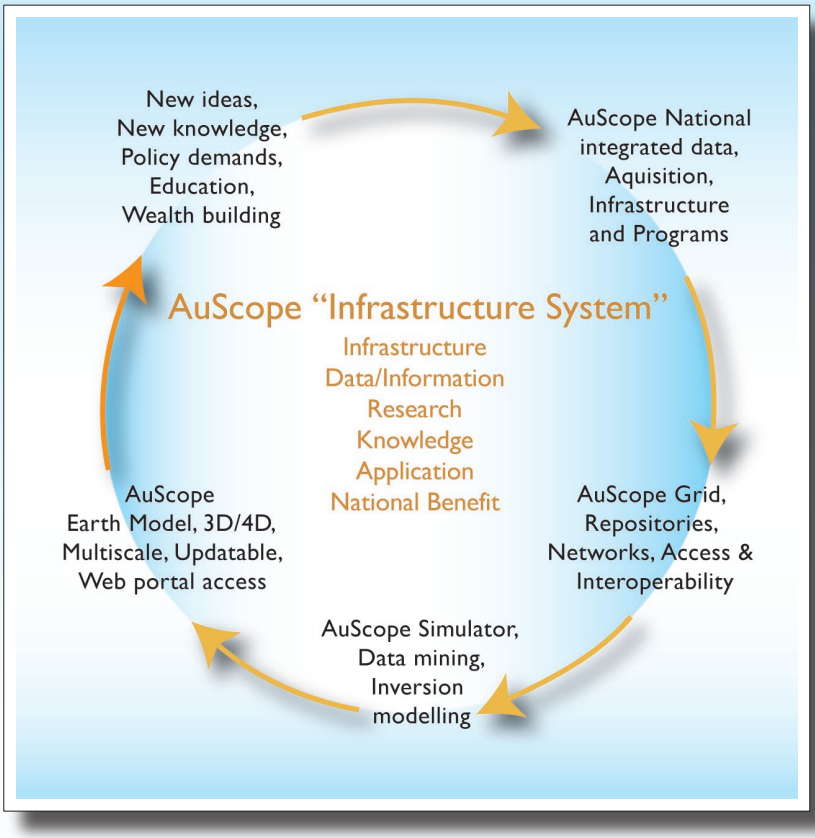
To solve the more complex research challenges of today, we need to build an e-Research Infrastructure to federate nationally distributed data sets, to develop tools to manipulate large data volumes and to establish an appropriate governance framework to ensure sustainability.

Venue:
Geoscience Australia
Sir Harold Raggatt Theatre
Cnr Jerrabomberra Ave
and Hindmarsh Dr
Symonston
ACT

Date:
Friday
19th June 2009

A coordinated approach to data acquisition, analysis and simulation and modelling within the Earth Science community by itself is not sufficient. There has to be cross-capability communication to enable integration of the new earth science compute and data grids with those of other research communities (Water, Spatial).

The eXtensible Markup Language (XML) and web-based data delivery is the technology that enables geoscience agencies to service this need. It allows agencies to implement standardized interfaces to standardized re-usable data products, enabling applications to use global geoscience data in real time.



What exactly is the AuScope Community Earth Model?

The Community Earth Model provides distributed data storage hardware, high bandwidth network links, data management protocols, middleware and software that provides the 'glue' that enables the major geoscience and geospatial data stores of the government agencies to link with the High-Performance Computing resources and high bandwidth networks of the academic and industry communities.

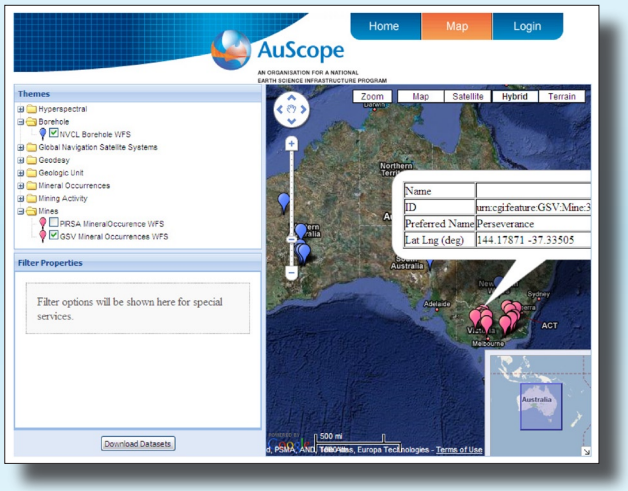
Australian Government
Geoscience Australia
APPLYING GEOSCIENCE TO AUSTRALIA'S MOST IMPORTANT CHALLENGES

What is the AuScope Discovery Portal?

The AuScope Discovery Portal developed for AuScope Grid provides a web-based interface for searching and accessing data, information, imagery, services and applications connected to the grid. It allows users to discover, browse, save, and process geospatial information from earth science data sources around Australia.

The research portal provides access to the geoscience data using GeoSciML, a GML (Geography Markup Language) application that supports interchange of geoscience information. GeoSciML was developed through the Interoperability Working Group of the Commission for the Management and Application of Geoscience Information (CGI), a commission of the International Union of Geological Sciences (IUGS). The Working Group consists of geology and information technology specialists from agencies in North America, Europe, Asia and Australia.

GeoSciML is not a database structure. GeoSciML defines a format for data interchange. Agencies can provide a GeoSciML interface onto their existing data base systems, with no restructuring of internal databases required. Intended uses are for data portals publishing data for customers in GeoSciML, for interchanging data between organisations that use different database implementations and software/systems environments, and in particular for use in geoscience web services. Thus, GeoSciML allows applications, such as the AuScope Discovery Portal, to utilize globally distributed geoscience data and information.



AuScope Discovery Portal

How does the AuScope Discovery Portal Work?

The portal allows users to select and display a variety of data types from a variety of service providers. Hyperspectral, borehole, global navigation satellite, geodesy, mineral occurrence and geology data are all available through the portal. The user can view data, filter the data based on user specified queries and download or deliver data to desktop applications.

How do I make my data available to the AuScope Community Earth Model?

The workshop will demonstrate a variety of web feature services for AuScope data.

Details will be provided of the architecture to deliver PIRSA mineral occurrence data, hosted by CSIRO, and GeoScience Victoria (GSV) mineral occurrence and geology data, hosted by GSV.

Most organizations have now mapped their mineral occurrence data to the GGIC Mineral Occurrences information model. By the end of the workshop the attendees will know what is required to establish Web Feature Services for their mineral occurrence data. A variety of middleware solutions will be provided, along with worked examples of the pitfalls and benefits with each option.

At the end of the workshop participants should have a clear idea of what they need to do to establish mineral occurrence web feature services to suit their business requirements.

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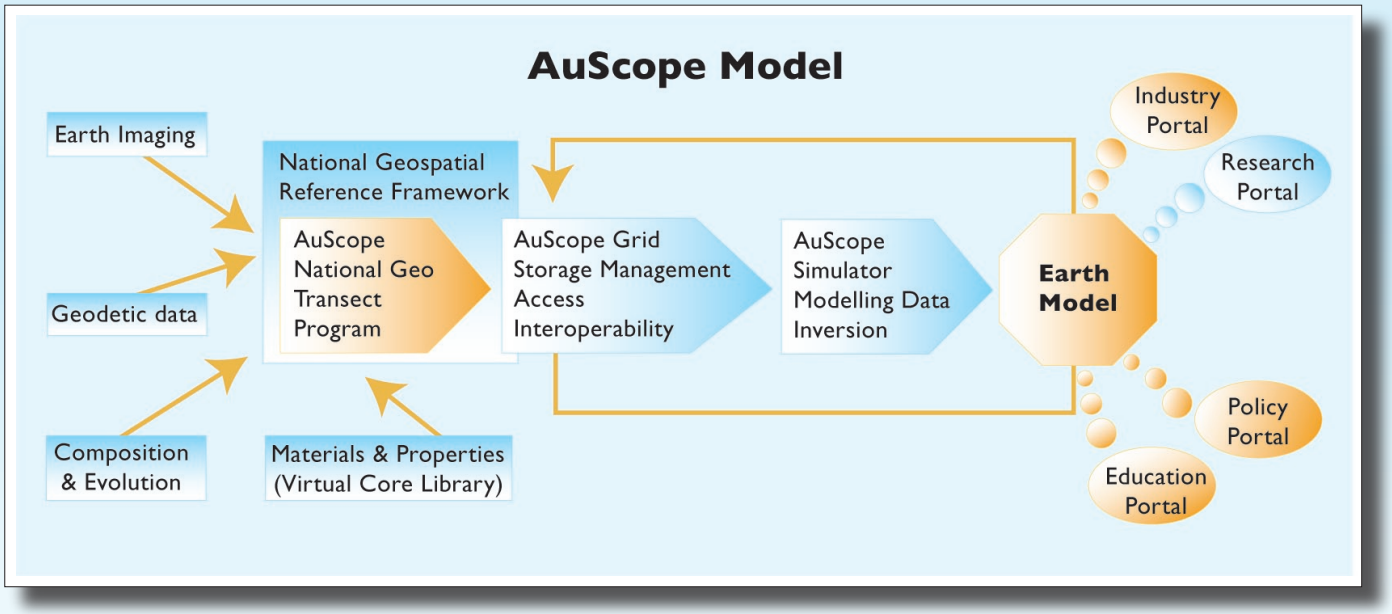
The Program
AuScope Web Services Roadshow

Establishing an Australian Information Network: the NCRIS AuScope Earth Model

In most disciplines and jurisdictions, many current data and information analysis systems work on platforms with locally stored data sets. These datasets are often out of date, and are not necessarily the most accurate or authoritative data source. The lack of access to the most current data is limiting the benefits gained from new technologies such as geographic information systems (GIS), 3D modelling, process simulation and visualisation. In order to provide Government with the best advice to sustainably manage our human, natural, energy and mineral resources, we must be able to easily, quickly and reliably access the best quality data and information across Australia regardless of volume or format using suitable data processing and analysis tools.

AuScope and the Earth Model for the Australian Continent



Goal of the workshop

This workshop is designed to showcase how the Geoscience Community, through the NCRIS funded AuScope Community Earth Model, is establishing an Australian Geoscience Network to provide "transparent access" to data and knowledge about the Australian landscape. The Network also supports online access to open source processing tools.

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Part 1 – Executive briefing – the benefits of an Information Data Network

9.00am	Opening and welcome.
9:05am	A Vision for an Australian Geoscience Information Data Network. Dr Neil Williams, CEO, Geoscience Australia

9.30am	Why build an information network? Dr. Robert Woodcock, AuScope Grid Component Director
	• AuScope Community Earth Model as an example of a common approach that supports your vision
	  • Key components: data sharing, applications, discovery and access
	• Cost Benefits of an Information Data Network:
	  • building locally for access nationally and globally
	  • building to provide access to authoritative, high quality data and information
	  • building to enable reuse and repurposing of data and information
	  • building to integrate with other national and state network initiatives

10:15am	Break.

10:30am	Demonstration of the NCRIS AuScope Community Earth Model - an example of a Data Sharing Network. Dr. Robert Woodcock, AuScope Grid Component Director
	• Key components of the AuScope Network
	  • Nationally delivering Mineral Occurrence data from local sources
	  • Creating seamless geological maps from distributed sources
	  • Drill hole and virtual core data on your desktop
	  • Accessing global navigation satellite and Geodesy systems.

11:45am	General Discussion.
12:00 noon	Close of Executive Briefing.

Part 2 – Technology briefing – How GA can access and use the AuScope services provided

1.30pm — **Making your data accessible on the network.** Bruce Simons, AuScope

- The use of Community Standards
  - The web services standards (OGC and ISO)
  - The geoscience information transfer standard (GeoSciML)
  - The Mineral Occurrence information model

2:00pm — **Architecture requirements.** Ryan Fraser, AuScope Grid Project Manager

- Where does your architecture fit in to the picture

2:30pm — **Comparison of various web feature server applications.** Alistair Ritchie, GeoScience Victoria

- Geoscience information Network (GIN)
- Deegree
- GeoServer

4.00pm — **Technology and Geoscience Australia's Role in an Information Data Network for Geoscience.** Stuart Girvan, Director, Enterprise Systems Section, Geoscience Australia

- How does this fit with GA's current tools and future plans to discover and deliver data?
- How does this fit with our technologies?
- What barriers do we need to overcome to get to production level services?

4:30pm — **Discussion.**

5:00pm — **Close.**

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