

What is COGENT...

The Geological Survey of NSW is a branch of the NSW Department of Mineral Resources. In 1997 the Department awarded a contract to ESRI Australia to develop a Common Geoscientific Environment (COGENT).

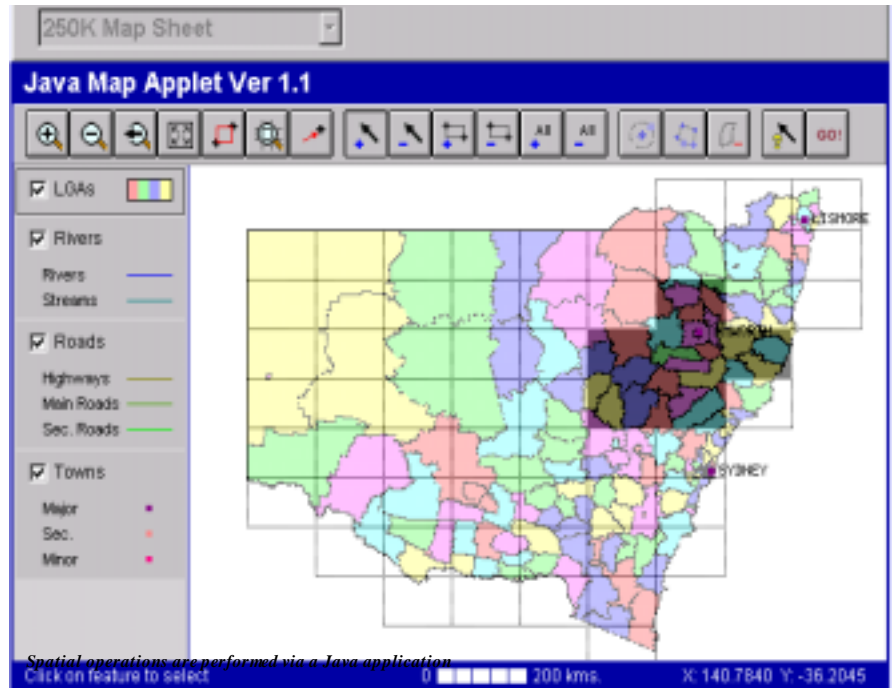
The project started in August 1997 and is due to be complete in January 1999.

This document discusses Activity One, the development of a Metadata System. The Metadata System was completed in May 1998.

What is metadata...

As the department has developed databases over the past decade there has come a realisation that unless it is possible to associate secondary information with the primary data then the usefulness of that primary data is severely limited.

This secondary data holds information such as the spatial accuracy of the primary data, who captured it and when and the original use of the primary data.



This secondary data is known as metadata.

The Australian and New Zealand Land Information Council (ANZLIC) has established guidelines for metadata which describes spatial data. The Departments metadata fully supports the ANZLIC guidelines

but includes extensions to meet the Departments business needs.

System Description...

Metadata Enquiry System:

This is accessible by anyone with access to the Departments WAN. It allows users to enter text and spatial search parameters and returns a report on the Corporate Activities that meet the search parameters. Users can then choose to examine individual Projects that are part of the Corporate Activities. Summary information and full reports are provided for each Corporate Activity and Project.

Metadata Update System:

This is password controlled and is only available to Data Custodians. It allows new Projects to be created or the metadata for existing projects to be edited.

Benefits ...

The aim of the COGENT project is to increase access to geoscientific databases held throughout the

Currency and Status			
Beginning Date :	Not Known	Progress :	Not Known
Ending Date :	Not Known	Maintenance and	
Metadata Date :	06-APR-98	Update Frequency :	
Current Version :	1		
Access			
Available Format Types :	NON DIGITAL MapInfo NON DIGITAL ArcView		
Confidential? :	N		
Access Constraints :			
Data Quality			
Lineage :	Mostly derived from Departmental source.		
Positional Accuracy :	Varies according to dataset 50 to 500 metres		
Attribute Accuracy :	Most checked during data compilation.		
Logical Consistency :	You bet!		
Completeness :	Data from existing datasets and compiled from GS reports back to 1970		

Extract from a full metadata report

COGENT Metadata System

department and in particular within the Geological Survey.

By increasing access to data it is intended to facilitate the business of the Geological Survey which includes; Regional Mapping, Landuse Enquiries and answering client queries, in particular from the Exploration Industry.

The Metadata Enquiry System will allow users to determine the availability of data by using text searches and spatial searches. The text search will search specific fields, use key words, or search the whole database.

By being able to easily determine what data is available, the Departments business activities will be improved. This will especially affect the turn around time for client queries.

Industry will benefit by having better access to the Departments data, thus facilitating exploration in NSW.

Who will use it...

The system is intended to be used by geologists, geophysicists, cartographers and other personnel of the Department. However, a wide range of people will benefit from the ability to clearly and unambiguously determine what data is available for a specific spatial area or for a specific topic.

The current system is available on the Departments intranet and is designed for inhouse work. Members of the public or industry representatives can use the system by attending any Departmental office.

A future expansion to the Internet is being considered. This will greatly facilitate access to the general public and to industry.

Major components...

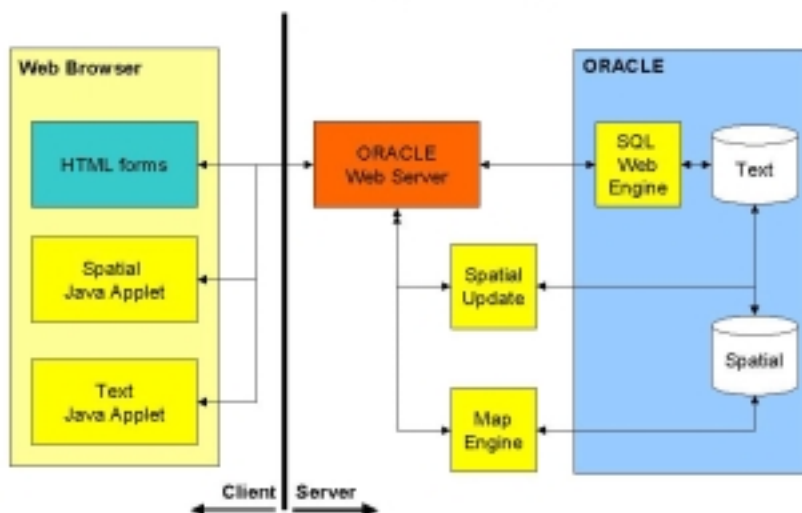
HTML Forms:

Active HTML pages with embedded forms are used for all text search activities.

Technology...

The COGENT Metadata system is implemented as an Intranet solution on the Departments Wide Area Network (WAN).

Metadata System Diagram



Results are returned as formatted HTML reports. An option also exists to export as ANZLIC export format.

Spatial Java Applet:

This allows the user to interactively specify an area of interest to spatially limit the text search.

Data custodians can also graphically enter the spatial extent of new data sets.

Text Java Applet:

Allows data custodians to update the text metadata in ORACLE.

SQL Web engine:

PL/SQL code that performs the bulk of operations within the system. Routines generate the HTML pages, query the database and control access to the update system.

Map Engine:

Retrieves spatial and attribute data from the SDE databases and displays it on the Spatial Java Applet. It is written in C.

Spatial Update:

Automatically updates the spatial extent polygons associated with the metadata after custodians make changes. It is written in C.

The Department operates a Digital 8200 server running the OSF/1 operating system.

The metadata resides in an ORACLE 7 database and related spatial data resides in the Spatial Database Engine Version 3.02 (SDE) from ESRI. SDE allows spatial data to be stored within an ORACLE database.

Web serving is performed with the Apache Web Server. This is the Departments preferred web server. Other web servers can be supported.

Programming was performed using PL/SQL, Java, C, and Perl.

Java programming used the Symantec development tools.

Database design and data modeling was performed using ORACLE Designer 2000 tools.

The application assumes that a browser equivalent to Netscape 4 or higher is being used. This is principally to cater for the use of Java applets.

Contacts...

Dept of Mineral Resources:

Mr Peter Lewis (02) 9901 8372

ESRI Australia:

Mr Quill Williams (02) 9241 2138