

## **Canadian Geoscience Knowledge Network Update #5 (Sept. 2002)**

This email is the fifth in a series of CGKN email updates. Previous updates and other information about CGKN can be found at the CGKN Home Page (<http://cgkn.net>)

### **1) CGKN On-line Geoscience Data Catalogue Project**

This ongoing project is creating comprehensive catalogues containing consistent metadata describing all government geoscience data searchable through a CGKN Internet search engine and the GeoConnections Discovery Portal. This project is funded by the Earth Science Sector's Targeted Geoscience Initiative (TGI) and NGSC agencies.

Since the March 2002 update, the following progress has been made by the federal/provincial Implementation Working Group.

- a) The CGKN on-line catalogue search engine is now operational. Feedback is being received and improvements will be planned over the next few months.
- b) 26 metadata catalogues from 9 NGSC agencies are now completed and online.
- c) The remaining agencies are currently making progress towards the completion of metadata catalogues.
- d) Improvements to the metadata catalogue server software are due out this month from the software vender.

Progress on completion of agency metadata catalogues has been slower than planned. Each agency is encouraged to prioritize this work while funding is available. Contact James Rupert for information.

### **2) GSC Support**

Support for the CGKN is currently positioned within the ESS's Geoscience for Sustainable Development Program. This program will address some of the information management issues within ESS and will take responsibility for the incorporation of ESS information in the CGKN.

### **3) GeoConnections Support.**

In August 2002, the CGKN submitted a proposal to GeoConnections for \$300,000 in funding to lever existing cash and in-kind funding from NGSC agencies and the Targeted Geoscience Initiative (TGI). This proposal builds on the CGKN work of last year with a strong emphasis on client focused deliverables. It is anticipated that the proposal will be well received. Contact John Broome for information.

### **4) CGKN Data Integration Working Group Update**

The federal-provincial CGKN Data Integration Working Group continues to meet monthly via conference call to work on solutions for technical issues related to CGKN Implementation. Subgroups involving both federal and provincial participants have been

created to develop the CGKN standards and tools required by each discipline. Two new subgroups have been established, which are Mineral Deposits and Geochronology. An update on key developments follows:

### **5) Bedrock Geology**

Since April 2002, the Bedrock Geology Working Group and made significant progress in several area. The following major geological map sets have been loaded into several similar NADM databases: the Yukon digital geology compilation, the BC Geological Survey compilation of British Columbia (1:250 000 scale), and the contents of the Newfoundland and Labrador Survey's Geolegend database for Newfoundland (covering about 60% of the island of Newfoundland). In addition several smaller sets have been entered; 15 GSC bedrock geology maps by ESS Info, and one map from each of the Central Forelands and Ancient Pacific Margin NATMAP projects. Finally, several regional scale map coverages have also been loaded by GSC Pacific (the Tectonic Assemblage map of the Cordillera and the 1:5 000 000 map of Canada). The ESS Info map set can be found and viewed through the CGKN Data Catalogue and GeoConnections Discovery Portal (formerly CEONet), demonstrating a service that will be extended to the other map sets.

Progress has been made to allow consistent generalization of the map sets at the level of Geological Province and Tectonic Assemblage. This latter classification was developed for the Cordillera, and a prototype has now been developed for the Newfoundland map set, and hence the Appalachian Orogen. A preliminary method of indexing map units at both detailed and more general levels by their lithological characteristics has been developed and is being tested on the Yukon map set. This will allow map units to be searched and grouped based on combinations of properties such as the composition, genesis, texture, fabric and mechanical properties of their constituent lithologies, in addition to geological age, to produce derivative thematic maps. Work remains to be done to develop and apply Tectonic Assemblage level map unit schemes for Nunavut and Labrador, and to index the remaining map sets by lithological properties. This work will require a continued commitment from CGKN and a modest infusion of new cash resources. For further information contact Peter Davenport.

### **6) Surficial Geology**

Version 1.0 of the Surficial Geology Data Model (SGDM) was completed following a surficial geology focus group workshop in May (after the GAC Annual Meeting). This focus group, made up of provincial, territorial and federal geologists (Ontario, Nunavut, Alberta, Saskatchewan, and GSC), provides this project with a diverse sounding board for science language development. Several Provincial and Territorial legends have been temporarily added to the Ottawa Geospatial Data Repository (GDR) for data model and science language development.

A new version of the geological map legend parsing tool has been developed, as well as, a map viewer / query tool which permits the user to query the geospatial data based

on the science language or the original legend description. These two tools (Parsing Tool and ArcIMS query tool) will be used by the surficial geology focus group to parse and query their own maps/legends in order to comment and 'test drive' version 1.0 of the SGDM. The content analysis work is now near completion and the results will be used to update version 1.0 SGDM to version 1.1 by end of November 2002. This will make the science language more robust as it will use the geologists' own terminology (as extracted from existing legends) to reinforce the concepts defined in the SGDM.

Building upon ArcIMS WMS functionality and existing MAPSERVER work (Bedrock Project), this project will develop an open WMS 'GetMap' service which will provide a WMS client with a standard representation of a surficial geology map and legend. The development of a WMS client ability to query the science language can then follow.

Detailed work on a stewardship policy to support the logical model, the science language and tool development continues with other CGKN working groups (bedrock and geochemistry projects) where roles and responsibilities are clearly defined. With the development of version 1.1 SGDM and stewardship policy, a multi-day science language workshop will be held in early December. The goal of this workshop is to finalize the science language and stewardship policies so that version 2.0 of the SGDM will be operational by March 31, 2003. Contact Dr. Ron DiLabio for more information.

## **7) Geochemistry**

At least 6 provinces and the GSC are participating in the "Geochemistry On-line" Project and continue to meet regularly. Due to the priority of national security contracts at Public Works Canada following 9/11, the GoldTools development was postponed until the 2002-03 fiscal year. The recent availability of relevant commercial off the shelf software (COTS) is allowing this project to build much of the technology for GoldTools. A test implementation funded through GSC project money has permitted the development and evaluation of the tool's backbone. As funding becomes available (i.e. GeoConnections), contracts will be given to code components of the tool suite. Using GeoConnections funding (again, when available), the project will oversee a contract to develop an open source capacity to build a WMS server for a distributed network of provincial, territorial and federal servers using the Geochemistry Data Model. This project is also coordinated with other projects (Bedrock and Surficial Geology projects) to develop a practical and robust stewardship policy defining roles and responsibilities Contact Andy Moore for more information.

## **8) Geophysics**

The GSC has just completed a contract with DM Solutions to develop a system for the provision of metadata, on-line visualisation and on-line delivery of total field magnetic data in industry standard grid formats. Contact Warner Miles for further information.

## **9) XML/GML**

This CGKN/GeoConnections project has developed a series of provisional XML “schema” for geoscience data that will allow, tagged, text-based exchange of geoscience data between agencies. A generic schema has also been developed for merging different mineral occurrence databases for other stakeholders. The contractor, Galdos Systems, has developed draft application schema for geochemical, geophysical, and mineral deposit data. The geochemistry schema is based on the NGR Standardized Geochemical Data Model developed by CGKN. The national mineral deposits schema has been developed from Yukon, Ontario, BC (MINFILE) and Newfoundland mineral deposit databases. In March 2002, the contractor delivered several prototype schemata for mineral occurrence data, the NRG Geochemical Data Model and geophysical data derived from the GXF standard. The development of these schemata ensures that geoscience data can be archived and exchanged without loss of information. XML/GML is evolving as an exchange standard of choice in both government and commercial applications. Further XML / GML development work is on hold until the results of the 2001/2002 work have been more fully tested in CGKN implementations. Contact Eric Grunsky of John Glynn for more information.

## **10) Sedimentary Basin/Petroleum Resources Project**

This discipline working group was established to recognize and focus on sedimentary basins and petroleum resources. Initial meetings were held in late 2001 and early 2002. A mandate and some basic principles were established and posted on the CGKN web site. The Group agreed to build on existing activities and data models (PPDM, NADM). However, due to a lack of provincial participation, the group is presently inactive. It was suggested that this work group be given a lower priority and put on hold, until the other work groups (Bedrock, Surficial geology, Geochemistry, etc.) are further along or until an immediate need arises. CGKN resources can then focus on this working group subject. Contact Phil Moir for further information.

## **11) Mineral Deposits**

A preliminary draught of the mandate for the Mineral Deposits Data Model Subgroup was circulated to provinces and territories on May 23, 2002, and revised on June 12, 2002 in response to feedback. Feedback received later in June and early July has been incorporated into a third draught distributed on September 5, 2002. Issues of mineral deposit classification and scope, in particular, need to be discussed among the working group. The question is whether or not the group efforts should be focused at first on deposit and/or occurrence geology, ignoring other entities such as land tenure and related business issues that are linked into some of the provincial databases. A formal mandate statement will be submitted to the CGKN secretariat after these issues have been discussed and wording has been adjusted accordingly. Contact Lesley Chorlton for further information.

## **12) Geochronology**

This subgroup recently initiated development of its mandate. Progress is being made on the development of a geochronology database. Contact Mike Villeneuve for further information.

### **13) New CGKN Web Site**

The new CGKN web site was unveiled in early May. The CGKN site was redesigned to better direct clients to the tools and services of the CGKN, as well as, support the activities of the working groups and facilitate maintenance. New graphics and descriptive information enhance information content and facilitate participant access to projects, documents, and discussion groups. Contact James Rupert for further information.

### **14) Kerri Croucher**

Kerri Croucher was instrumental in the creation of the new CGKN web site. She has recently left the CGKN for the greener pastures of a full time position with a local school board.