

# CGI 2008



ANNUAL REPORT TO THE INTERNATIONAL UNION OF GEOLOGICAL SCIENCES FOR 2008

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# New CGI Council for 2008 – 2012 elected and endorsed by IUGS in Oslo



*CGI Council meet at the 33 IGC - from left John Broome, Koji Wakita, Anna-Karren Nguno, Dave Soller, Ian Jackson, Pater Baumann, Kristine Asch, Francois Robida, Simon Cox, Bruce Simons, (David Percy not present).*

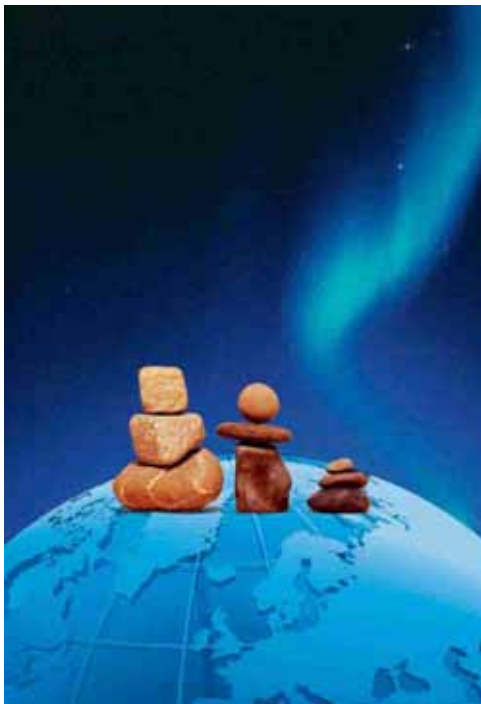
CGI sought nominations for its Council during 2008. By the deadline 10 nominations were received for the 12 places available. An additional Council Member has now been provisionally agreed.

The new Council is: Kristine Asch (Chairperson) – Germany, Ian Jackson (Secretary General) – UK, François Robida (Treasurer) – France, Gabriel Asato – Argentina, Peter Baumann – Germany, John Broome – Canada, Anna-Karren Nguno – Namibia, Bruce Simons – Australia, Dave Soller – USA, and Koji Wakita – Japan

We particularly welcome Bruce Simons, Peter Baumann and David Percy as new members and thank Simon Cox, Sergei Chersakov for their contribution over the last 4 years.



# Geoscience Information Symposium



Working in collaboration with the International Association of Mathematical Geology and the Geoscience Information Consortium, CGI played the key role in the organization and operation of the largest and most comprehensive ever Geoscience Information Symposium at the International Geological Congress in Oslo, Norway Aug 6-14. The Symposium included 3 plenary sessions and 14 technical sessions focused on the acquisition, management, use, and dissemination of geoscience data

Highlights of the symposium included sub-sessions on portable systems for geological data collection in the field, geoscience data models and ontologies, geoscience information systems, metadata, and 3D modelling. All sessions were well attended reflecting the increasing importance of data management and informatics in the geosciences.

An additional session focussed the OneGeology and included presentation on the key role that CGI-endorsed standards play in the initiative. The GeoSciML geological data exchange Schema being developed by the CGI Interoperability Working Group is the primary data exchange mechanism being used by OneGeology. The important role that the CGI plays in coordination and

endorsement of international geological data standards was referenced repeatedly during the IGC. This recognition is significant given that the CGI was only created at the previous IGC meeting in Florence.

This was the first time that all geoscience information abstracts at the IGC were coordinated. The multi-agency approach used for the Geoscience Information Symposium was deemed a success and plans are underway to follow the same approach again at the next IGC in 2012.

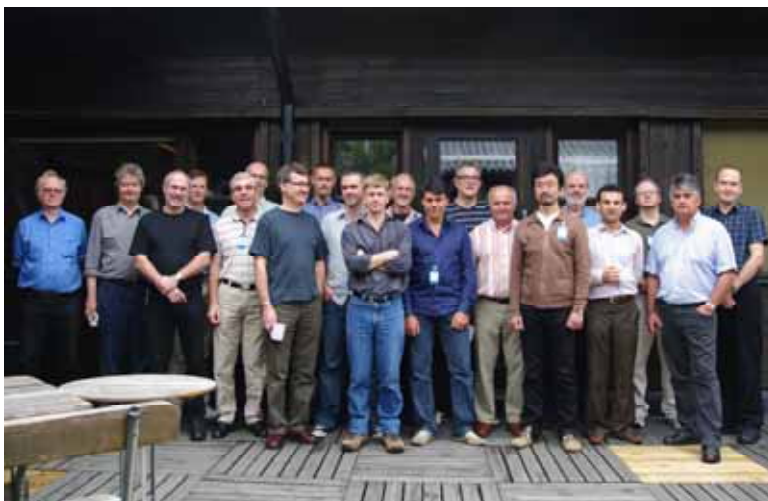


# Interoperability

The work to define the semantic language and syntax that allow applications such as OneGeology to obtain geoscience data from multiple sources is a major CGI undertaking. During 2008, the CGI Interoperability Working Group has developed, tested, demonstrated, documented and released this mark-up language, GeoSciML v2.0.

The past year has been an extremely busy and productive year for the Interoperability Working Group. The September 2007 meeting in Melbourne, Australia defined the aims and work plan for development of GeoSciML. For 2008, this was to include a third round of testing the model through a number of ambitious use cases (Testbed 3), hold a workshop during the 33IGC and officially release GeoSciML v2.0, along with appropriate documentation. Through its various task groups the Interoperability Working Group achieved all the aims it set for 2008.

The Testbed Task Group held a short meeting in Orleans, France in February 2008, hosted by BRGM. The task group reviewed the progress of Testbed 3 and the implementation of the registry service by BRGM, as well as reviewing and refining the use cases in light of implementation issues.



The Geological Survey of Sweden hosted a second meeting of all task groups immediately prior to the 33IGC in Uppsala, Sweden (August). The twenty participants, representing eleven geological survey or research organisations, reviewed the Testbed 3 results, modifying GeoSciML where required, prepared for the 33IGC interoperability workshop and reported on progress in establishing draft multi-lingual vocabularies to allow exchange of common data content.

The Interoperability Working Group ran a workshop on Sunday 10 August from 09.00 to 14.30 during the 33IGC, with 47 attendees from 23 countries. The overwhelming majority were from Geological Survey Organisations, along with a few from universities and commercial organisations. The workshop provided an overview of GeoSciML and demonstrated Testbed 3. Seven organisations (Geoscience Australia, Geological Survey of Victoria, British Geological Survey, Geological Survey of Canada, Geological Survey of Sweden, BRGM, Italian Environment Protection and Technical Services Agency) successfully demonstrated GeoSciML web feature services. These included a web service hosted by BRGM delivering multi-lingual geoscience concepts.





Extensive discussion occurred during the workshop, principally involving clarification and information on aspects of GeoSciML and the web services. The participants were supportive of the principles of GeoSciML and interested in adopting it in their organisations. Some felt that the provision of a database schema based on GeoSciML would be a useful addition to the products available. The workshop participants also felt that the vocabularies and ontologies that the Interoperability Working Group developed for the purpose of Testbed3 data interchange, required wider consultation.

During the 33IGC, GeoSciML also received considerable exposure through the OneGeology release along with a number of presentations during the Information Symposia. During 2008, speakers presented GeoSciML at the GIC-22, GEON 2007, AGU Fall Meeting 2007, WALIS 2008 and AESC 2008 conferences.

In addition to the OneGeology take-up, the Canadian GroundWaterML initiative and Australian MineralOccurrences have extended GeoSciML into their domains. The European INSPIRE and US Geoscience Information Network are both looking at GeoSciML as a standard for geology data exchange. Software vendors such as ESRI, GeoModeller and SnowFlake are developing applications to allow direct import of GeoSciML formatted data.

Testing of the modifications to the model made during the Uppsala meeting (Testbed 3.1) is now completed. GeoSciML v2.0 will be officially released during the December 2008 AGU Fall Meeting in San Francisco, USA.

CGI is keen to see that its work on the Multilingual Thesaurus (MLT) and the Interoperability Working Group (IWG) are as closely linked as possible to progress a standard set of vocabularies that can provide the content for the GeoSciML geology exchange language. Improving this linkage will be an objective during 2009.



# OneGeology Portal launched in Oslo



OneGeology is an initiative in which CGI and its members play a significant part. Only two and a half years after the concept had been introduced OneGeology and its portal was formally launched at the 33<sup>rd</sup> IGC.



At the beginning of the 33<sup>rd</sup> IGC 81 nations were participating in OneGeology; the number has now grown to 94. Of the 81 nations, 30 were serving data to the OneGeology portal by 6 August 2008 – this equated to almost 100 map datasets from national sources and also, importantly, from the prime international scientific body in global geoscience mapping, the CGMW. The technology to achieve OneGeology is not complex, but it in terms of the scale of the deployment it is truly world leading. A basic principle of OneGeology is that it must be open to all geological surveys to

participate, regardless of development status and the project has devised protocols and systems to ensure this. OneGeology is thus open to those who currently possess only traditional paper geological maps, and to those operating sophisticated web mapping systems. The end-user does not require specialist software, only access to the Internet via a web browser. In this first phase OneGeology is delivering digital geological map data from participating nations using Web Map Services (WMS). This is a distributed, dynamic and sustainable model, which unlike Google Earth leaves the data where it is best looked after and updated; that is with the provider nations. Each survey either registers its web service with the OneGeology Portal or works with a partner survey (a “buddy”) to serve that data. OneGeology technology is compliant with the international Open Geospatial Consortium (OGC) Web Map Service standard. Geological surveys may use a variety of software (e.g. MapServer) to serve their data. The Portal displays the map data served by each country and provides users with the ability to zoom, pan, switch map data on and off, change its opacity and transfer it to Google Earth.

The OneGeology initiative has made tangible progress in other areas too. The European Commission, under its *eContentplus* programme, has agreed to fund a 2-year, €3.25 million, 19-nation project known as OneGeology-Europe. This will move OneGeology forward faster and allow developments in higher resolution and applied data too. In the USA the National Science Foundation is providing almost \$700 000 for a similar initiative in the 50 US states – a Geoscience Information Network. These and other continental initiatives will be well linked to ensure complementarity of development and maximum synergy and benefit globally.



# Workshop on geoscience information in Africa (GIRAF2009)

The Federal Institute for Geosciences and Natural Resources (BGR) together with the IUGS Commission for the Management and Application of Geoscience Information (CGI) and the Geological Survey of Namibia (GSN) made substantial progress in organizing a workshop on geoscience information in Africa (GIRAF). The Workshop will take place between 16. and 20. March 2009 in Windhoek, Namibia. The organisers are: Kristine Asch (BGR, CGI) and Gabi Schneider (GSN), supported by Peter Schütte (BGR) and a team from GSN and CGI.



The main objectives of the Workshop are:

- to bring together the relevant responsible authorities and national experts for geoscience information
- to initiate building a pan-African network of geoscience information knowledge to exchange and transfer geoscience information knowledge and best practice
- to integrate the relevant responsible authorities and national experts into the global geoinformation activities
- to make Africa an active part of the international geoscience information community

GIRAF 2009 will consist of lectures, discussions and short courses on topics such as GIS, internet and interoperability.



Key points of progress during the past year are:

- funding of 125 000 € received from German Federal Ministry for Economic Cooperation and Development (BMZ),
- support for the Workshop coordinator has been employed,
- a web site set up and connected to CGI web site: [www.GIRAF2009.org](http://www.GIRAF2009.org)
- a 1st Circular produced and distributed at IGC2008 in Oslo, poster displayed at IUGS booth, and GIRAF2009 announced at IGC ICOGS meeting
- an address list for the African invitees collated
- preparation visit to Windhoek took place in October and achieved:
  - Geological Survey Director of Namibia agreed to be co-organiser,
  - Logistical arrangements made (hotel, rooms, catering, transport and equipment),
  - programme refined,
  - two prominent African Keynote speakers have agreed to participate,
  - the Germany Embassy have been engaged and have agreed to provide a greeting invitation letter sent

This outreach event has taken and is taking a considerable amount of work, planning and preparation, so its successful delivery will represent a very important achievement for CGI and IUGS in Africa. We hope that senior IUGS and ICSU representatives from in and outside Africa will be able to attend.





# Earth and Space Science Summit



CGI was represented at an Earth & Space Science Informatics Summit in Rome 13-14<sup>th</sup> March 2008, convened as an Electronic Geophysical Year (eGY) activity. Participants represented the interests of more than 45 leading agencies and initiatives with an interest in geoinformatics. The Summit successfully establishing the basis for better mutual understanding and communication among the leaders of Earth & space science informatics programs worldwide, and confirmed a common resolve to work together cooperatively on data issues that demand a global approach. Participants noted the extraordinary growth of informatics in the Earth & space sciences, as well as elsewhere, to the extent that informatics is becoming the fourth pillar of the scientific method. At this formative stage, it is inevitable that special interest groups take individual approaches to establishing systems, interoperability protocols, data models, and so forth. Now is a critical time for establishing communication and coordination at the international level to seek uniformity in practices and standards, and reduce replication of effort.

What stood out as the main challenge to be addressed is the lack of infrastructure and governance to (i) cater for the professional needs of scientists and engineers engaged in informatics and (ii) provide an international framework for policy and action. The International Council for Science (ICSU) was recognised as the peak body best positioned to exert the necessary leadership. The Summit applauded the steps already taken by ICSU in this regard, and endorsed enthusiastically the recent recommendations of the ICSU's Strategic Committee for Information and Data. Informatics and data stewardship activities are generally a low priority for research scientists. Further, our present reward systems provide little incentive for change. Participants at the Summit regretted this situation as it fails to reflect the growing importance of informatics and the shift in work load from the user to the provider of data. It also compromises the availability and re-use of data. In addition to the above broad issues, the Summit dealt with a range of technical, community, marketing, and governance issues. The Summit concluded with a stronger sense of common purpose among the participants and a clearer view of the steps needed to establish a productive international framework for governance and leadership. A series of recommendations were developed under the groupings Governance, Professional Structure and Coordination, Technical and Systems, Marketing, Status and Approaches to take.



# CODATA



The CGI provides the IUGS with an IUGS voting delegate at the bi-annual “Committee on Data for Science and Technology”, or CODATA meeting. (<http://www.codata.org>). CODATA is an interdisciplinary scientific committee established by the ICSU to improve the quality, reliability, management and accessibility of data of importance to the fields of science and technology. The 2008 CODATA conference was a medium-sized event (~500 participants, 30 countries) that provided an opportunity to share information on management, exchange, and delivery of scientific information, data, and knowledge across scientific discipline boundaries. Sessions tend to be high-level and focused on policy and planning rather than detailed technical solutions. Typical sessions discussed subjects such as; data archiving, quality control, publication, interoperability, metadata, knowledge discovery, visualization, and communications. There were

complete sessions addressing approaches from the domains of material science, earth science, biology, environment, biodiversity and remote sensing. John Broome (Canada) is the IUGS/CGI delegate. In addition to attending the CODATA General Assembly, Mr. Broome made a presentation on OneGeology/GeoSciML and data stewardship.

#### Key Results of the 2008 CODATA Conference:

- The International Union of Geophysics and Geodesy has recently taken steps to create a “Data Commission” to address many of the issues that resulted in the IUGS creating the CGI. Opportunities for synergy between the CGI and the new IUGG Commission were discussed and plans are in place to establish cross representation on the Councils of the two commissions to ensure synergy between the 2 groups.
- A conference session and General assembly item focussed on the ICSU Strategic Committee on Information and Data (SCID) Report. A special consultation session was held to discuss the recommendation in the SCID Report.
- The OneGeology/GeoSciML presentation generated considerable interest in the CODATA community. Of particular interest was the extensible nature of the standard and possible opportunities to use it for other data sets. A paper on the subject was invited by the Data Science Journal.
- CODATA strongly supported the planned CODATA-endorsed GIRAF conference in Namibia in March 2009 as an initiative that will address the global “digital Divide”. The CODATA General Assembly requested that a CODATA presentation be included in the agenda of GIRAF.



# Open Geospatial Consortium



CGI continues to strengthen its connections with the Open GeoSpatial Consortium. OGC ([www.opengeospatial.org](http://www.opengeospatial.org)) is a non-profit, international, voluntary consensus standards organization that is leading the development of standards for geospatial and location based services. OGC is an international consortium of 365 companies, government agencies, and universities participating in a consensus process to develop publicly available interface specifications. OGC specifications support interoperable solutions that "geo-enable" the Web, wireless and location-based services, and mainstream IT. The specifications empower technology developers to make complex spatial information and services accessible and useful with all kinds of applications.

To this end, OGC closely cooperates with relevant neighbored bodies, such as ISO (in particular TC 211), OASIS-Open, and W3C. ISO specifications form the basis for OGC's specifications; for example, ISO 19123 has been adopted as Abstract Specification Topic 6 in OGC. Conversely, ISO issues OGC standards in parallel. Since 2007, a liaison also exists with CGI to foster mutual information as well as harmonization of specifications.

Given the complexity of geo services, OGC does not aim at a single, monolithic standard, but rather issues a family of modular specifications which are initiated on demand and through active participation. All specifications are based on the unified architecture laid down in OWS Common and the Abstract Specifications.

While OGC historically has started with a GIS perspective in mind, today "geo service" is understood as servicing any kind of location-based information over the Internet. As such, there are tight connections into domains like atmosphere and ocean modeling, security (such as air traffic control),

It is safe to state that OGC is the most relevant geo service standardization body today, and actually driving the field. For example, the European INSPIRE initiative which defines a regulatory framework for geo services offered by governmental agencies within the European Union is completely based on OGC standards. The steadily growing number of OGC members as well as OGC-compliant products and operational services hints that OGC will continue to play an important role in open, interoperable geo services.

In the spirit of cooperation for technological interoperability a mutual acknowledgement of specifications among CGI/IUGS and OGC is advantageous and will send an encouraging signal to the relevant user communities.



# News from Asia, Europe, North and South America and Oceania



## Asia

The Geological Survey of Japan (GSJ) and the Coordinating Committee for Geoscience Programmes in East and Southeast Asia (CCOP) organized two major working groups in the early 2008. These are the CCOP GEOGrid and the OneGeology-CCOP working groups. The activities of the Asian regional working group are based on the activities of these two groups. The CCOP GEOGrid working group held its first meeting in Tokyo and Tsukuba, Japan from January 21 to 24, 2008. The meeting was attended by representatives of the CCOP-Member countries such as Cambodia, China, Indonesia, Japan, Korea, Malaysia, Philippines, Thailand and Vietnam. This was followed by the first meeting of OneGeology-CCOP working group on January 25, 2008.

Mr. Tim Duffy of the British Geological Survey (BGS) was invited as speaker at the two working group meetings. He and GSJ staff gave lectures about GeoSciML and OneGeology projects and other topics related to Open GIS. Participants at the meetings and lectures learned about the importance of standardization of geoinformation and interoperability, as prerequisites for cheap and efficient methods of processing and distribution of geoinformation through the World Wide Web.

Before the 33<sup>rd</sup> IGC in Oslo, GSJ and CCOP helped the geological surveys of the East and Southeast Asian countries setup Web Mapping Servers (WMS) for their 1:1,000,000 scale digital geologic maps for registration into the OneGeology portal. The WMSs of the geologic maps of Japan, Korea, Philippines, Thailand and Indonesia were successfully setup and registered to the OneGeology portal. GSJ also setup a WMS client for viewing of the said online maps. The URL of the client is [http://geodata1.geogrid.org/client\\_trial2/index.html](http://geodata1.geogrid.org/client_trial2/index.html).



The second meetings of the CCOP GEOGrid and OneGeology-CCOP working groups are tentatively set for January 2009 in Bangkok, Thailand. The OneGeology GeoSciML version will be introduced to the members of the two working groups. The dissemination of the GeoSciML technology to the Asian countries will be discussed during the meetings. These will be the first activities of the CGI Asian Regional Working Group in 2009.





## Europe

The INSPIRE Directive, adopted in 2007, is now a strong driver for pushing the adoption of interoperability in environmental information in Europe. The current process is the transposition phase (transformation into national law in every member state), and the preparation of implementing rules that will define the detailed specifications are currently prepared by drafting teams. Four members of CGI take an active role in the drafting teams (and chair one of them), thus ensuring to GeoSciML and the testbeds developed by the IWG a place of key references.

EuroGeoSurveys (EGS), the association of European Geological Survey is a strong advocate of GeoSciML and promotes its adoption in all the European-scale projects supported by EGS, as well as its extension to other related geoscientific domains.

The CGI members of France, Italy, UK, Sweden have provided a strong contribution to the realization of the GeoSciML testbed presented in Oslo, where BGS and BRGM have provided a GeoSciML interface with their modeling packages to illustrate the use of GeoSciML in 3D modeling workflows.

The OneGeology Europe project submitted in 2007 has been selected for funding by the Commission for a duration of two years. The kick-off meeting happened in September 2008 in Rome. It will give the opportunity to the project partners to further develop and implement GeoSciML, in line with INSPIRE implementing rules, and to provide an harmonized 1:1 million scale map of Europe.

European CGI members took part to the European INSPIRE Conference in Maribor (Slovenia) where GeoSciML and OneGeology were presented. Regular meetings with European Commission staff maintain a strong visibility of CGI activity which is recognized as a reference model of international thematic coordination.



## North America

In North America, significant progress was made in geoscience standards development and provision of regional and national databases, in coordination with similar initiatives in other regions. CGI's influence on these activities, in particular by facilitating communication and supporting standards development, was noteworthy. The Geological Survey of Canada (GSC) and U.S. Geological Survey (USGS) strongly endorse the CGI's mission, and invest significant resources in CGI Council and Working Groups.

Through the CGI Interoperability Working Group, North American scientists continued to help refine the GeoSciML data-exchange format standard by: 1) supporting the GeoSciML Testbed 3 effort through development of mediator technology and testing in national-scale map database systems; 2) establishing various science terminology lists and definitions for use in GeoSciML; and 3) extending the GeoSciML schema to aquifer data. GSC and USGS anticipate this new standard will greatly improve management and interoperability of their databases. For example, the GSC recently received C\$ 100,000,000 in funding over 5 years to improve knowledge of the Canadian Arctic; geological data collected through this new program will be managed in a new data system that will utilize GeoSciML for data exchange. Further, the U.S. NSF-funded "Geoinformatics Network" received 3-year funding to design fundamentals of a U.S. infrastructure for the state and federal geological surveys that will rely on GeoSciML for data exchange.

CGI-related standards development work was discussed and summarized at the twelfth annual international technical workshop "Digital Mapping Techniques '08", held in Moscow, Idaho; in particular, progress reports on science vocabularies standards and on comprehensive technical and science standards for geologic maps, and collaboration with ESRI to implement the U.S. Federal cartographic standard for geologic maps. Database projects in North America, in collaboration with CGI, also invested significant effort with ESRI to design an Arc Geodatabase template for geologic maps that will both facilitate creation and production of map databases in ESRI software, and import/export GeoSciML-encoded map data.

## South America



Since the promotion activities of the CGI in South-America, the OneGeology meeting in Brighton, and the increasing interest created around the OneGeology initiative, the countries of the region are becoming to recognize the importance of geoinformation technology and the role of technical knowledge and experience sharing among them. This tendency is much better appreciated among Argentina, Brasil, Chile and Colombia. In the OneGeology initiative, Argentina and Chile technicians and scientists are collaborating together on web mapping and digital mapping techniques.

In the same way, the technical dialogue among countries is also promoted by local international initiatives, most of them developed under the auspices of the Ibero-American Association of Geological Surveys (ASGMI). The Geological Map of South America at 1:1M, multinational projects on map harmonization and others projects like the Map of Patagonia at 1:1M (Argentina-Chile) are examples of ongoing projects. All of these improvements are creating, little by little, the conditions for the development of a consolidated regional group.

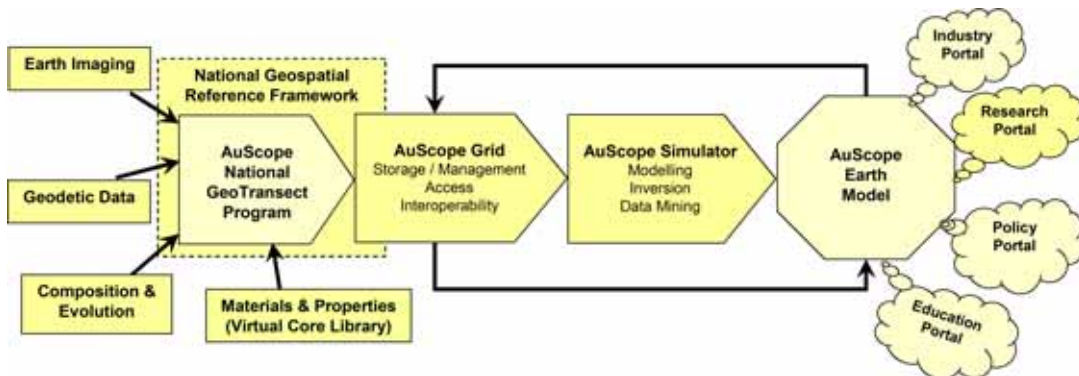


## Oceania

Through the Australasian Government Geologists Information Committee (GGIC) and AuScope, Australia has actively participated in the CGI Interoperability Working Group activities to produce the geological map information model, GeoSciML. The GGIC has extended GeoSciML into the mineral occurrences domain and is currently working on extending it to the geochronology and geochemistry domains.

The Australian AuScope initiative aims to establish a research infrastructure to map the structure and evolution of the Australian continent. The development of computers and the increasing capacity of those computers has had a fundamental impact on how scientific research is undertaken in Australian earth sciences. Computation has now joined theory and experiment as a third mode of scientific enquiry, whilst exponential changes in transistor capacity, storage density and network performance are rapidly changing the face of earth sciences. Access and interoperability are crucial components for this research that is increasingly done through distributed global collaborations across the Internet. AuScope Grid aims to provide the connective fabric and enabling technologies that will allow a dynamic community of practice to operate within this global framework.

The CGI development and testing of the geoscience information models has identified a gap between the models and the supporting technologies. A key component of the AuScope Grid program aims to close this gap by developing the required Web Feature Service software and supporting information modelling tools.



# CGI Business

## Meetings

The CGI Council Annual Meeting was held at the 33 IGC in Oslo, Norway in August 2008. The minutes and actions of the meeting can be found on the CGI web site. Several Council members also met opportunistically at a number of events throughout the year: for example, at the meeting of the Geoscience Information Consortium in May in Helsinki, and at the EC GI conference in Maribor, Slovenia in June.

## Web site and communications

The CGI web site plays a prominent part in CGI's communication: it is updated by the CGI Secretariat (our continuing thanks to Kathryn Bull of BGS). In addition to containing all the documentation about the Commission, it has news about related projects, events and web resources and it provides space for technical information posting and exchange. In 2008 the CGI web site received over 9500 visitor sessions and 92800 hits.

In 2008 we reviewed the CGI web site and plan to update it and make significant changes to its format in the new year.

## Membership

CGI now has 226 members in 62 countries across the world.

The CGI has members in the following countries:-





## Finance and budget

CGI receives funding from the IUGS but no direct regular financial support from other bodies. It does however receive considerable indirect support in terms of staff-time and meetings and infrastructure facilities from the parent organisations of its Council members and organisations such as CGMW.

The detailed planned CGI budget and spending details for 2009 will be dominated by expenditure on the Outreach Workshop but will also include spend on the maintenance of the CGI web site and GeoSciML.

**In addition to \$5000 to run the basic CGI operation, CGI would wish to bid to IUGS for an additional sum of money in 2009. CGI would like to submit a second bid of \$5000 to support its work on GeoSciML. This will include costs associated with documenting the model and standard and preparing information for its dissemination and acceptance.**

The CGI Accounts are presented opposite. These show that the financial situation of CGI at the end of 2008 is positive; as noted above this results from a longstanding CGI Council decision to create sufficient budget reserve to organise the Outreach Workshop in Namibia in 2009.

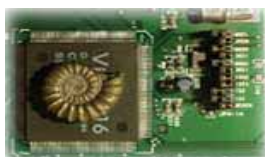
CGI Account 2007				
	\$ account		€ account	
	in	out	in	out
<b>october 2002 cickoff "new" CGI</b>	<b>2,172.81</b>		<b>1,113.59</b>	
2002 allocation IUGS (3000\$)	3,000.00			
2001/2002 grant ICSU (5000\$)	5,000.00			
Council meetings				-10.00
new web site		-2,512.32		
CGI bank account costs		-0.60		
<b>balance 2002</b>	<b>7,659.89</b>		<b>1,103.59</b>	
<b>2003</b>				
2003 allocation IUGS (5000\$)			4,104.75	
Council meetings				-826.27
MT workinggroup				-426.00
CGI bank account costs				-25.00
<b>Balance 2003</b>	<b>7,659.89</b>		<b>3,931.07</b>	
<b>2004</b>				
2004 allocation IUGS (5000\$)			4165.28	
debudgetting unclaimed expenses 2003			426.00	
Council meetings				-138.00
CGI Flyer				-696.00
MT Workinggroup				-426.00
Firenze prep. & participation				-294.60
Website				-2006.05
CGI bank costs				-20.00
<b>Balance 2004</b>	<b>7,659.89</b>		<b>4,941.70</b>	
<b>2005</b>				
domain name CGI website (28.2€)				-43.00
2005 allocation IUGS (5000\$)	5000.00			
council meetings				-286.30
Cost CGI bank account 2005				-20.00
<b>Balance 2005</b>	<b>12,659.89</b>		<b>4,592.40</b>	
<b>2006</b>				
IUGS Grant outreach workshop (10000\$)	10,000.00			
UNESCO Grant outreach workshop leaflet (5000\$) contract 4500027900	5,000.00			
2006 IUGS allocation (5000\$)	5,000.00			
Refund Datamodel workshop Perth dec 2004		-367.68		-27.83
Maputo outreach workshop		-2941.23		-3510.85
Printing and Shipping leaflet		-4690.00		-2390.49
internal transfer \$ => €		-5000.00	3857.73	
<b>Balance 2006</b>	<b>19,660.98</b>		<b>2,520.96</b>	
<b>2007</b>				
cost CGI bank account 2006				-20.00
2007 IUGS Grant allocation	7500.00			
Cost domain name CGI website (24.99€)				-41.79
cost CGI bank account 2007				-30.00
<b>Balance on 20/12 2007</b>	<b>27,160.98</b>		<b>2,429.17</b>	
<b>2008*</b>				
2008 IUGS allocation				
cost CGI bank account 2008		-38.30		-30.00
<b>Balance on 06/11/2008</b>	<b>27,122.68</b>		<b>2399.17</b>	

\* Due to recent change of Treasurer unable to check details as bank account being transferred

## Acknowledgements

We would like to record our thanks to all members of CGI and its working groups and secretariat, and to members of the IUGS Executive for their help and encouragement.

CGI Council  
November 2008



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