



CGI ANNUAL REPORT 2014



Contents

1. Overall objectives, mission and aims
2. Role within IUGS science policy
3. Organisation, Council Members and Officers
4. Extent of national/regional/global support from sources other than IUGS
5. Interaction with other international projects
6. CGI Online Presence
7. Chief accomplishments and products
8. Main problems encountered
9. Summary of expenditure
10. Work plan for next year
11. Critical milestones
12. Anticipated results to be achieved next year
13. Budget for 2014 and potential funding sources
14. Review chief accomplishments over last five years (2010-2014)
15. Objectives and work plan for next 5 years (2015-2019, as modified in Beijing)
16. Suggestions for improvement of IUGS activities, especially in reference to activities of IUGS bodies
17. Contacts – CGI Council members

1. Overall objectives, mission and aims

An understanding of geology is crucial in protecting human life, health and assets, and sustaining our environment and resources. As in many areas of life today, information technology (IT) is having a dramatic impact on the way geological data and knowledge is being captured, processed and disseminated. The effective application of IT is the key to the future exploitation of geological knowledge for the benefit of society.

CGI aims to:

1. Provide the means for transferring knowledge on geoscience information and systems.
2. Stimulate international dissemination of best practice in geoscience information.
3. Stimulate and support initiatives which are developing standards.
4. Establish and occupy an accepted position in the international geoscience information community and represent IUGS on geoscience information matters.

2. Role within IUGS science policy

The CGI fills the role of the geoscience information body of the IUGS. It represents IUGS on geoscience information matters, provides the means for transferring knowledge on geosciences information and systems, assists international dissemination of best practice in geosciences information, stimulates and supports initiatives which are developing standards and its Council members hold several significant positions within the international geosciences information community.

3. Organisation, Council members and Officers

Council Officers 2012-2016

The current CGI Council members are:

- François Robida (Chair) – France
- Kristine Asch (Secretary General) - Germany
- Robert Tomas (Treasurer) - Czech Republic
- Gabriel Asato – Argentina
- Peter Baumann – Germany
- Michael Frame – USA
- Zhang Minghua – China
- Kombadayedu K. Mhopjeni – Namibia
- Santiago José Muñoz Tapia - Dominican Republic
- Kazuhiro Miyazaki – Japan
- David Percy – USA
- Oliver Raymond – Australia

Ex-officio CGI Council representative: Gemma Nash (BGS, UK)), CGI media administrator

The current CGI secretariat is located at the Federal Institute for Geosciences and Natural Resources, Germany (BGR). The contact is cgisecretariat@bgr.de.

Council web presence

The CGI Council, along with BGS, provided the necessary updates to the Council web presence. More improvements are still in process. The intent of the redesign is to improve overall find-ability of information, to better highlight CGI activities, to emphasize CGI support emerging standards, and to provide an area to showcase CGI sponsored Working Groups. <http://www.cgi-iugs.org>

Since December 2013 our new CGI LinkedIn group exists. The group provides a forum for CGI and LinkedIn members to connect with other geoscience professionals, to post news of upcoming events, to ask questions and to discuss CGI related issues.

<http://www.linkedin.com/groups?gid=6539642>

Membership

CGI now has 282 members in 68 countries across the world.



News

CGI Council member Peter Baumann, Professor of Computer Science at Jacobs University, has been honoured with the Kenneth D. Gardels Award 2014 by the Open Geospatial Consortium (OGC). The OGC Board of Directors awarded the prize to Peter Baumann in recognition of his “significant contribution to the OGC's essential role and mission in the global Information Technology community”.

For further information please visit: <http://jacobs-university.de/2014/09/jacobs-university-professor-peter-baumann-honored-kenneth-d-gardels-award>.



CGI Council member Peter Baumann (picture with kind permission by Peter Baumann)

CGI member Dr Xiaogang Ma was presented with the WDS Stewardship Award for 2013 and 2014 at the SciDataCon 2014 Conference held in New Delhi this year. The WDS Data Stewardship Award highlights exceptional contributions to the improvement of scientific data stewardship by early career researchers through their engagement with the community, academic achievements, and innovations.

For further information please visit: <https://www.icsu-wds.org/news/news-archive/wds-stewardship-award-201320132014>.



CGI member Xiaogang (Marshall) Ma (picture with kind permission by Xiaogang (Marshall) Ma)

CGI member Ian Jackson formerly British Geological Survey received the Outstanding Contributions in Geoinformatics Award 2014. The award is made to an individual who has contributed in an outstanding manner to geology through the application of the principles of Geoinformatics.

For further information please visit: <http://www.geosociety.org/awards/divisions.htm>.



CGI member Ian Jackson (picture with kind permission by Ian Jackson)

4. Extent of national/regional/global support from sources other than IUGS

Other than the substantial in-kind contribution of the geological organisations that pay the salaries and expenses of CGI Council and members, the CGI does not receive additional support. Sometimes CGI workshops are co-organised by other organisations such as the UNESCO, the German Federal Ministry for Economic Cooperation and Development (BMZ), The Geological Survey of Namibia, Australian Aid, SEGEMAR or SEAMIC who have been contributing to the events.

5. Interaction with other international projects

A major partnership with OGC has been finalised in 2012 with the signature of a MoU with OGC (OpenGeospatial Consortium) to jointly work on the development of Geoscience Markup Language (GeoSciML).

The CGI, in collaboration with OGC, is continuing to develop GeoSciML. Both, the linked global OneGeology project and the past European EC project OneGeology-Europe are using GeoSciML to make geological data interoperable and accessible via their web portals. The EC Directive INSPIRE and its implementing rules were published in December 2013 (see 6.8 Europe) – the geology theme related data specifications are based on the GeoSciML data model and use large parts of the CGI vocabulary.

ERML (Earth ResourceML) is also a major development of the CGI, and adopted by major EU funded projects as Mineral4EU or Eurare.

6. CGI Online Presence

CGI Website – www.cgi-iugs.com

The CGI website underwent a major facelift in 2014. Following major redesign work in late 2013 and early 2014, the new website was published in June 2014. Many thanks are due to Gemma Nash (BGS and CGI web editor) for the work she put into formatting the new content and making the new website mobile device friendly. A considerable amount of old and out-of-date content was removed from the website and archived, and website navigation was simplified. Website content continues to be coordinated by Ollie Raymond.

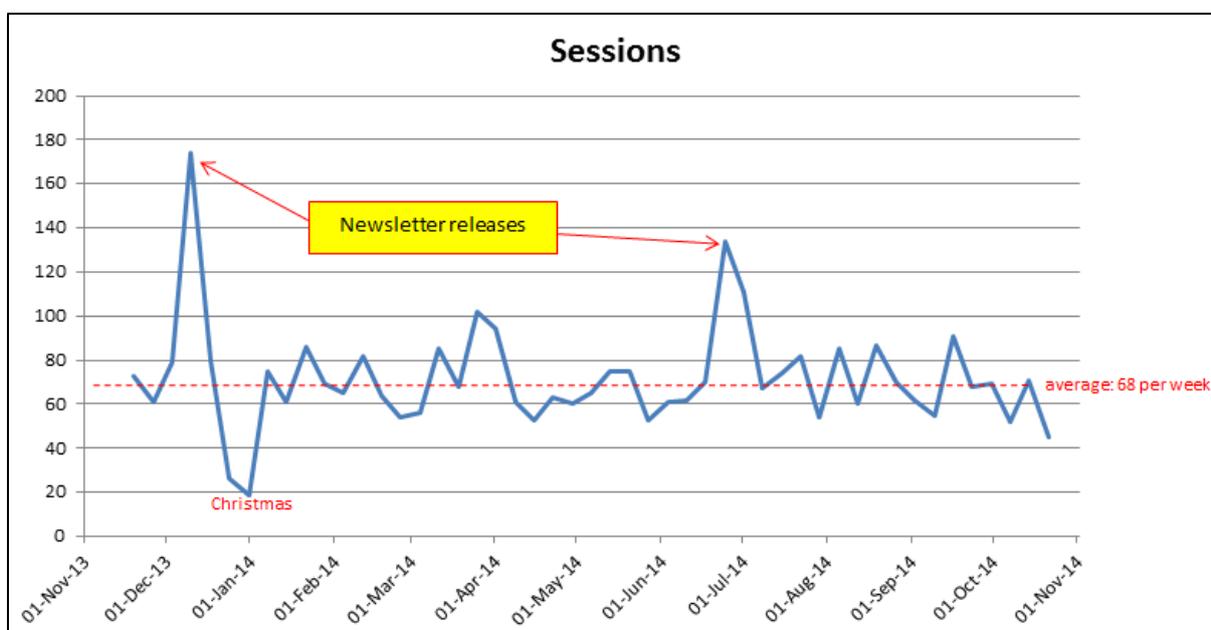


CGI web page.

Google Analytics was installed on the CGI website in November 2013, providing us with a wealth of information about the number of visits and the behaviour of people visiting the website. Comparisons of website performance will be available for future years through these statistics. Detailed website statistics for 2014 are provided in the attached Appendix. Some of the detailed page statistics are skewed due to the website reorganisation in June 2014 which resulted in the removal or renaming of some pages, but the overall statistics is valid.

Some key statistics

- over 3500 visits to the CGI website in the past 12 months
- an average of 68 visitors per week
- visitors opened an average of 2.5 pages per session
- 26% of sessions were return visitors
- over one third of all website visitors came from USA, Germany, and Australia
- 93% of sessions were from desktop devices, so mobile platforms are still only a small emerging market for the CGI website



CGI web page – sessions per week.

Of some concern is that

- the average visitor stayed on the website for less than 2 minutes
- two-thirds of visitors only opened only the first page they visited, and then left (“bounces”)

The Home page is by far the most popular page and point of entry to the website, so we must be sure that it contains our most critical information, displayed prominently. One third of all traffic to the website comes from Google, so we must also be very conscious of making our web pages Google-search-engine friendly.

Outside of the home page, the most popular content on the website is GeoSciML, followed by the newsletters, and the Geoscience Terminology Working Group. There is also a significant amount of traffic (10%) directed to the CGI website from the www.geosciml.org website which is managed by the GeoSciML SWG.

CGI Newsletter

The first two issues of the new CGI Newsletter (<http://www.cgi-iugs.org/newsletters/>) were published in December 2013 and June 2014. The newsletters are provided in pdf format and as HTML web pages. The two HTML newsletters have received 156 and 186 unique web visits each. It would be good to publish three newsletters a year to better maintain the momentum of member engagement.

CGI LinkedIn group

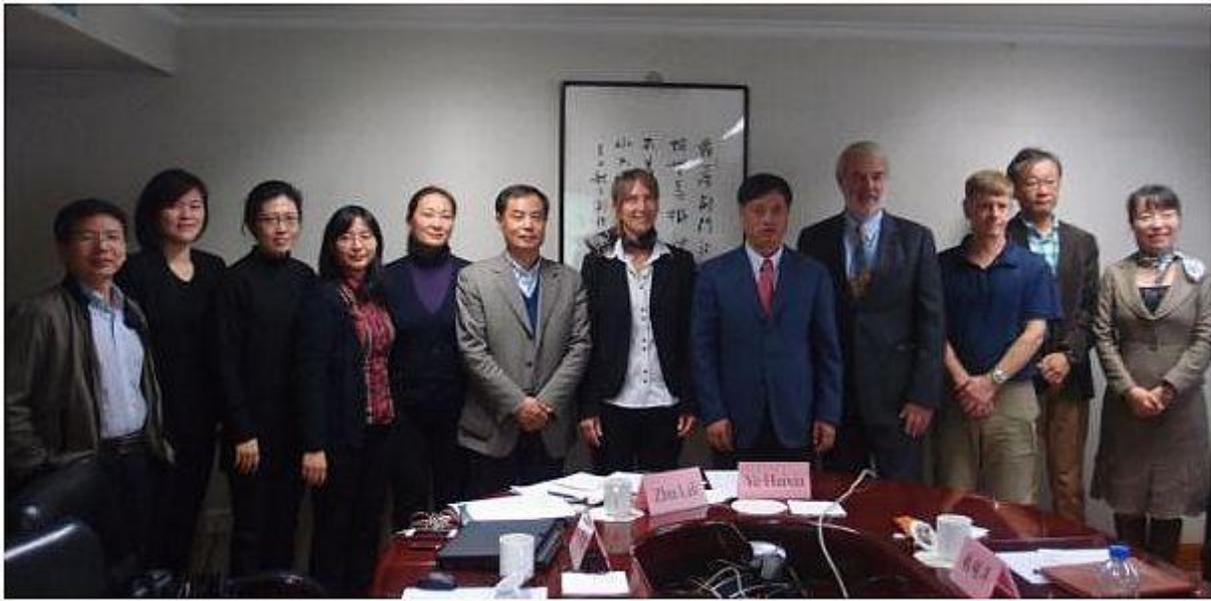
The CGI LinkedIn group was created in October 2014 and has attracted 39 members. There have only been a handful of posts to the group, mainly notifications of publication of the newsletters, conferences, and the CGI 3D ad-hoc group. Some of the LinkedIn group members are not actual CGI members, so the LinkedIn group serves as another avenue for CGI to promote its message. Non-CGI-members in the LinkedIn group have been directed to the CGI membership web page, but it is hard to force them to join.

CGI Working Group websites

The GeoSciML, EarthResourceML and GeoScience Terminology working groups all maintain web pages and services. For further information, see their 2014 annual reports.

7. Chief accomplishments and products

7.1 CGI Council Meeting



CGI Council Meeting in Beijing, China 2014.

The annual meeting of the CGI Council took place from 28th to 29th October in Beijing and was kindly hosted by the Development and Research Center of the China Geological Survey and organised by the new CGI Council member Zhang Minghua. It was opened by the Chief Geoscientist of the Development and Research Centre of China Geological Survey, Dr. Tan Yongjie. The Council met for two days and covered numerous issues; the following considered of significant importance:

- Reconstruction of the CGI website
- Organisation of the budget administration
- Regional and Working Group reports
- Participation of CGI at FOSS4G-Europe 2014
- GIRAF workshop in Maputo, Mozambique in 2015 and its funding
- Organisation of a Geoinformation Super-Symposium at the International Geological Congress 2016 (IGC) in South Africa.

7.1 GeoSciML Standards Working Group



Meetings

GeoSciML SWG members attended three teleconferences and one face-to-face meeting in 2014:

- teleconference, hosted by Steve Richard at the quarterly OGC Technical meeting in Washington DC, 24 March
- teleconference, hosted by Ollie Raymond (Geoscience Australia), 13 May
- face-to-face meeting, hosted by Steve Richard (Arizona Geological Survey) at Tucson, Arizona - 29 June – 3 July
- teleconference, hosted by Tim Duffy (BGS, 23 September), was held between INSPIRE and CGI members to clarify relations between INSPIRE and GeoSciML data models

Data Model Development and Documentation

Revision of the GeoSciML conceptual model

Only very minor revision of the GeoSciML version 3 conceptual model has occurred to address change requests from INSPIRE and other users.

Repackaging of the GeoSciML model

Considerable repackaging of the GeoSciML model has been undertaken to turn the conceptually-based GeoSciML version 3 model into a more user-friendly implementation model for version 4. The current and relatively complex GeoSciML version 3 data standard is not the easiest model to implement for providers of relatively simple geological data. So the repackaging effort involves creation of three separate GeoSciML schema levels that will allow data services to be more easily delivered and consumed for common use cases ranging from very simple to very complex:

- GeoSciML-Portrayal – for simplest delivery of geological maps and boreholes (e.g., WMS, shapefile)
- GeoSciML-Basic – for slightly more complex delivery of geological map data which supports intelligent querying of age and lithology properties for the most common geological feature types, satisfies all INSPIRE use cases
- GeoSciML-Extension, Boreholes, LaboratoryAnalysis-Specimens, GeologicTimescale – extended schemas for delivery of rich and complex geological data

OGC Documentation

Progress has been made in documenting requirements and conformance classes for the GeoSciML v4 data model. This work is in preparation for the compilation of the OGC Specification document required for recognition as an OGC standard. Progress has been slower than had been hoped (see *Issues*).



Attendees at the Tucson face-to-face meeting of the GeoSciML, EarthResourceML and Geoscience Terminology working groups.

GeoSciML website - www.geosciml.org, schemas.geosciml.org

The GeoSciML resources website continues to be hosted *gratis* by CSIRO in Perth, Australia. The website contains all of the published XML schemas and data model documentation for GeoSciML and GeoSciML-Portrayal. The website content is managed remotely by Ollie Raymond (in Canberra) with no input from CSIRO staff resources. New website content was minimal in 2014, and was limited to providing links to user guides for GeoSciML data providers that were published by the USGIN and INSPIRE communities.

Uptake of GeoSciML

It is pleasing to note that there has been wide uptake of the GeoSciML data standard (particularly GeoSciML-Portrayal) in national and provincial Geological Surveys, mainly through its adoption by data sharing communities such as OneGeology, INSPIRE, USGIN and AuScope. Implementation of GeoSciML version 3 in these production services has resulted in good feedback to the GeoSciML SWG on ways to improve its usability for the version 4 revision.

Issues

SWG Membership

The slow progress of GeoSciML v4 outside of the SWG meetings is of concern. Ollie Raymond noted at Tucson that the time that he and Steve Richard (the co-Chairs and main drivers of the SWG) were able to devote to GeoSciML development is small compared to previous years due to commitments to their employers. Ollie tendered his resignation as SWG Chair at Tucson, but was unable to find a replacement, so he continues in a caretaker role, unable to drive the work forward with any real vigour. A recent offer of help from Eric Boisvert (GSC) may alleviate this situation somewhat, but there remains the problem that the GeoSciML

development team is getting older and smaller without the addition of new and active participants.

GeoSciML and INSPIRE

There was some concern during the year about the use (or not) of GeoSciML by the INSPIRE Directive. Significant work has been done by the SWG to ensure that GeoSciML covers all INSPIRE use cases. The non-use of GeoSciML by European data providers would be a major setback for CGI's aim to promote GeoSciML as a globally recognised data standard. This issue has hopefully now been addressed by a plan to develop procedures that will enable European data providers to provide both GeoSciML and INSPIRE web services with minimal duplication of effort. CGI Council needs to make all possible efforts to ensure that this plan is implemented in INSPIRE through ongoing communication with INSPIRE management.

7.2 Geoscience Terminology Working Group

Membership

The Geoscience Terminology Working Group (GTWG) has a current membership of 22 from Australia, Canada, China, Denmark, Finland, France, Germany, Great Britain, Italy, New Zealand, Russia, Slovenia, Sweden and USA. Membership is defined through a Google Group with membership rights administered by Steve Richard (AZGS, USA). No changes to membership occurred in the last year.

Meetings

The GTWG convened a face-to-face meeting in Tucson, USA in July 2014 hosted by Steve Richard and the Arizona Geological Survey. The meeting was held in conjunction with meetings of the GeoSciML Standards Working Group (SWG), the EarthResourceML Working Group (WG) and the OneGeology Technical Implementation Group (TIG). Steve Richard stood down from the chair role of GTWG and Mark Rattenbury (GNS, New Zealand) was elected in his place.

The 2015 GTWG face-to-face meeting venue and timing is not yet decided but historically has occurred with the GeoSciML SWG, ERML WG and OneGeology TIG meetings. The OneGeology TIG is likely to synchronise with the INSPIRE meeting in Lisbon, Portugal 25-29 May 2015.

Operation

The GTWG functions through face-to-face meetings (usually annually), email and through a shared document facility hosted on Google Drive. A vocabulary adoption procedure has been established that involves identifying a geoscience vocabulary and nominating a shepherd to guide the process of its adoption. The shepherd collates a draft vocabulary, calls for and manages input from the membership and their expert colleagues in a review process and ultimately calls for a vote for the vocabulary's adoption. Google Drive spreadsheets are used and various input by different people through the process is recorded through new columns, rows and worksheets in the spreadsheet.

Once adopted the vocabularies are converted into RDF format and moved into the SiSSVoc vocabulary service hosted by CSIRO, Australia (see Issues below).



The CGI working groups met in Tucson, Arizona in late June-early July including for the 2nd GTWG face-to-face meeting. From left to right are John Laxton (UK), Steve Richard (USA), Carlo Cipolloni (Italy), Eric Boisvert (Canada) and Jouni Vuollo (Finland).

Work achievements

The GTWG has had a busy year. Eighteen vocabularies required for the EarthResourceML have been collated, debated, reviewed and adopted. Jouni Vuollo (GTK, Finland) led much of activity, in part driven by the Minerals4EU project timetable that requires these vocabularies for the European implementation of mineral occurrence and mining data models.

Work planned

The next year will see more work on remaining ERML data model vocabularies and some of the outstanding GeoSciML data model vocabularies. Review of some existing adopted vocabularies is expected.

Issues

GTWG activities require input from its members and over the last year less than half of the membership has contributed anything substantial to GTWG activities. The concern is that international standards in geoscience terminology are being decided by too few people and that they are unlikely represent the diversity of thinking around the world. The workaround is to adopt vocabularies with the input received but accept that these vocabularies can and should be revisited and improved at a later date.

The hosting of the CGI vocabulary service is under review. Until now CSIRO, Australia have been providing the service through their SiSSVoc hosting facility and have given technical support for service implementation. CSIRO no longer have resources available to sustain the CGI vocabulary service and the service will need to be relocated to another agency.

Geoscience Australia may be able to take over this role but its long term resourcing for this cannot be guaranteed either according to Ollie Raymond (GA, Australia).

7.3 EarthResourceML (ERML) Standards Working Group

Membership

The EarthResourceML Working Group (ERML WG) has eight members (2013-2014):

- Jouni Vuollo
 - Bruce Simons
 - Daniel Cassard
 - John Laxton
 - Michael Sexton
 - Anders Hallberg -> Helge Reginiussen
 - Soren Haubrock -> Mark Rattenbury
 - Greg Fernette
- GTK – Finland (Chair)
 - Csiro – Australia (Consultant)
 - BRGM – France
 - BGS – Great Britain
 - GA – Australia
 - SGU – Sweden (change 11/2013)
 - GNS – New Zealand (change 06/2014)
 - USGS – USA (join 12/2013)

Meetings

ERML SWG members attended one face-to-face meeting in Tucson, USA in July 2014 hosted by Steve Richard and the Arizona Geological Survey. The meeting was held in conjunction with meetings of the GeoSciML Standards Working Group (SWG), the Geoscience Terminology Working Group (GTWG) and the OneGeology Technical Implementation Group (TIG).



Session of the face-to-face meeting in St. Petersburg, Russia.

Data Model Development and Documentation

The ERML conceptual model

The current release of the ERML v2 was published in October 2013. See <http://www.earthresourceml.org/>. This ERML model will now be trialled in projects such as Minerals4EU project (26 European Union Geological Surveys - 09/2015), as well as being used in the implementation of the INSPIRE Mineral Resources data specification. Any further versions of EarthResourceML will await feedback from use of EarthResourceML v2.

Documentation

All the CGI SWG web pages have been harmonised (09/2014) and the ERML web pages (http://www.cgi-iugs.org/tech_collaboration/earthResourceML.html) have been updated. The data model documentation has been published in the ERML web pages.

Uptake of EarthResourceML

It is pleasing to note that there has been wide uptake of the ERML data standard in national and provincial Geological Surveys (Australia - Europe), mainly through its adoption by data sharing communities such as AuScope, INSPIRE/Minerals4EU and EGDI. The major Challenge in the short term is to get USGS/USA and GCS/Canada to join as active participants to develop/implement the ERML standard. Attempts to get the "Circum Arctic Ore Deposit" project (Nordic countries – Russia/VSEGEI – USGS/Alaska – CGS – Iceland) to use the ERML standard have so far been unsuccessful!

Issues

Work planned

Future development of EarthResourceML, and a simple-feature variant of EarthResourceML to support simple portrayal requirements (e.g., WMS), will be undertaken by the EarthResourceML Working Group after the feedback from use of EarthResourceML v2 like Minerals4EU project.

The next year will see more work on remaining ERML data model vocabularies (MineralDepositGroup, MineralDepositType, Product and WasteType). Much more activity from the whole GTWG is really needed to review/vote/adopt shepherd's proposals! We share the same concerns as the GTWG, which was mentioned in the report so "*The concern is that international standards in geoscience terminology are being decided by too few people and that they are unlikely represent the diversity of thinking around the world.*"

ERML and INSPIRE

At the St. Petersburg F2F meeting (2013), it was agreed that a few changes are needed to the ERML 2.0 model, which became INSPIRE requirements. These changes are now inside the current ERML model and the INSPIRE and the ERML models are identical to facilitate the broad adoption globally. These changes also help European data providers to offer both ERML and INSPIRE web services with minimal duplication of effort.

7.4 Asia

OneGeology-Asia

The Geological Survey of Japan (GSJ) is still actively participating and promoting the OneGeology-Global project in the East and Southeast Asia region through the OneGeology-CCOP project. The current activities related to the project in the region include the ASEAN WebGIS training series and the 1:1 million seamless geological mapping project. Myanmar, Thailand, Vietnam, Laos and Cambodia are presently working on the harmonisation of their 1:1 million geological maps' legends. OneGeology-Asia also made onegeology-asia.org as the new official domain name for the regions Web Map Services (WMS) and portal. For this year, the geological map of Myanmar is the new addition to the list of WMSs registered to the OneGeology-lobal portal. Cambodia is the latest country that signifies interest in joining the OneGeology project. The Web Map Service of the 1:1 million geological map of Cambodia was just formulated in preparation for their registration to the OneGeology-Global portal. Most of WMSs of the geological maps of the countries in East and Southeast Asia are hosted by GSJ servers. These are the MWSs of the geological maps of Indonesia, Malaysia, Vietnam, Myanmar, Philippines and Papua New Guinea. The map of Cambodia will be included in the list late this year. The WMSs of Laos, Thailand and South Korea are hosted by these countries' servers.



ASEAN WebGIS and Mineral Database Information System Training Series. Researchers from Geological Survey of Japan (GSJ), Department of Mineral Resources (DMR, Thailand) and Department of Geology and Minerals (DGM, Laos) discuss 1:1 million seamless (harmonized) geological map of Southeast Asia. 08-14/June 2014, Vientiane, Laos.

Asia-Pacific Region Global Earthquake and Volcanic Eruption Risk Management (G-EVER)

The Asia-Pacific Region Global Earthquake and Volcanic Eruption Risk Management (G-EVER) is a consortium among the geohazard research institutes in the Asia-Pacific region. It was established in 2012 with the objective of formulating strategies to reduce the risks caused by the occurrence of earthquakes, tsunamis and volcanic eruptions worldwide. G-EVER just launched two web based information system that are very useful for the reduction of risks caused by earthquakes, tsunamis and volcanic eruptions.

These are the Earthquake and Volcano Hazard Information System (<http://ccop-geoinfo.org/G-EVER/index.php>) and the Volcanic Hazard Assessment System (<http://volcano.g-ever1.org/vhazard/HazardAssessment/index.php>). The two applications provide users information needed in assessing the risks about volcanic eruptions and earthquake occurrence. They also provide a spatial data analysis platform which is needed in mapping and identifying areas that would be affected by the occurrence of the aforementioned geological hazards.

ASEAN Mineral Database Training

Japan International Cooperation Agency (JICA) and Geological Survey of Japan (GSJ) implemented the ASEAN WebGIS and Mineral Database Information System Training Series. The trainings are intended for the countries comprising the Association of Southeast Asian Nations (ASEAN). JICA financed the project while GSJ provides the experts and lecturers. The project started on April 28, 2014 with the training in Manila, Philippines. The last part of the training series was held in Nay Pyi Taw, Myanmar on July 7, 2014. A Follow up training series was also implemented in different Southeast Asian countries (Cambodia, Laos, Vietnam, Myanmar and Thailand). It was started on August 25, 2014 in Phnom Penh, Cambodia and culminated in Bangkok, Thailand on September 22, 2014. The training mainly focused on the development of the ASEAN Mineral Information System using Free and Open Source Software (FOSS) and Open Geospatial Consortium (OGC) Standards. It includes web based database creation, database population, querying the database using Sequential Query Language (SQL) and the formulation of Web Map Services (WMS) and WMS clients. The trainings are mostly attended by the staffs of the geological and mineral resources agencies.

China's activities in geoinformation

China Geological Survey has carried out OneGeology-China project in 2013 after attending remotely the St. Petersburg meeting in June, and released its English version 1:1 million geological map on GeoSciML v3.1 in WMS via the OneGeology portal in May2014. The Chinese version of this 1:1 million geological map will also released by the end of 2014.

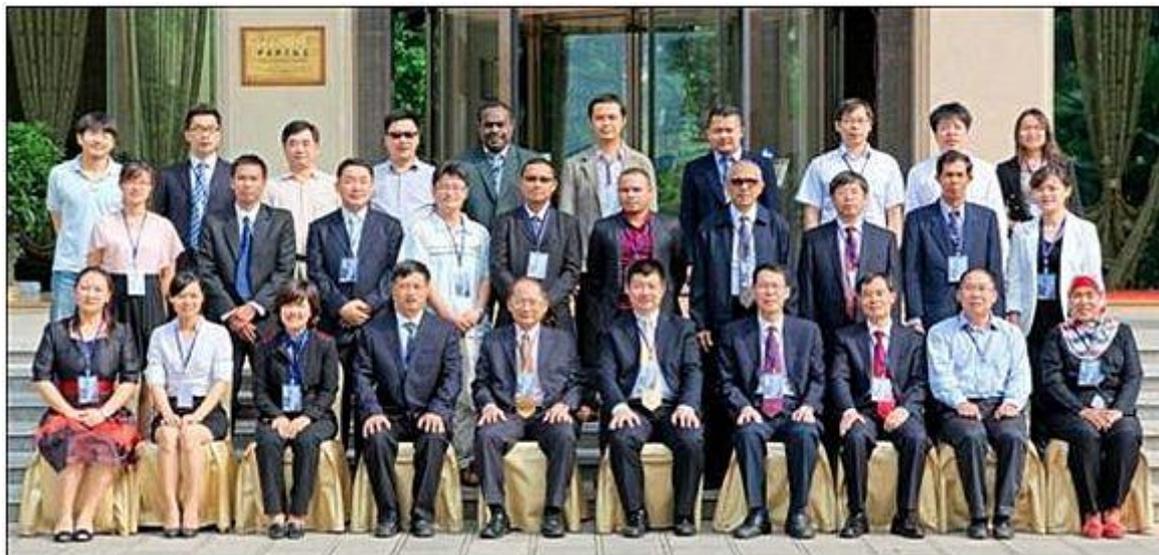


China Geological Survey has also conducted studies on open 3D geological data exchange model and geo-bigdata technology. A primary standard named Geo3DML covering geological map, cross section and borehole will soon be issued, and a test of geo-bigdata platform is undergoing.

CCOP-CGS IGDP Project

Two workshops and a software training course of the China Geological Survey funded project named CCOP-CGS Capability Enhancing on Integrated Geophysical and Geochemical

Data Processing (IGDP) had successfully been held in June 2013 and August 2014 in Kunming, China. 74 professionals from 13 CCOP and ASEAN countries, including Cambodia, China, Indonesia, Japan, South Korea, Laos, Malaysia, Myanmar, Papua New Guinea, Philippines, Thailand, Timor-Leste, Vietnam, and from North Korea, Pakistan, Peru and Sri Lanka had participated.



Participants of the CCOP-CGS Capability Enhancing on Integrated Geophysical and Geochemical Data Processing (IGDP) workshop and software training course in June 2013, Kunming, China.



Training course photos taken at the 1st CCOP-CGS IGDP workshop and software training in June 2013, Kunming, China.



Participants of the CCOP-CGS Capability Enhancing on Integrated Geophysical and Geochemical Data Processing (IGDP) workshop and software training course in August 2014, Kunming, China.



Training course photos taken at the 2nd CCOP-CGS IGDP workshop and software training in August 2014, Kunming, China.

CCOP-CGS Geochemical Mapping Project

The CCOP/ASEAN Geochemical Mapping Project supported by the CGS has finalised the sampling guidelines in November 2013 after the revision through orientation surveys conducted in typical geographic landscape terrains by CCOP member countries. The sampling guidelines of geochemical mapping are suitable for diverse geomorphic landscape

terrains of Asia from arid desert regions in central Asia to tropical rainforest zones of Southeast Asia and South Asia. A training course was given for participants in the project. Sampling will soon be conducted as planned in some countries in 2013.



Workshop2013 on CCOP/ASEAN Geochemical Mapping

7.5 South/Latin America

The CGI activities in South America are focused on the development of outreach activities to encourage the development of geoinformation, promote the adoption of CGI standards and create awareness about the rule of information technologies in GS activities at decision levels.

Training courses

Training courses are a common and main activity in South America, unfortunately this year we had no chance to organise a new one. But after the OneGeology meeting in Brazil, the Dominican Republic asked OneGeology to have an outreach activity. An initial proposal is on the introduction of map web services by Gabriel Asato and GeoSciML Potrayal by Steven Richards.

Workshops

OneGeology Consortium organised a technical meeting in Rio de Janeiro, Brasil hosted by the Geological Survey of Brasil (CPRM). Most of the geological surveys of Latin America participated (Argentina, Dominican Republic, Chile, Peru, etc.).

From OneGeology Consortium attended Marko Komac (Managing Director), Tim Duffy (BGS) and Steven Richards (Arizona, GS). There were presentations on data availability in South America by Gabriel Asato (SEGEMAR), Umberto Cordanni (CPRM), Carlos Schobbenhaus (CGMW), Santiago Muñoz Tapia (ASGMI), etc. The meeting was a success and we had an

agreement to improve the South America presence in the consortium. Brazil already signed the agreement for being a principal member. We give our thanks to the Geological Survey of Brazil and OneGeology Consortium for the efforts made organising this event.



From left to right: Gabriel Asato, Dr. Ruben Matheos Undersecretary, Dr. Alejandro Cecatto Secretary of Joint Science Technological, Ministry of Science, Technology and Production Innovation.

Regional update

CGMW and the Geological Survey of Colombia organised a Geological Map of South America Workshop in Villa de Leyva, on July 21-26 with a strong participation of Geological Surveys of South America. The main topics of discussion were on the development of national geological maps, the participation of CGMW in the region during the last 50 years, the tectonic map, and the criteria for the development of 1:1 M and 1:5 M geological maps of South America.

OneGeology and Latin America

It must be noted that in South America there is still confusion about the aims of OneGeology and CGMW. Some people are having trouble understanding the dynamics by viewing the organizations as competitors, rather than partners with a common interest. Further confusion is caused by the wrong translation and understanding of the word “harmonisation”, put in some talks and messages. Some people understand that this word means “thematic geological harmonisation” as a subject of CGMW, instead of “harmonisation of geoscience information systems”. This caused some people to conclude that there is a superposition of OneGeology aims over CGMW.. Thus, it is advisable to explain to South America the purpose of OneGeology as an “information tool” and also the meaning of the semantic interoperability concept tied to GeoSciML.

Meeting at the Ministry of Science and Technology of Argentina

Argentina recently enacted ministerial decisions about the development of national science digital repositories. In that way an interview was solicited from the Joint Science Technological Secretariat. During the meeting the rules and aims of CGI-IUGS were

presented to secretary Dr. Alejandro Ceccatto. Dr. Ceccatto was very pleased to know of CGI-IUGS activities and told Gabriel Asato that geoscience digital information are close to the project of national repositories.

Main products

There are no new products for this year.

Main problems encountered in 2014

Despite the participation of SEGEMAR in the OneGeology meeting held in Brighton, and the support given by the IUGS and ASGMI in different occasions, the OneGeology map service in Argentina was shutdown. This situation is in fact a difficult reality because SEGEMAR was the first Latin America Geological Survey who published geoscience information in OneGeology. At present it seems that it will be very difficult to be online again in short time.



Look on the beginning of OneGeology.

7.6 Africa

GIRAF

Since its foundation in 2009, the GIRAF network is regularly present at each Colloquium of African Geology (CAG) with a workshop or a session. Also in 2014, during the CAG 25 and the 3rd YES network Congress in Dar es Salaam, Tanzania, a GIRAF workshop was organised by Kristine Asch. It was opened by the IUGS president Prof. Roland Oberhänsli and supported by GSAf president Aberra Mogessie. Convened by Kristine Asch (CGI, BGR), Mesfin Gebremichael (SEAMIC), Terence Ngole (Geological Survey of Tansania) and Salvatore Mondlane Junior (Eduardo Mondlane University, Maputo) the session encompassed seven presentations and additional contributions on geoscience information projects and initiatives in Africa, the African Mining Vision, the role of GIRAF at universities etc., followed by intense discussions and the start of the preparation for the next GIRAF workshop in Maputo in 2015.



Salvatore Mondlane Junior, host of the GIRAF workshop 2015, in Maputo, Mocambique, and Kristine Asch, GIRAF coordinator.

The event was concluded successfully and visited by 49 participants, mostly from Africa, and 20 new members joined GIRAF network. During the final CAG 25 assembly the GIRAF network was kindly mentioned by one of the main organisers, Nelson Boniface, in his concluding remarks as a positive and driving factor for geoscience information issues in Africa.



CAG 25 – GIRAF workshop in Dar es Salaam, Tanzania.

In addition a new GIRAF newsletter was published in August 2014 (http://www.giraf-network.org/GIRAF2009/EN/Media/Issue3_GIRAF_Newsletter_en.html) and the GIRAF web site has been updated by BGR, in particular with promoting the 14 national African national GIRAF embassies and ambassadors (see figure next page).

Future Plans

- GIRAF

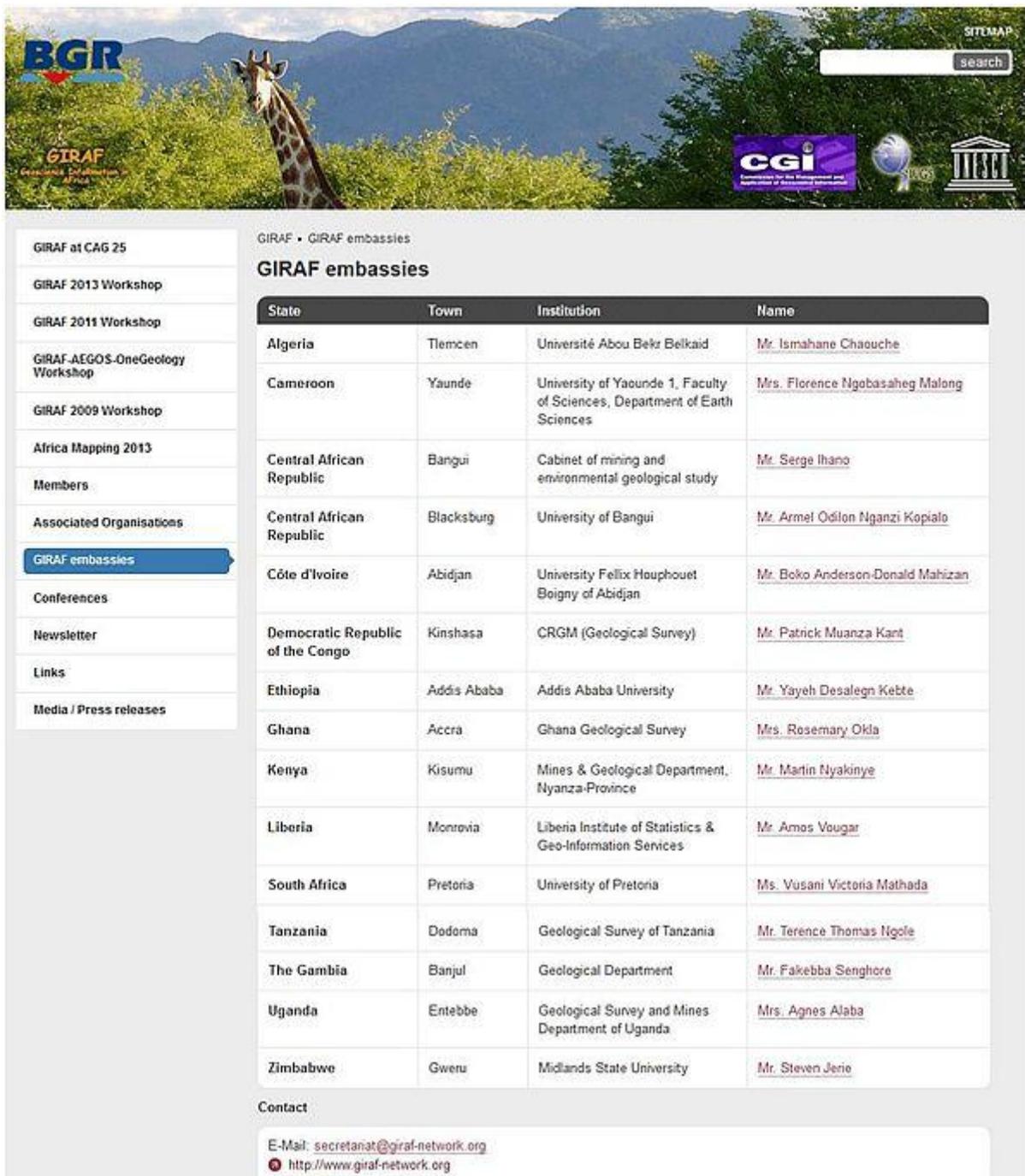
Increase involvement of Kombada Mhopjeni in GIRAF, which is a major item for the Africa working group. Start preparations for the GIRAF segment in 35th IGC in Cape Town, in 2016.

- Hackathon

Apart from coordinating the GIRAF network (chair: John Duodu, Ghana, coordinator Kristine Asch) the Africa regional group is preparing the organisation of a Hackathon which may take place at the next GIRAF workshop in Maputo, Mozambique.

- CGI in Africa

Identify additional ways to more actively promote CGI in the region.



The screenshot shows the GIRAF website interface. At the top, there is a banner image of a giraffe in a savanna landscape. The banner includes the BGR logo, the GIRAF logo, the CGI logo, and the IUGS logo. A search bar is visible in the top right corner. Below the banner, there is a navigation menu on the left with options like 'GIRAF at CAG 25', 'GIRAF 2013 Workshop', 'GIRAF 2011 Workshop', 'GIRAF AEGOS-OneGeology Workshop', 'GIRAF 2009 Workshop', 'Africa Mapping 2013', 'Members', 'Associated Organisations', 'GIRAF embassies' (highlighted), 'Conferences', 'Newsletter', 'Links', and 'Media / Press releases'. The main content area is titled 'GIRAF • GIRAF embassies' and 'GIRAF embassies'. It contains a table with the following data:

State	Town	Institution	Name
Algeria	Tlemcen	Université Abou Belkaid Belkaid	Mr. Ismahane Chaouche
Cameroon	Yaunde	University of Yaounde 1, Faculty of Sciences, Department of Earth Sciences	Mrs. Florence Ngobasaheg Malong
Central African Republic	Bangui	Cabinet of mining and environmental geological study	Mr. Serge Ihano
Central African Republic	Blacksburg	University of Bangui	Mr. Arnel Odilon Nganzi Kapialo
Côte d'Ivoire	Abidjan	University Felix Houphouet Boigny of Abidjan	Mr. Boko Anderson-Donald Mahizan
Democratic Republic of the Congo	Kinshasa	CRGM (Geological Survey)	Mr. Patrick Muanza Kant
Ethiopia	Addis Ababa	Addis Ababa University	Mr. Yayeh Desalegn Ketbe
Ghana	Accra	Ghana Geological Survey	Mrs. Rosemary Okla
Kenya	Kisumu	Mines & Geological Department, Nyanza-Province	Mr. Martin Nyakinye
Liberia	Monrovia	Liberia Institute of Statistics & Geo-Information Services	Mr. Amos Vougar
South Africa	Pretoria	University of Pretoria	Ms. Vusani Victoria Mathada
Tanzania	Dodoma	Geological Survey of Tanzania	Mr. Terence Thomas Ngole
The Gambia	Banjul	Geological Department	Mr. Fakebba Senghore
Uganda	Entebbe	Geological Survey and Mines Department of Uganda	Mrs. Agnes Alaba
Zimbabwe	Gweru	Midlands State University	Mr. Steven Jerie

Below the table, there is a 'Contact' section with the following information:

E-Mail: secretanat@giraf-network.org
<http://www.giraf-network.org>

http://www.giraf-network.org/GIRAF2009/EN/GIRAF_embassies/GIRAF_embassies_node_en.html.

7.7 Oceania

Australia and New Zealand continue to be major players on the CGI and global geoscience data standards stage. Ollie Raymond (Geoscience Australia) is currently interim chair of the GeoSciML Standards Working Group, as well as a member of the CGI Geoscience Terminology and EarthResourceML communities. Mark Rattenbury (GNS New Zealand) was elected as chair of the CGI Geoscience Terminology Working Group in July 2014 and is also a member of the GeoSciML SWG. Other Oceania representatives on CGI working groups include Bruce Simons and Simon Cox (CSIRO), Alistair Ritchie (Landcare NZ), and Michael Sexton (Geoscience Australia).



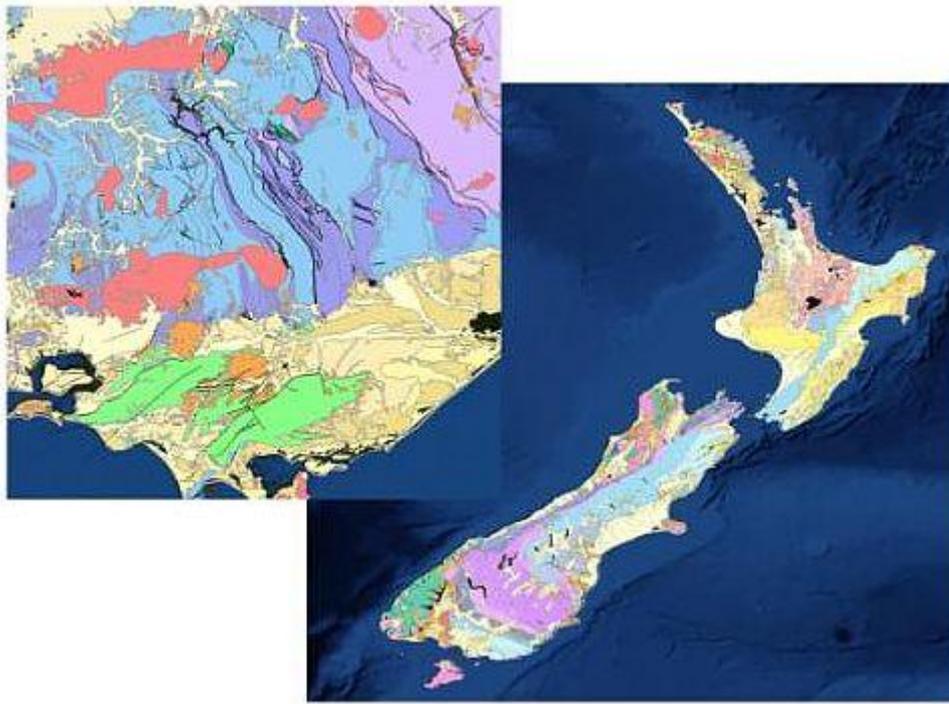
Australia/NZ Government Geoscience Information Committee (GGIC)

Coordination of information management best practice in the Oceania region is overseen by GGIC, which comprises representatives of all state, territory, and federal Geological Survey agencies in Australia and New Zealand (NZ). GGIC meets biennially. Ollie Raymond is funded by GGIC to represent Oceania on CGI Council. Recent GGIC work includes:

- coordination of Australia/NZ input into the CGI Geoscience Terminology Working Group. GGIC is probably the most active global contributor to review of CGI vocabularies
- increased use of OGC web services in all geological surveys, including
 - mineral exploration tenement web services from several jurisdictions based on the GGIC web service standard - MineralTenementML
 - Geoscience Australia now publishes over 100 geological, topographic, environmental, and marine web services with more in development
 - update of Geoscience Australia's and New Zealand's 1:1 M scale OneGeology web services to incorporate most recent national scale geological mapping
- design of a new web portal for Australian geoscientific information and services, company reporting standards, and promotional information, to be called the Australian Geoscience Information Network (AusGIN).

Open vs Proprietary Formats

GGIC has noted the considerable influence of Google and its associated data formats in 3D data. Google KML and the Google Earth API are largely competing with OGC's W*S data standards and open source API's. Both State and Federal Australian governments have been courted by Google for providing 3D data portals. Google provide a glossy "shiny object" Google Earth-based visualisation tool which is attractive to executives, but requires use of Google's data formats and investment in expensive licencing. The Queensland government chose the Google solution – Queensland Globe. After evaluation of the Google solution at the federal government level, it was decided to use the free, open source, OGC-friendly, Cesium 3D portal software to build a new whole-of-federal-government spatial data portal – National map beta site.



The new Australian and NZ OneGeology national geological map services in the OneGeology Portal.

It should be noted that while OGC web services are slowly gaining wider acceptance for interoperable data delivery, proprietary data delivery formats still have a strong embedded base within government spatial data providers and will not be disappearing from the data delivery scene any time soon.

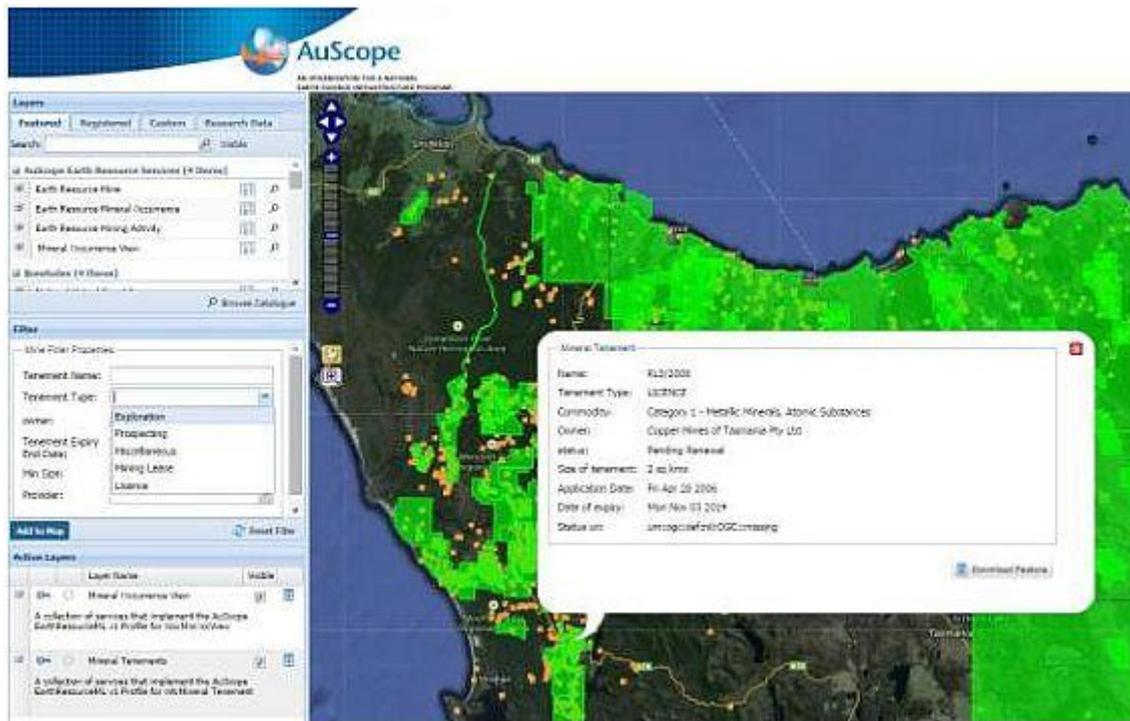
Geological agencies in Australia and New Zealand are embracing GeoSciML and O&M as conceptual database models. Both Geoscience Australia and GNS New Zealand have built new borehole databases in 2014 which are GeoSciML- or GeoSciML-Portrayal compliant. Geological map databases at both agencies have also been upgraded to conform to GeoSciML data structures. Geoscience Australia's new rock properties database is also O&M- and GeoSciML-compliant.

International GeoSample Number (IGSN)

After amendment of the IGSN membership charter to resolve legal barriers, CSIRO and Geoscience Australia have both become members of the IGSN consortium in 2014. They will endeavour to implement IGSN sample identification in all Australian geoscience agencies in 2015.

AuScope

Since 2007, the "AuScope" program has been the major Australian federal government funding initiative to support collaborative geoscience research in Australia. AuScope funding has recently been extended to at least 2018. AuScope has funded the building of interoperability infrastructure in Australian geological surveys and universities, resulting in many geoscientific web services being established – notably mineral occurrences, boreholes, geological maps and mineral exploration tenements.



Example of mineral occurrence and mineral exploration tenement data delivered using MineralOccurrenceML and MineralTenementML in the AuScope Portal.

A major aim of the AuScope program is to embed technical advances developed in the AuScope program as “business as usual” practice in government geological surveys and universities. To this end, the AuScope Portal website which was built by the AuScope development team at CSIRO in Perth to provide an advanced interface for display and analysis of geoscientific web services, is being moved to Geoscience Australia. Geoscience Australia will maintain the Portal on behalf of GGIC as a permanent Australian web portal for discovery, display, and analysis of geoscientific web services as part of the new AusGIN website.

Future AuScope work will most probably focus more on developing distributed computational capability, and providing infrastructure for analysis and modelling of distributed web services, geophysical data and 3D data. The Virtual Geophysical Laboratory is one example of the direction that AuScope is heading.

Geoscience Australia and CSIRO

The two major Australian federal government geoscience agencies have both been hit with major funding and staff reductions in 2014. CSIRO, who have previously provided the majority of the advanced technical input to the AuScope program, and who host critical websites and web services on behalf of CGI, have had particularly harsh staff reductions and reprioritisation of their work program. This has affected CSIRO’s ability to continue its “in kind” support of CGI projects, particularly the CGI vocabulary service. Ollie Raymond is currently negotiating with Geoscience Australia management to take over hosting and management of the vocabulary service on behalf of CGI. CSIRO staff Bruce Simons and Simon Cox, previously important contributors to CGI Council and Working Groups, are now working mainly in soil and water data standards, including the recent publishing of the latest version of OGC’s WaterML standard.

7.8 Europe



The two major activities related to the geoscience data & information interoperability and provision are taking place in Europe. The first is the implementation of the requirements of INSPIRE legal framework (<http://inspire.ec.europa.eu/>) in the EU Member States, which is right on its way following the legal deadlines for the provision of harmonised datasets via the INSPIRE/OGC network services. In case of geology / earth resources related data, the deadlines are 2015 for new datasets or heavily restructured datasets and by 2020 for currently used datasets. The second activity, strongly linked to the first, is the strategic plan of the EuroGeoSurveys to build the European Geological Data Infrastructure (EGDI) that was developed in the framework of the EU FP7 project: EGDI Scope (<http://www.egdi-scope.eu/>). In both activities the participation of the European members of the IUGS-CGI (both Thematic Working Groups) has been very noticeable e.g. 11 registered experts in the official EC Register of INSPIRE experts for maintenance and implementation of INSPIRE.

All infrastructures, and INSPIRE is no exception, require maintenance and evolution if they want to remain relevant to their goals and stakeholders. The experience gained during the development of the Technical Guidelines (e.g. for data specifications) as well as lessons learned by implementing the infrastructure, especially from thematic domains, need to be shared to optimise performance of the infrastructure to meet policy objectives and to increase its usability within thematic domains. The European Geoscience Community (CGI) via the EuroGeoSurveys Spatial Information Expert Group was selected to facilitate an on-line collaboration platform of the thematic cluster dealing with the Earth science related INSPIRE data themes (geology, mineral and energy resources, soil, natural risk zones). This platform is a single entry point for implementers and users to share experience and best practice, raise questions and resolve issues.

Maybe the biggest collaboration between the INSPIRE and IUGS-CGI Technical WGs (Geoscience Terminology Working Group (GTWG) as well as the Interoperability Working Group (IWG) experts took place in the framework of the EU FP7 Project Minerals4EU that is to set up a knowledge base system on European Raw materials (primary and secondary). Within this project a complete alignment of the used terminology (majority based on the EarthResourceML v2.0) as well as the data model (also based on EarthResourceML v2.0) was carried out. In both cases the evolution of the results followed the same pattern:

- 1) IUGS-CGI (GeoSciML, EarthResourceML) data exchange models / work as a starting base to be used for 2) INSPIRE Data specifications on Geology and Mineral Resources themes that also lead to 3) the update of the IUGS-CGI (GeoSciML v3.2, EarthResourceML v2.0).

Especially the semantic interoperability / harmonisation work (achieved in the field of mineral resources is very significant leading to the currently 18 globally agreed code lists (<http://resource.geosciml.org/static/vocabulary/earthresourceml/2014/>), of which 14 are already in the EU INSPIRE Registry (<http://inspire.ec.europa.eu/registry/>) describing in a harmonised way mineral resources domain.

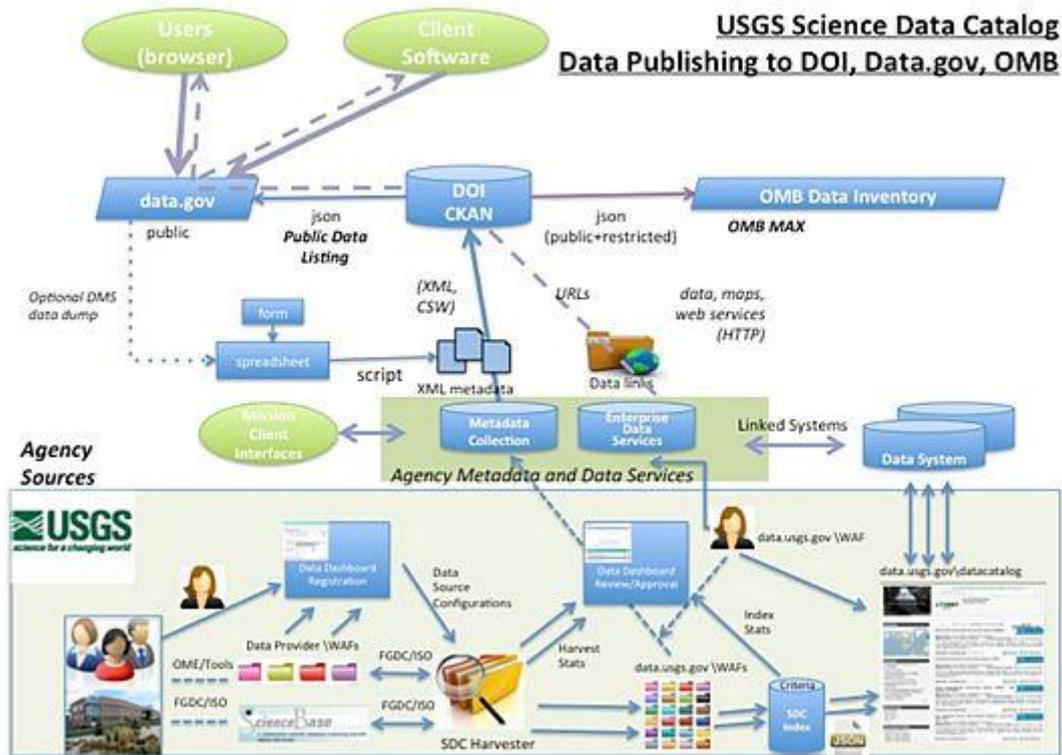
7.9 North America

Executive Summary

The United States Geological Survey (USGS, Portland State University (PSU), and the Arizona Geological Survey have a number of significant accomplishments this past year. Details are provided below.

US Government Open Data

On May 9, 2013, the White House released the Executive Order, "Making Open and Machine Readable the New Default for Government." This Order built upon an earlier interagency memorandum released by the Office of Science and Technology Policy (OSTP) and was accompanied by an Office of Management and Budget (OMB) Policy and a site hosted on GitHub, Project Open Data, to guide implementation. To meet the requirements outlined in these initiatives, USGS released a Science Data Catalog (SDC, <http://data.usgs.gov/datacatalog>) in support of the development of a comprehensive openly accessible catalog of data produced from USGS research. The USGS SDC currently provides access to over 4.500 resources, all required to have linkages back to source data, visualisation tools, and/or data distribution systems. Equally important to the establishment of an integrated search and discovery system, is USGS efforts to improve the overall workflow between the USGS, Department of Interior and Data.gov to aid in the seamless processing and management of science metadata throughout the United States. Significant activities have occurred with all organisations involved to address such challenges as duplicate records, provenance of metadata, authoritative source for publishing metadata, and improved discovery through these various systems. The workflow diagram below provides an overview of this process and the associated systems involved.

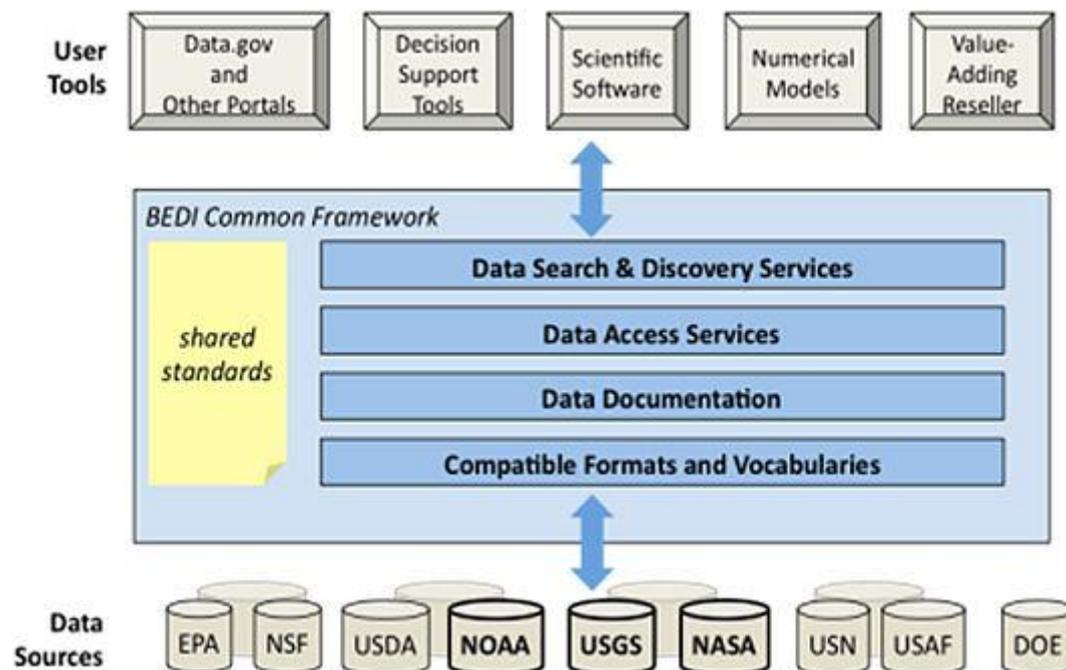


USGS - Science Data Catalog (SDC) – workflow diagram.

Additionally, USGS policies for data release, metadata, and data preservation were all revised and pending release will be in December of 2014. These policies will further implement data management activities within the USGS and improve overall data accessibility of USGS research results.

Big Earth Data Initiative -

The overarching goal of the Big Earth Data Initiative (BEDI) is to improve the ways Federal Earth system data are collected, managed, and delivered. It is one of the implementation mechanisms to meet the May 9, 2013 Executive Order, *"Making Open and Machine Readable the Default for Government Information."* The USGS, along with NASA and NOAA within the United States are continuing to work on improving data discoverability, use of data, comprehensive treatments (i.e. sufficient metadata) of critical earth observing systems data in support of the BEDI effort. The figure below shows the evolving BEDI architecture and approach being taken by the groups involved.

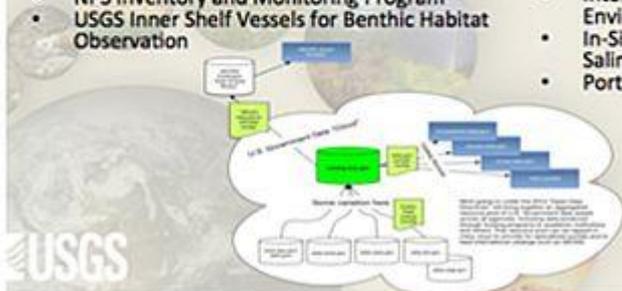


Big Earth Data Initiative (BEDI) architecture.

The BEDI effort and progress related to the Cataloging of Earth Observing system has made considerable progress this past year. As of October 2014, approximately 30 of the major earth observing systems in the United States have been cataloged and represented in agency catalogs and available systems. These include:

28+ of 60 EOA1 DOI (owned or contributed to) observing systems are currently represented in agency catalogs; some are indirect records and many require improvements

- Landsat satellite
- USGS Stream Gauge Network
- USGS Gap Analysis Program
- Global Biodiversity Information Facility
- Advanced National Seismic System
- USGS National Groundwater Database
- BLM/NGO Ecoregional Planning Projects
- USGS Geomagnetic Observatories
- USGS Water Quality Samples
- USGS In Situ Water Quality Sensors
- FWS Inventory and Monitoring Program
- Breeding Bird Surveys
- NPS Inventory and Monitoring Program
- USGS Inner Shelf Vessels for Benthic Habitat Observation
- USGS Oceanographic time series data
- NPS Gaseous Pollutant Monitoring Network
- USGS Tide Gauges
- Biomonitoring of Environmental Status and Trends
- Geophysical Field Surveys
- GPS Networks for Earthquake Detection
- Topography LIDAR
- USGS Borehole Geophysical Logging
- USGS Mobile Water Sensors
- Airborne LIDAR
- National Atmospheric Deposition Program
- Interagency Monitoring of Protected Visual Environments
- In-Situ Oceanographic Temperature and Salinity Profiles
- Portable Water Gauges



Cataloging status of EOA systems.

Geoinformatics Academic Curriculum

PSU developed a Geoinformatics course in 2012, and delivered an updated version in 2013. The class uses cloud computing infrastructure donated by Amazon Web Services (AWS) and open source software mainly endorsed by OSGeo. The class project has been to stand up syntactically, semantically, and ontologically compliant portrayal versions of GeoSciML for the state of Oregon, where the university is located. The 2014 version of the class ventured into the online world, increased attendance in the class and honed its structure. The class was renamed from “Geoinformatics” to “Spatial Informatics” to better convey the subject matter. David Percy also joined his university, PSU, to the worldwide GeoForAll coalition, which is an initiative to get open source, open standards, and open data into the hands of more students who study GIS. The Spatial Informatics class will be useful in this developing curriculum and GeoSciML will continue to be at the core of this class.

8. Main problems encountered

The World’s economic crisis is having strong impact on monetary support for regional activities of the CGI, e.g. in South America by usually supportive countries such as Spain.

The Geoscience Informatics discipline is still not fully recognised as part of Geological Sciences. Trips and travel expenses are often only available to executives in organisations. It

is often difficult to get support from government organisations for travel to CGI-related meetings and events.

There are difficulties in cross-border communication and low budgets for meeting organisation, making it difficult to maintain the group cohesion and stay informed on the problems and issues that each of the regions are struggling with (e.g. South American, African or Asian countries).

In this context, outreach activities must often be organised synergetically, based on any opportunities given, rather than merely on medium term planning.

Another difficult issue is that the IUGS is dependent on the IUGS commissions' willingness to open private accounts in order to administer IUGS finances. Due to governmental issues, the transfer of the CGI finances from the former CGI treasurer to the new one could still not be accomplished. This matter was discussed by the new IUGS treasurer - Prof. Dong Shuwen and the CGI treasurer Robert Tomas, but was not solved. It would be excellent, if a way could be found to open IUGS-CGI accounts not as a private person in order to establish a transparent process of the use of IUGS resources to support CGI activities.

9. Summary of expenditure

	\$ account		€ account	
	in	out	in	out
October 2002 kickoff "new" CGI	2 172.81		1 113.59	
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		
balance 2002	7 659.89		1 103.59	
2003				
2003 allocation IUGS (5000\$)			4 104.75	
Council meetings				-826.27
MT workinggroup				-426.00
CGI bank account costs				-25.00
Balance 2003	7 659.89		3 931.07	
2004				
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
Balance 2004	7 659.89		4 941.70	
2005				
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
Balance 2005	12659.89		4 592.40	
2006				
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	
Balance 2006	19660.98		2 520.96	
2007				
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
Balance 2007	27160.98		2 429.17	
2008				
Travel expenses preparation Giraf Schutte				-240.00
cost CGI bank account 2008				-30.00
cost transfer accounts Fortis--> LCL				-43.26
Balance 2008	27160.98		2 115.91	
2009				
ACCOUNTS TRANSFERED				
Travel expenses Broome CODATA		-1139.69		
Repro banner Giraf				-216.91
2009 IUGS allocation	15 000.00			
cost transfer IUGS --> CGI		-23.01		
Travel expenses S. Richard - MLT St Petersburg		-2808.85		
transfer charges		-24.60		

	\$ account	€ account
2010		
Payment maintenance of CGI web site (NERC/BGS)	-2300.00	
2010 IUGS allocation	7 500.00	
transfer charges	-23.17	
transfer charges	-21.16	
2011		
2011 IUGS allocation	10000.00	
transfer charges	-23.54	
Payment maintenance of CGI web site (NERC/BGS) 1549.87£		-1779.01
transfer charges		-30.00
transfer charges		-22.00
transfer account USD --> €	-1900.00	1377.81
transfer account USD --> €	-19000.00	13777.10
transfer charges		-25.90
Payment to BGR - GIRAF workshop		-13783.00
transfer account USD --> €	-8900	6610.71
transfer charges		-22
Payment to BGS (update cookbooks, schematron rules)		-6600
Transfer charges		-3,90
Balance December 2011	23 496.96	1 398.81
Balance 2011	23.496,96	1.398,81
2012		
<i>Bank account charge</i>		-5,96
<i>CCOP hosted CGI meeting</i>	--12.000,00	
transfer charges	-21,75	
<i>IWG developments</i>	-6.580,00	
transfer charges	-21,64	
<i>2012 IUGS allocation</i>	10.000,00	
transfer charges	-21,59	
Payment from CCOP	858,43	
transfer charges	-20,15	
transfer account USD --> €	-715	546,34
transfer charges		-22
<i>CSIRO hosting CGI-IWG websites</i>		-550,00
transfer charges		-16,5
Balance November 2012	14.975,26	1.350,69
Back payment from BGR (balance from Giraf 2011) December 2012		4.967,79
Balance 2012	14.976,26	6.318,48
2013		
<i>transfer charges</i>		-3,98
<i>Payment to BGR – Giraf workshop 2013</i>		-5.000,00
<i>Subscription Visa card</i>		-39,96
Balance 2013	14.976,26	1.274,54
2014		
<i>transfer account USD -> €</i>		-47,07
<i>Payment to BGS for CGI website (2479.04 £)</i>	-4160	
<i>2014 IUGS allocation</i>	7.967,00	
transfer charges	-23,38	
bank charges		-2,69
Balance October 25th 2014	18.758,88	1.224,78

- No solution has been found so far for the transfer of the CGI accounts, kept as private ones by the former treasurer (F. Robida) to the new CGI Treasurer (R. Tomas). Therefore, the provisional solution was found and agreed that the accounts are still operated by the former CGI treasurer on behalf of the new one (including the formal control checking). A solution has been and will be sought with the support of IUGS Secretariat.
- The transfer of the IUGS allocation for 2013 has not been done.

10. Work plan for next year

- Continue the development of GeoSciML and Earth ResourceML. Start the work on GeoSciML Basic.
- Update the CGI website
- Publish the CGI newsletter
- Publish more publications of CGI related issues within IUGS “Episodes”.
- Preparation and finding of financing for the GIRAF workshop 2015 in Mozambique.
- Preparation of IGC2016

11. Critical milestones

The signature of a MoU with the OGC was accomplished in spring 2014.

Preparation of and acquiring funding for the GIRAF workshop 2015 in Mozambique.

Organisation of a Geoinformation Super-Symposium at the International Geological Congress 2016 (IGC) in South Africa.

Start to organise the work on 3D geological data exchange model.

Start and enhance the application of IGS standards by collaboration in geoscientific map compilation.

12. Anticipated results to be achieved next year

See section 10. “Work plan for next year”.

13. Budget for 2014 and potential funding sources

CGI Council expects a similar budget to that provided by IUGS in previous years.

14. Review chief accomplishments over last five years (2010-2014)

CGI developed an Action Plan in 2008 which is set out in section 1 of this report. Evidence indicates that, despite issues of resources and travel constraints, CGI through its Working Groups, members and associated initiatives, has been extremely successful. The Commission has: catalysed alliances, vide OneGeology (1G), OneGeology-Europe (1G-E), GIC, ICSU, IAMG, INSPIRE, GGIPAC, AUSCOPE, ICS, CGMW, EGS, OGC, USGIS; stimulated progress and standard geological concepts, vide CDTG, MTG and the 1G-E multilingual vocabulary; promoted the use of data exchange standards, vide IWG, 1G, 1G-E; facilitated outreach, vide the GIRAF (2009, 2011, 2013), South American, European and Asian workshops and OneGeology; and played a full role in the coordination of and participation in regional initiatives. This includes several INSPIRE Working Groups (the Drafting Teams Data Specification and Metadata, the Thematic Working Groups Geology and Mineral Resources), EuroGeoSurveys (within the Spatial Information Expert Group) , OneGeology-Europe, CCOP, South American initiatives, and the GIRAF network.

15. Objectives and work plan for the next 5 years (2014-2019, as modified in Beijing)

- Catalyze productive alliances between geo-information bodies, including OGC;
- Stimulate progress in development and application of standard geoscience concepts and their representation in multiple languages.
- Promote international use of data exchange standards (specially broad adoption of GeoSciML and EarthResourceML); Facilitate outreach, knowledge transfer and take-up of best practice in geo-information (e.g. with the South America initiative, the Asia initiative and GIRAF, the African geoinformation network).
- Create a task force to evaluate the feasibility of developing interoperability of 3D - 4D geosciences data models
- Enhance collaboration with other IUGS commissions, e.g. ICS.
- Play a role in coordination of regional initiatives, e.g. by organizing workshop and training courses on geoscience information management, standards and language.
- Adoption of GeoSciML as an OGC Standard
- Preparation and finding of financing for the GIRAF workshop 2015 in Mozambique.
- Organise a Geoinformation Super-Symposium at the IGC 2016 in South Africa.

16. Suggestions for improvement of IUGS activities, especially in reference to activities of IUGS bodies

Understandably, given the remit of our Commission, we would urge the IUGS Executive to give greater prominence in terms of discussion time, publication space and funding, to the area of geoscience information, its interoperability and especially digital standards. In a world which is increasingly data and IT driven and dependent, it is imperative that the IUGS takes a lead in pushing forward digital advances and ensuring consistency of approach in

geoscience data content and applications. Without this, holistic solutions to transnational geological challenges will be that much more difficult to deliver. We believe there is a need for geoscience information expertise to be present at the highest level in IUGS, ie a member of the Executive; if necessary by co-option.

In conclusion

We would like to express our thanks to all members of the CGI and its regional and thematic working groups, and also to the members of the IUGS Executive for their help and encouragement. We look forward to continued productive cooperation in 2015.

CGI Council

30. November 2014

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