



**INSIDE THIS ISSUE:**

- OneGeology at IGC 35 South Africa 2
- Regional Updates 3
- Regional Updates continued 3
- Regional updates concluded Technical Update 4
- Other News Board Current Membership Useful Links 5

## Introduction

Dear OneGeology Members,

First of all, it was with great sadness that we learned of the death of our colleague and friend, Lee Allison in August 2016. Lee, Director of the Arizona Geological Survey, was the Board representative for North America and died in a tragic accident at home in Arizona. Lee had been a strong supporter and contributor to OneGeology for many years and his passing will be keenly felt across a wide area of geoscience. At the International Geological Congress meeting in Cape Town at the end of August his colleagues remembered Lee's life and enormous contribution to our community.

It has been a packed few months since our last Newsletter. We had several workshops and events at the International Geological Congress (IGC) in Cape Town August 28th -September 2nd including a hands-on workshop focusing on Africa, a OneGeology Africa Workshop mainly aimed at centre directors, a Principal Members meeting, a OneGeology Board Meeting and 2 OneGeology paper presentations.

IGC was also the first opportunity to discuss the new part to OneGeology- OneGeology Research. This concept, developed by the Board, was sent around members and interested parties in February 2016 by OneGeology Chair, Chris Pigram. The first item in what will hopefully become a portfolio of research projects is 3D. There will be a short article about the 3D project later in this newsletter.

We would like to thank all of our Principal Members for your support in 2016:Swisstopo, Coordinating Committee for Geoscience Programmes in East and Southeast Asia (CCOP), CPRM - Geological Survey of Brazil, Environmental Systems Research Institute, Inc. (Esri), FGBU VSEGEI- Russia, GEM Foundation, Geological Survey of Belgium, Geological Survey Of Ireland, Geological Survey of Japan, Geological Survey Of Slovenia, Geological Survey of Sweden, Geoscience Australia, Korea Institute of Geoscience and Mineral Resources, Polish Geological Institute, Service Geologique du Luxembourg, United States Geological Survey, Geological Survey of Canada, Geological Survey of Spain, Geological Survey of Portugal, Council For Geoscience- South Africa, TNO—Netherlands and The International Union of Geological Sciences (IUGS), The British Geological Survey (BGS) and Bureau de Recherches Géologiques et Minières (BRGM)

We are really pleased that you have chosen to support Global Geoscience Data Interoperability.

## OneGeology Research Portfolio

Chris Pigram's letter to all members in February 2016 identified the potential for a consortium approach to address common 3D challenges faced by geological surveys and similar organisations. 3D is a natural domain for geoscience, it is slowly becoming resolved at a national level but this could be parochial with a lack of regional interoperability. There is some further progress to report in this newsletter.

A global group headed by Laurent Ailleres at Monash University in Australia responded to this growing requirement with a proposal for an

"Implicit 3D plus Time GeoStructural Simulator -i3DGS". This proposal was sent to members who had expressed an interest and an initial meeting held during IGC35 in Cape Town in September 2016. This has resulted in a revised proposal and some more materials to share more widely amongst the OneGeology membership.

If you would like further information because you think your organisation would like to join this consortium please contact [onegeology@bgs.ac.uk](mailto:onegeology@bgs.ac.uk) who will put you in touch with Laurent and team.

There will be further discussions about the relationship between this consortium activity and OneGeology at the OneGeology Board meeting in Poland in March and the outcome will be reported in a future newsletter.

Please find links to the 3D [brochure](#) and [video](#) on the OneGeology website.

### OneGeology to Celebrate 10 years of Global Data Interoperability in 2017

OneGeology will celebrate 10 years of Global Data interoperability in 2017. We intend to mark this occasion with a series of events which will be discussed at the next Board meeting in March. We will circulate news of these once decided but please keep an eye on the [OneGeology Website](#) for updates.



## OneGeology at IGC 35 South Africa

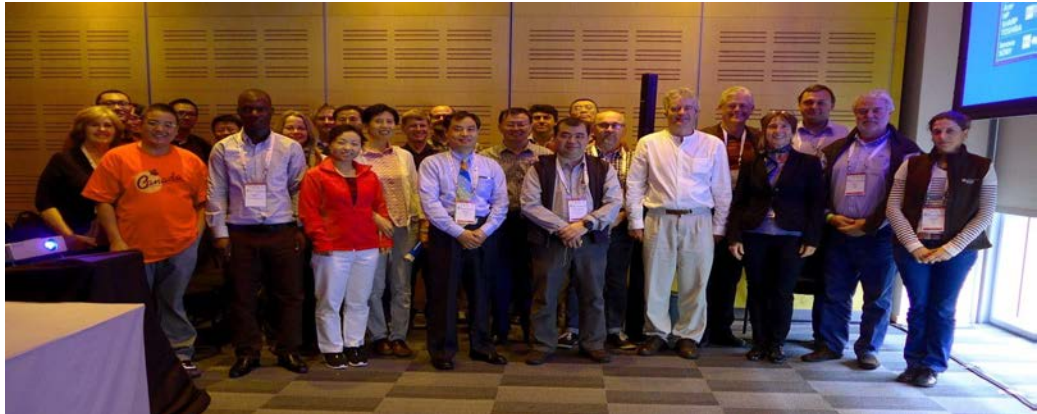
OneGeology Africa day was held on 1st and 2nd September 2016 during the 35th International Geological congress (IGC 35). The focus was on expanding African continent participation and exposure on the OneGeology portal. All OAGS members were invited and the event was very well attended which resulted in being able to plan new future active involvement and data buddying from Nigeria (Benin, Togo, Niger, Chad), Malawi and Angola. As well as identifying other countries that could be buddied, including; Madagascar, Zambia and Sudan.

### Working with Interoperable Geoscience Data

On Sunday 28th September, we ran a 'Working with Interoperability training course which was well attended by African and other delegates, the workshop focussed on using the IUGS-CGI WWW data exchange standards for Geoscience that OneGeology supports and encourages Geological surveys to use all around the globe.

The day gave a hands-on run through on how to create geoscience web services (both WMS and WFS) using GeoServer and PostgreSQL to provide GeoSciML Lite and GeoSciML Basic outputs, using existing OneGeology cookbooks as reference. It demonstrated how to access such services in web portals and desktop GIS applications, such as ArcGIS and QGIS.

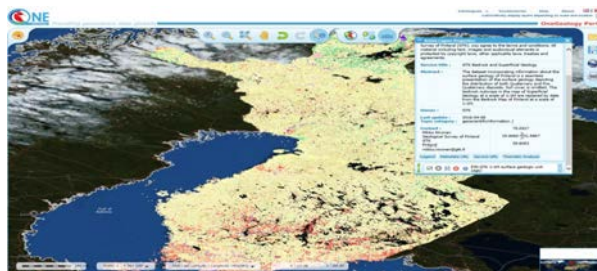
For those participants who already had web services running for OneGeology this was a refresher/reminder of the progress the OneGeology project has made in respect of capability, for example showing how data can be resymbolized using SLD if the data uses standard vocabularies of terms, and how data can be search thematically. The course showed how to update an existing service to take advantage of these new capabilities. For those new to configuring such services the course highlighted which materials to use and steps needed to undertake to provide a service. It also introduced them to faces behind the onegeology helpdesk and to IUGS-CGI international experts and trainers brought together to provide a practical workshop in Cape Town, including Ollie Raymond from Geoscience Australia, Jouni Vuollo from Geological Survey of Finland, Mark Rattenbury from GNS Science New Zealand and Tim Duffy and James Passmore from the BGS [onegeologyhelp@bgs.ac.uk](mailto:onegeologyhelp@bgs.ac.uk)



## Regional Updates

**Europe:** There has been much activity in Europe. OneGeology participants preparing new fully harmonised data web surfaces that are both OneGeology 5 star compliant following the new OGC/IUGS-CGI GeoSciML 4 standards, and also European Union INSPIRE (Environmental Information) directive conformant. Based on the 6 year old 1:1 Million pan-European harmonised Superficial Geology OneGeology-Europe project that was the precursor to the INSPIRE regulations for Geology, the individual country datasets and web services were updated using OneGeology cookbooks and support.

Once such new updated datasets and web services were available they were themselves harvested to a central database, a process only practical due to them all following the same standards and harmonised code lists, and combined into a pan-European Web Mapping Service suitable for display and applications in the new EGDI (European Geological Data Infrastructure) portal at <http://www.europe-geology.eu>. A good example of the benefits of regional (European) scale common OneGeology/IUGS-CGI standards implementation.



Finnish example of those new 5 star and INSPIRE services in the OneGeology portal

## Regional Updates Cont...

**EURASIA:** The Commonwealth of Independent States (CIS) published 3,720 geological maps at scale 1:200,000. On the OneGeology portal at the 35th International Geological Congress in Cape Town, South Africa in August 2016. This is the second stage of publishing geological maps of the CIS on the OneGeology portal. During the first phase in 2012, geological maps at scale 1: 1,000,000 covering the entire territory of the CIS countries, with a total area of 22 million sq. km were published. Now, more detailed maps of the CIS countries at scale 1:200,000 are presented to the attention of the world geological community.

Maps were compiled from 1954 to 1992 as part of a major government program of geological mapping of the former USSR. Maps are drawn by the unified requirements and instructions, and form a single harmonized set of data on the regional geological structure of the CIS countries. The work on compiling geological maps was attended by over 130 specialized companies, including production expeditions, research institutes, institutions of the Academy of Sciences and others.

Scientific-methodical management for all of the work was entrusted to the All-Union Geological Institute (VSEGEI) through a system of scientific and editorial boards. The decision to prepare and integrate the geological maps at scale 1: 200 000 was adopted in 2013 in Minsk (Republic of Belarus) at the XVII session of the Intergovernmental Council of the CIS countries.

A total of 3,720 maps are published on the OneGeology portal in raster format. Also, at a request, users have access to all elements of map marginalia, including legend, sections, layouts, etc.

Prepared geological maps at scale 1:200,000 are of great scientific and practical significance not only for the CIS countries, but also for the whole world, they are used in various fields of national economy

**SOUTH AMERICA:** Since the beginning of the OneGeology initiative in 2008 during the 33rd International Geological Congress in Norway, Brazil through The Geological Survey of Brazil (CPRM) has been providing geological data to OneGeology. In 2014 it became Principle Member and very recently was awarded with 5 stars accreditation.

To celebrate the accreditation CPRM is pleased to announce the edition of the Manual "CPRM e OneGeology: categoria 5 estrelas". This guide aims to disseminate and provide vital information to the users how to access the OneGeology Portal, to the Geology and Hydrogeology of Brazil, harmonised to the GeoSciML – OneGeology standard, in the global context. The Manual was published and disseminated during the "48th Brazilian Geological Congress" (48th BGC) held on last October, in Porto Alegre town, south of Brazil. It was well attended, by around 2.500 geo-scientists.

CPRM is offering to "buddy" the Organization of Geological Surveys (OGS's) in South America and the Caribbean to discuss the harmonisation of the Geology of South America, globally. CPRM is inviting the OGS's to contact us in case of any doubt.

For more information, please go to CPRM site [www.cprm.gov.br](http://www.cprm.gov.br) or to the link:

<http://rigeo.cprm.gov.br/xmlui/bitstream/handle/doc/16892/CPRM%20e%20OneGeology.pdf?sequence=3>

**ASIA:** The Coordinating Committee for the GeoScience Programmes in East and SE Asia (CCOP) Geoinformation Sharing Infrastructure Project is implemented by CCOP and GSJ inspired by the OneGeology initiatives and standards. The main objective of the project is to develop a web-based system for sharing geoscience information among the countries in the Asia-Pacific region. The information system will also make geoscience information readily accessible in the region. The GSi main portal site (Fig. 1) provides Web-based functions for spatial data rendering and analysis in the forms of Web Map Service (WMS) and Web Processing Service (WPS),



Geochronological Units Map of Brazil



respectively. It could also be used to download data in several formats. The system follows the standard model of Spatial Data Infrastructure (SDI). However, unlike the conventional SDI, it uses a unique system of controlling data access privileges of the users. Data owners could decide who can view, edit and download their data using the system's data access privileges component. User groups could also be created to classify users with the same data access privileges. The system also provides interface for the creation of a customized WebGIS portal for spatial data viewing and processing. The GSi project was officially started during the kick-off meeting on September 1 to 2, 2015 in Bangkok, Thailand. Twenty-three (23) participants from the CCOP member countries (Cambodia, Indonesia, Japan, Korea, Lao PDR, Malaysia, Myanmar, Papua New Guinea, Philippines, Thailand and Vietnam) including the staff of the CCOP Technical Secretariat (CCOP TS) attended the meeting. The project plan and data policy were discussed in this meeting. Currently, CCOP and GSI provide the servers to host the GSi main portal site and the database. Indonesia uses their database server for the storage of the country's data. The 1st CCOP GSi International Workshop was held at Solo, Indonesia, on Sep. 20-22, 2016. Large number of contents and preliminary portals sites from CCOP member countries are already available on the GSi system (<https://ccop-gsi.org/main/>).



Fig. 1. CCOP GSi's main portal site Shinji Takarada and Eikichi Tsukuda Geological

## TECHNICAL Update

In November 2016 The Open Geospatial Consortium voted to approve their new standard GeoSciML 4.1 produced under a memorandum of understanding with the IUGS-CGI. This represents global (and wider than the geoscience domain) recognition of the GeoSciML web data exchange standards that we have been supporting and implementing widely within OneGeology for many years now. [OneGeologyhelp@bgs.ac.uk](mailto:OneGeologyhelp@bgs.ac.uk) support and web documentation ([http://www.onegeology.org/technical\\_progress/technical.html](http://www.onegeology.org/technical_progress/technical.html)) will shortly be updated to refer to this new version of the standard including updating the GeoSciML-Portrayal OneGeology 3 star WMS (and 4 star Simple Feature WFS) documentation to the new name GeoSciML-Lite. However, fundamentally these are just standard name changes rather than technical structure changes so existing services will not have to be altered. New expanded documentation on GeoSciML-Lite *GeologicUnitView*, *ShearDisplacementStructureView* (faults), *ContactView* and *BoreHoleView* features will also be published this also helps to explain how data providers from Europe can use these to publish their data and be compliant with European Union INSPIRE standards also.

Excitingly increased documentation and helpline support for the International Union of Geological Sciences (IUGS) and Commission for the Management and Application of GeoScience Information's (CGI) *EarthResourceML* data transfer standards for the exchange of digital information for mineral occurrences, mines and mining activity (<http://www.earthresourceml.org/>) will also appear on OneGeology support pages. Participants will be encouraged to provide such services to them. OneGeology portal in the first instance as *ERML-Lite WMS* and associated *Simple Feature WFS* services.

### New data standards approved and to be supported by OneGeology

During 2017, we intend to write to all current data providers requesting they consider adding new services of the above and other types to the OneGeology portfolio and also to refresh existing services including adding the new Thematic keywords (as described in the previous newsletter) that express to use the now wide (120+ themes) data topic range that OneGeology now encourages to be served. The current portal now shows the following types of data being served

360 dataset found

Sorted by Geographic Area Thematic

- |   |   |
|---|---|
| <input type="checkbox"/> Bathymetry         | <input type="checkbox"/> Harmonised geology   |
| <input type="checkbox"/> Bedrock            | <input type="checkbox"/> Harmonised structure |
| <input type="checkbox"/> Chronostratigraphy | <input type="checkbox"/> Harmonized age       |
| <input type="checkbox"/> Economic Geology   | <input type="checkbox"/> Harmonized geology   |
| <input type="checkbox"/> Fault              | <input type="checkbox"/> Harmonized structure |
| <input type="checkbox"/> Geology            | <input type="checkbox"/> Hydrogeology         |
| <input type="checkbox"/> Geomagnetism       | <input type="checkbox"/> Lithology            |
| <input type="checkbox"/> Geopark            | <input type="checkbox"/> Minerals             |
| <input type="checkbox"/> Geophysics         | <input type="checkbox"/> Seismology           |
| <input type="checkbox"/> Geothermics        | <input type="checkbox"/> Stratigraphy         |
| <input type="checkbox"/> Gravimetry         | <input type="checkbox"/> Structural geology   |
| <input type="checkbox"/> Harmonised age     | <input type="checkbox"/> Structure            |
|   | <input type="checkbox"/> Superficial          |
|   | <input type="checkbox"/> Superficial deposits |
|   | <input type="checkbox"/> Surface geology      |

## OTHER NEWS

At the last Board Meeting held in South Africa , during the International Geological Congress (IGC) in Cape Town, the Board discussed a new Board member for North America. It is with great Pleasure that we welcome Louise Laverdure from Natural Resources Canada who will be representing Canada and North America. Also, during 2016 we also welcomed Tomasz Nalecz as the European Representative. Tomasz is the Deputy Director, Geoinformation at the Polish Geological Institute - National Research Institute. We look forward to working with both.

The Board minutes and actions covering the Principal members meeting at IGC 35 were published on 16th October [here](#)

We would like to say a fond farewell to our excellent departing Managing Director, Marko Komac. Thank you for all your hard work and leading OneGeology towards sustainability.

Also and Chris Pigram is retiring from Geoscience Australia, it is time to find a new Chair and to thank Chris for his leadership and championing of a future 3D approach.

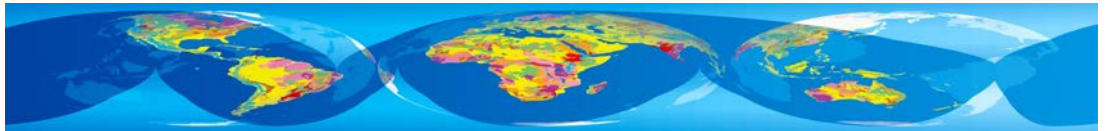
The next Board meeting will be hosted over 3 days 7-9 March 2017, by PGI at the National Research Institute in Gdansk. The agenda and relative papers will be placed on the [website](#) prior to the meeting but If you would like to raise any issues or discussions points with the Board please get in touch with your [Regional Representative](#).

### Current Membership Status

Existing Principal Members are renewing their contributions this month and we invite any and all institutions that support the idea, the concept and the aims of OneGeology not to miss the opportunity to join the OneGeology Consortium as annual fee subscribing Principal, Associate or Corporate Member and to help achieve its sustainability.

For more information or a copy of the Consortium Agreement please contact us; [onegeology@bgs.ac.uk](mailto:onegeology@bgs.ac.uk)

Did you know that The British Geological Survey used the image below for their 2017 Christmas Greeting Card and on the cover of their Annual Report 2016; Based upon World CGMW 1:50M Geological Units Onshore, with the permission of OneGeology



## Contacts

### Useful Links

OneGeology web site ([www.onegeology.org](http://www.onegeology.org))

OneGeology Portal (<http://portal.onegeology.org>)

OneGeology Brighton Accord ([http://www.onegeology.org/what\\_is/accord.html](http://www.onegeology.org/what_is/accord.html))

OneGeology help ([onegeologyhelp@bgs.ac.uk](mailto:onegeologyhelp@bgs.ac.uk))

General questions ([onegeology@bgs.ac.uk](mailto:onegeology@bgs.ac.uk))

OneGeology Administration

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