

Sub-task Number: DA-09-03c

Sub-task Title: Digital Geological Map Data

Overarching Task: Global Data Sets

Area: DATA MANAGEMENT

Relevant Committee: ADC

Related Targets: (to be included in 2009) Initial participation & coverage targets were achieved in mid-2008

Sub-task Definition (as given in the 2009-2011 Work Plan):

Make existing geological map data web accessible. Transfer know-how to the developing world. Accelerate the progress of an emerging geoscience data interchange standard. Use OneGeology to raise the public profile and understanding of geoscience. 102 nations and 13 international bodies participate in the OneGeology Project.

Leads (GEO Member or PO, Entity carrying out the work, Contact: e-mail):

UK (British Geological Survey), *Point of Contact:* Ian Jackson (ij@bgs.ac.uk)

EC (OneGeology Europe), Garry Baker (grba@bgs.ac.uk)

Motivation/Background

The reasons for this sub-task in the GEO context are those behind OneGeology itself:

The OneGeology concept grew out of several stimuli - the UN International Year of Planet Earth 2008 (IYPE); the increasing demand for geological surveys to produce digital geological map data for their territories; spatial data infrastructures were being planned and created in many nations and regions (for example, in Europe, the INSPIRE Directive); there was a need to accelerate the (frustratingly slow) development of interoperability in the geosciences; and last but not least the digital divide between the developed and developing nations needed to be addressed. OneGeology's proposition was deceptively simple: design and initiate a multi-national project to mobilise geological surveys to act as the drivers and sustainable data providers of a global dataset and use the vehicle of creating a tangible geological "map" to accelerate progress of a geoscience data model and interchange standard. At the same time the initiative would transfer know-how to developing countries and reduce the length and expense of their learning curve and help them to serve maps and data that could attract investment. OneGeology will contribute to the need to understand our global environment to solve global environmental problems at a global scale.

Outputs (e.g. products and services which result from the activities of the Task/sub-task; outlined in the form of deliverables with timelines)

Planned:

The project's basic aims are to deliver the following:

- create dynamic digital geological map data for the world;
- make existing geological map data accessible in whatever digital format is available in each country (the target scale is 1:1 million but the project will be pragmatic and accept a range of scales and the best available data); and
- transfer know-how to those who need it, adopting an approach that recognises that different nations have differing abilities to participate.

Specific success criteria for 2009-2012 are:

	Success Criteria	By August 2009	By August 2010	By August 2012 (34 IGC)
1	Number of countries participating	110	125	140
2	Number of countries serving a WMS	55	65	70
3	Developed the technology, systems and documentation to serve a WFS	✓	-	-

	Success Criteria	By August 2009	By August 2010	By August 2012 (34 IGC)
4	Developed a new front end to the portal	✓	-	✓
5	Number of countries serving a WFS	10	25	40
6	Tested a prototype serving high resolution and applied geoscience data (including cross-border)	-	✓	-
7	Released a service for high resolution and applied geoscience data	-	-	✓
8	Developed initial version of standard geological terminology	-	-	✓
9	Number of third parties integrating OneGeology WMS/WFS into their web sites or web services	2	5	10
10	Integration of tools for metadata discovering into the portal	-	✓	✓
11	Refreshed the website at least monthly	✓	✓	✓
12	Held one OMG during the year	✓	✓	✓
13	Established a Steering Group	✓	-	-
14	Established a governance model	✓	-	-
15	Held one Steering Group meeting during the year	✓	✓	✓
16	Number of presentations/articles and papers	15/10	20/20	30/20
17	Define and clearly communicate IPR policy	✓	-	-
18	Establish a sub-Committee to produce a policy on different "channels" (universities, commerce, public)		✓	-
19	Produced a policy on high resolution and applied geoscience data	✓	-	-
20	Drafted, agreed and communicated a policy on sponsorship and commercialisation	✓	-	-
21	Registered OneGeology with GEOSS Earth Observation portals	✓		
22	Subject to agreement on policy begin to negotiate with different NGOs, Donors (eg UN, World Bank) and possibly commercial sponsors	-	✓	✓
23	Designed and proposed a symposium/session for the 34 IGC	-	✓	-
24	Designed and implemented a booth, demonstrations and a symposium for 34 IGC and supply exhibition material for attendees at other conferences eg AGU/EGU	✓	✓	✓
25	Number of newsletters issued	4	4	4
26	Number of press releases	2	3	4
27	Organised series of international press conferences	-	-	✓
28	Engage and involve offshore community (with CGMW) to get offshore data (especially off continental shelf) into OneGeology	-	✓	-
29	Engage with GEO/GEOSS more specifically (with assistance from UNESCO)	✓	-	-

Produced (status June 2009): Participating Countries Map; those serving map data in green (dark areas)



Activities (operations or work processes through which resources are mobilized to produce specific outputs; outlined in the form of milestones including timelines)

Planned:

Progress (current status):

An effective governance structure has been emplaced. A Steering Group comprising Directors of Geological Survey Organisations representing each continent met in Paris in April 2009. There have been four meetings of the Operational Management Group and the last took place in Buenos Aires in July 2009. All the agendas and minutes are on the project's website. The Technical Working Group has also met four times and its next meeting is in Quebec in September.

106 nations are now participating in OneGeology. More than 40 of those nations are serving over 172 datasets to the OneGeology portal. The portal is being upgraded and the new version will be released in June 2009. Technical "cookbooks" are continuing to be produced and released on line to provide support and guidance to those wishing to serve data. The EU has funded a OneGeology-Europe project to take OneGeology much further in terms of sophistication in and technical advancement. In the USA we are working with parallel project known as GIN (Geoscience Information Network – funded by the NSF and involving the 50 US States and the USGS).

Resources (indication of resources – e.g. financial, human – contributed by GEO Members or Participating Organizations to produce outputs)

Each participant funds its data service and related support. BGS and BRGM fund the "hub" management and technical coordination work at around €500K per annum. Several Surveys provide additional staff resource to assist in managing the project. The OneGeology-Europe project (21 European geological surveys) has secured a 3.25M€ OneGeology-Europe project, funded under the EC eContentplus programme. This kicked off in September 2008. The NSF provides \$700K for GIN.

Architecture and Data Component

1) Please briefly describe any task-related Earth observation resources (data set, system, website/portal) and any related Web Service interfaces that are contributed to GEOSS. State whether these items are or will be registered with the GEOSS Component and Service Registry for access via the GEO Web Portals, and whether any associated standards or other interoperability arrangements will be registered in the Standards and Interoperability Registry.

2) Please also describe what data and information your activity/system needs that you would request to be accessible through the GEOSS Common Infrastructure.

Capacity Building Component

(capacity building is defined to include the development of capacity related to: (i) Infrastructure and technology transfer (Hardware, Software and other technology required to develop, access and use EO); (ii) Individuals (education and training of individuals to be aware of, access, use and develop EO) and (iii) Institutions – building policies, programs & organizational structures to enhance the value of EO data and products).

1) In accordance with the above definition does this Task have a capacity-building component? If so, please provide a short description of this component including a description of end users.

The project has capacity building at its heart. Nations which have the capacity to serve digital geology are teaming up with nations which do not, but have geological data that they want to serve. This is reflected in the project's 4 key aims, one of which is to "transfer know-how to those who need it, adopting an approach that recognises that different nations have differing abilities to participate". Training has been provided and is being offered to others. There is a great deal of documentation and on line help available (the cookbooks). Outreach is central to the project.

2) *Have any additional CB needs for this Task been identified? Please provide a short description.*

No

User Engagement Component

(please briefly describe to what extent end users are engaged in this Task and influence the nature of the outputs produced)

End users for geological data are many and diverse, ranging from government departments and public authorities through the oil, minerals and water industries, to the insurance and information sectors. The generation of the underpinning geological data and value added thematic products and services for these users is the core business of national geological survey organisations and the best are well engaged with their national user communities and understand user needs. At present, these end users are, contractually at least, only part of the OneGeology-Europe project, but through the global web presence and profile of Onegeology there is much feedback on what users require.

Science and Technology (S&T) Component

1) Please briefly describe the elements of scientific research or technological development contained in this Task.

OneGeology is underpinned by and is accelerating technical developments in the area of spatial data interoperability, facilitating the creation of a common global geoscience model and dataset. Other technical developments relate to web-based dissemination tools (portal technology) for the resulting datasets. At the moment, the focus is not on scientific research, but it is apparent that the existence and availability of interoperable data from many nations is starting to stimulate much needed work on scientific semantics and nomenclatures – thus accelerating the development of much needed geoscientific standards.

2) In relation to the S&T component(s) of this task, please describe gaps, priorities, continuity needs, barriers, scientific expertise and additional resource needs (this information will be used for developing a gaps and needs assessment in Task ST-09-01)

A priority is to encourage countries who are not yet participating and to then ensure that they serve their map data. This work is progressing well. Resources (funding) is a major gap/need. At the moment, OneGeology is largely a voluntary initiative of geological surveys. The EC and NSF funds help greatly in Europe and the USA but so much more could be achieved in data availability, acceleration of standards development and transferring know-how and skills, if additional external funds could be identified.

Members and POs' Contributions to Outputs and Activities above:

(Input is optional. This section gives the chance to Members and POs to provide more details (3-5 lines) on their individual activities, making a clear connection with the Outputs and Activities outlined above).

Japan

AIST: Participation in the Operational Management Group and Technical Working Group.

Participation (Table to be filled in 2009):

Type	Member or PO	Representing	Contact Name	EmailAddress
Lead(PoC)	UK	British Geological Survey/OneGeology	Stuart Marsh	shm@bgs.ac.uk
Lead	EC	OneGeology Europe	Garry Baker	grba@bgs.ac.uk
Contributor	Portugal	LNEG-LGM, Portuguese Geological Survey (former INETI)	Luis Martins	placido.martins@ineti.pt
Contributor	Japan	AIST	Koji Wakita	koji-wakita@aist.go.jp

List of countries participating in OneGeology as at 3 June 2009

Afghanistan	Gambia	Pakistan
Albania	Germany	Papua New Guinea
Algeria	Ghana	Philippines
Argentina	Greece	Peru
Armenia	Guinea	Poland
Australia	Hong Kong	Portugal
Austria	Hungary	Romania
Bangladesh	Iceland	Russia
Belgium	India	Rwanda
Bhutan	Indonesia	Senegal
Bosnia and Herzegovina	Iran	Sierra Leone
Botswana	Ireland	Singapore
Brazil	Israel	Slovakia
Bulgaria	Italy	Slovenia
Burkina Faso	Japan	South Africa
Burundi	Kazakhstan	Sri Lanka
Cambodia	Kenya	Spain
Cameroon	Korea	Suriname
Canada	Kosovo	Sweden
Central African Republic	Lithuania	Switzerland
Chile	Latvia	Tanzania
China	Lesotho	Thailand
Columbia	Luxembourg	Timor Leste
Democratic Republic of Congo	Malawi	Turkey
Croatia	Malaysia	United Arab Emirates
Cyprus	Mali	Uganda
Czech Republic	Mexico	United Kingdom
Denmark	Mozambique	Ukraine
Dominican Republic	Mongolia	United States of America
Ecuador	Namibia	Uzbekistan
Egypt	Nepal	Vanuatu
Estonia	Netherlands	Venezuela
Ethiopia	New Zealand	Vietnam
Finland	Nigeria	Yemen
France	Norway	Zimbabwe
Gambia	Oman	