

OneGeology

Building a global geological SDI...

François Robida - Ian Jackson

OneGeology

Building a global geological SDI...

A  **award WINNER**

The Geospatial World Forum logo consists of the text "GEOSPATIAL WORLD FORUM" in a grey, sans-serif font, with a circular icon to the right containing a stylized globe with red and blue segments.

François Robida - Ian Jackson

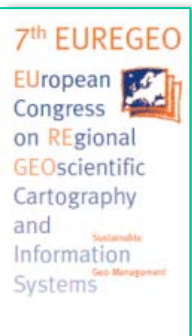


Making geological map data for the Earth accessible



**Award for
« Excellence in Geospatial
Standards Implementation »**

April 2012 - Amsterdam



Bologna - June 12th – 15th 2012

OneGeology

- A project to make web-accessible geological map data worldwide
- Initiated by BGS in 2006 as a geological survey contribution to the UN International Year of Planet Earth
- World-leading example of liberating science data for the benefit of society
- Deploying cutting-edge web mapping technologies
- Now being delivered by 117 geological surveys worldwide

Objectives

- Make existing geological map data accessible
 - in whatever digital format is available in the participating country
- **Transfer know-how to those who need it**
- Adopt an approach that recognizes that different nations have differing abilities to participate
- Stimulate interoperability = data sharing
- *Stimulate harmonisation = scientific consistency*

Who funds it?

Support of geological survey staff and data around the world..... but also



British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL



Additional funding for coordination and data portal



€3.25 million for 20 nation OneGeology-Europe project 2008-2010

(supporting the European SDI -INSPIRE)



\$700 000 for Geoscience Information Network for 50 US State geological surveys

How it works - the technology

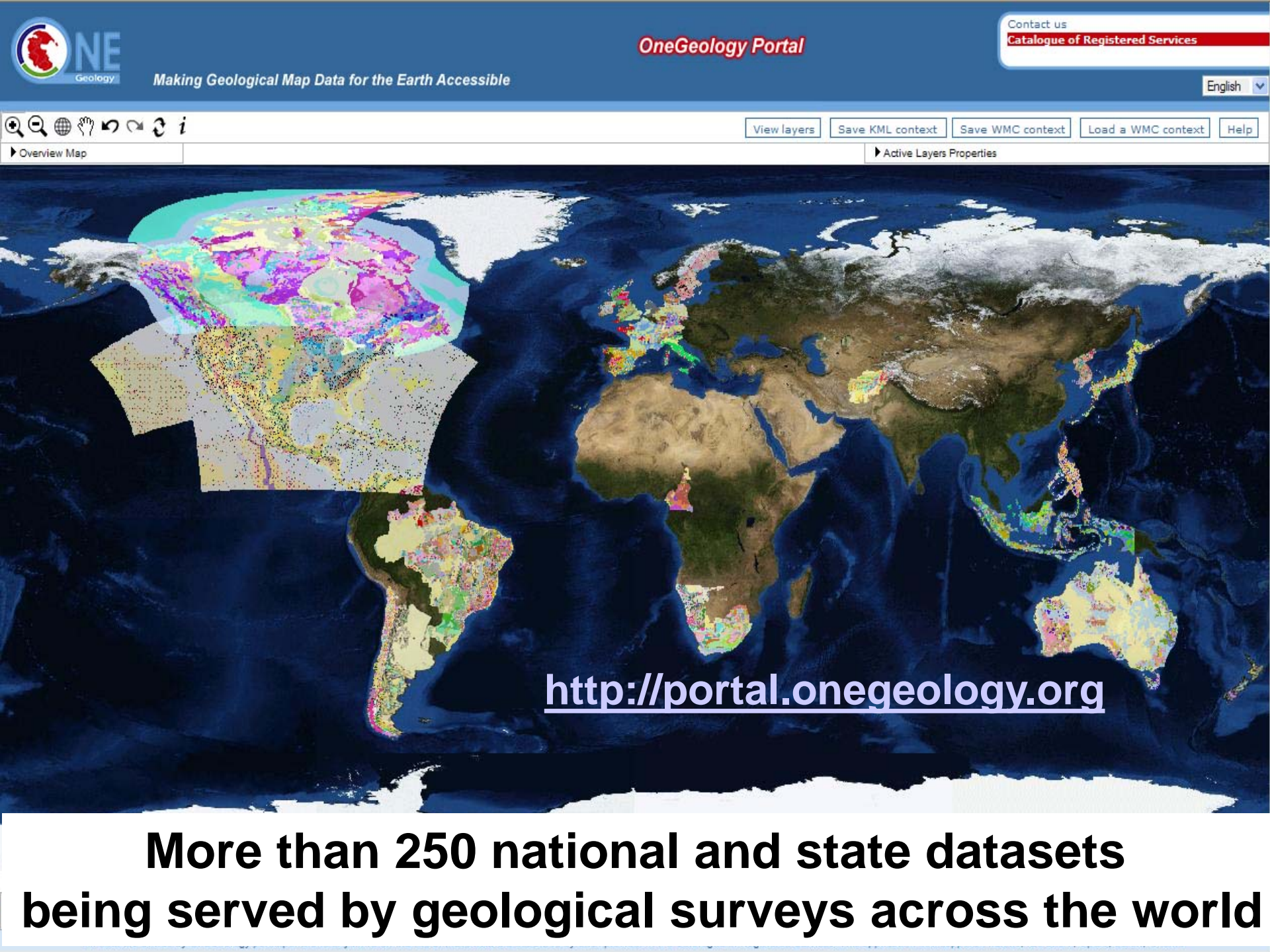
- State-of-the-art...but straightforward and open to all
- Distributed dynamic system – each nation serves its data, or works with a “buddy” survey
- Open global (OGC) standards – *Web Map Services and Web Features Services*
- User needs only an internet browser

An operational system - *not an experiment*

- Portal and catalogue allow discover, view, zoom, pan, interrogate, download.... and transfer to Google, or wherever
- Many data services: 229 WMS and 23 WFS data layers from 57 data providers
- Help desk and extensive easy to use documentation
- 1-5 Accreditation scheme which defines service levels which must be met (*Michelin Stars for rocks – edible geology!*)
- Users in research, education and commerce

138 organisations from 117 countries

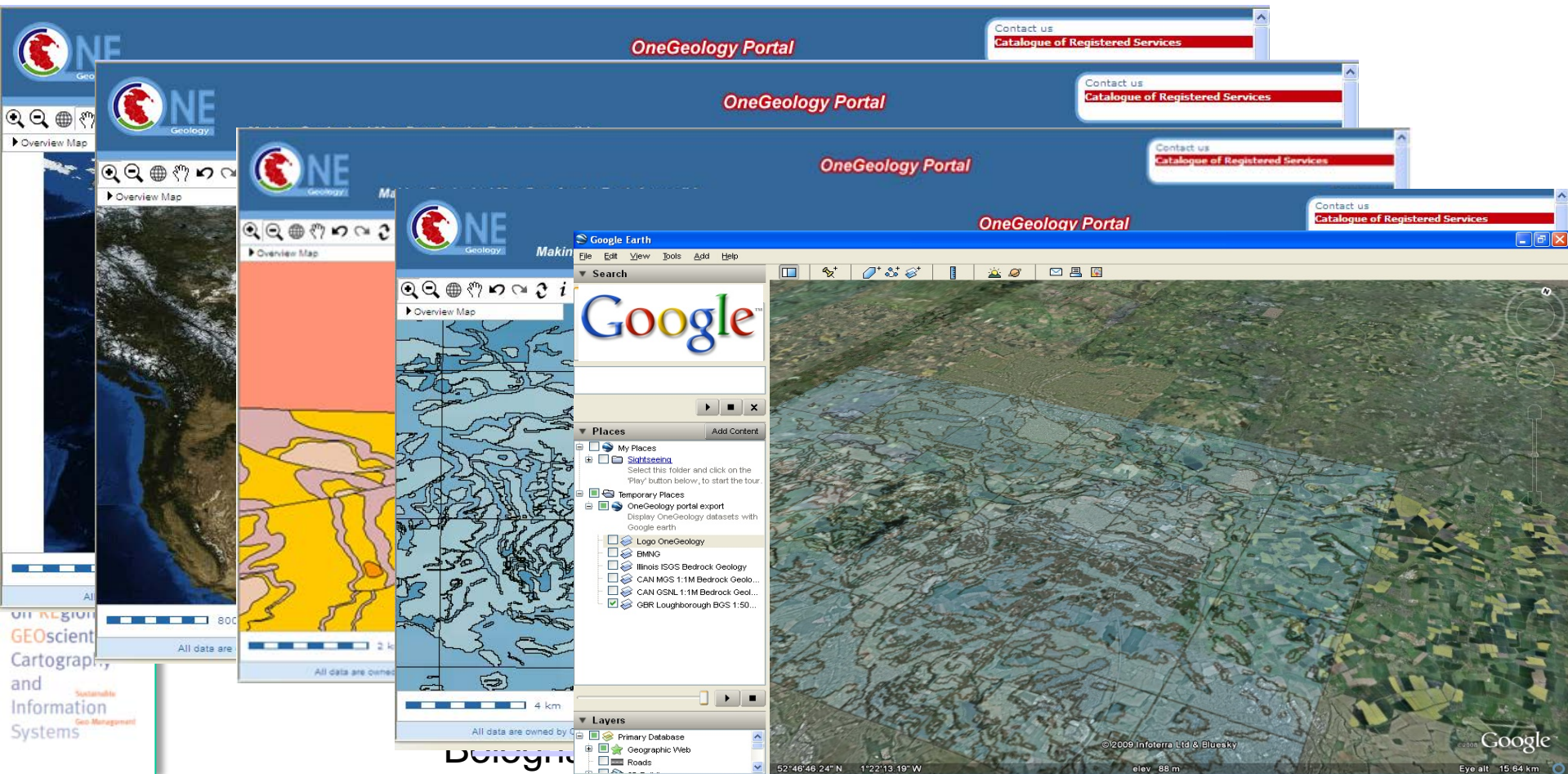




<http://portal.onegeology.org>

**More than 250 national and state datasets
being served by geological surveys across the world**

Evolving from national and small scale to large scale, local, applied and flexible



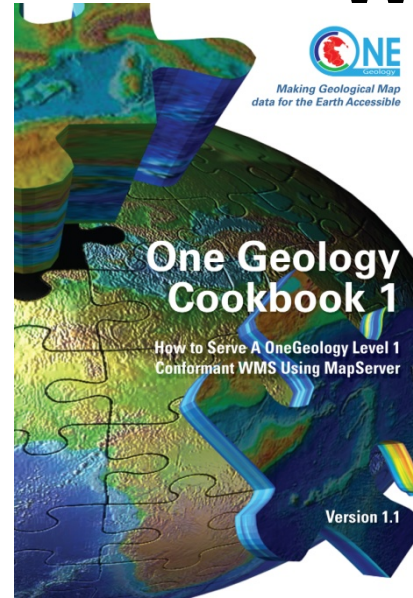
The image is a collage of four overlapping screenshots. The top-most screenshot shows the OneGeology Portal interface with a blue header, the OneGeology logo, and a search bar. Below the header, there are navigation icons and a map area. The second screenshot shows a similar view but with a different map layer. The third screenshot shows a Google Earth interface with the OneGeology Portal overlay. The bottom-most screenshot shows a detailed view of a geological map with various colored regions and a scale bar. The text 'ONE Geology' is visible in the top left of each screenshot. The text 'Making geological map data for the Earth accessible' is visible in the top right of each screenshot. The text 'ONE Geology' is visible in the top left of each screenshot. The text 'Making geological map data for the Earth accessible' is visible in the top right of each screenshot.

Transferring know-how.....to those who need it

Technical workshops



Web resources



7th EUROPEAN
European Congress
on Regional
GEOscientific
Cartography and
Information
Systems

12th – 15th 2012

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Page last updated at 18:14 GMT, Thursday, 31 July 2008 19:14 UK

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Geological mapping gets joined up

By Jennifer Carpenter
Science reporter, BBC News



OneGeology: New Map Strips Mother Earth Naked

Friday, 1 August 2008, 9:16 am
Press Release: UK Government

Mother Earth naked -- a modern masterpiece

Have you ever wondered what our world would look like stripped bare of all plants, soils, and man-made structures? Well wonder no longer; images of the Earth as never seen before have been unveiled in what is the world's biggest geological mapping project ever.



RTÉ's the Le- Radio O'Donoghue

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PROJEKT ONEGEOLOGY

Schrift: - +

So haben Sie die Welt noch nie gesehen

Von Holger Dambeck

nature news

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Access

This article is part of Nature's premium content.

Published online 31 July 2008 | Nature | doi:10.1038/news.2008.1001

News

Mother Earth gets undressed

A database of geological maps of the world has been made freely available.

Katrina Charles

What were the obstacles?

Technical

- Launched at a time when interoperability technical platform available ... but.....
- Initial lack of awareness and experience in interoperability amongst global partners
- Global/major scale implementations did not exist
- Geological map data is more interpretive and complex than most other spatial domains
- Geologists need considerable scientific discussion to agree on common features and standards

What were the obstacles?

Cultural and organisational

- **Global implementation – many different cultures, languages, domains, business drivers, states of progress**
- **Sensitivity over map ownership and copyright**
- **Weakness in outreach and communication**
- **Different Survey data access models**
- **Reluctance to disseminate information that is not “perfect”**
- **Sustainability after initial enthusiasm and launch**
- **Delivering a robust industry strength professional service – not a flaky research data application**

Why has OneGeology worked?

- **Short simple mission and vision: 3 simple objectives**
- **Uncomplicated initial proposition: first WMS, then WFS**
- **Inclusivity: all geological surveys welcome – different nations have differing abilities to participate**
- **Minimal intrusion into local systems**
- **A pragmatic approach to coordination and governance – those prepared to lead drive it forward**
- **A “let’s do it” ethos, not excessively strategise about it !**
- **A “buddy” system to help those who need it**
- **Putting significant effort into outreach and media profile**
- **Pre-existence of international network of geoscientists and geological surveys**

What next for OneGeology

- **Come to Brisbane !**



- **A new portal with new functionalities**
- **New datasets**
- **'The OneGeology Best Application Competition'**
- **A new operational structure will be proposed to the Directors of Geological Surveys to ensure sustainability of the initiative**
- **...**



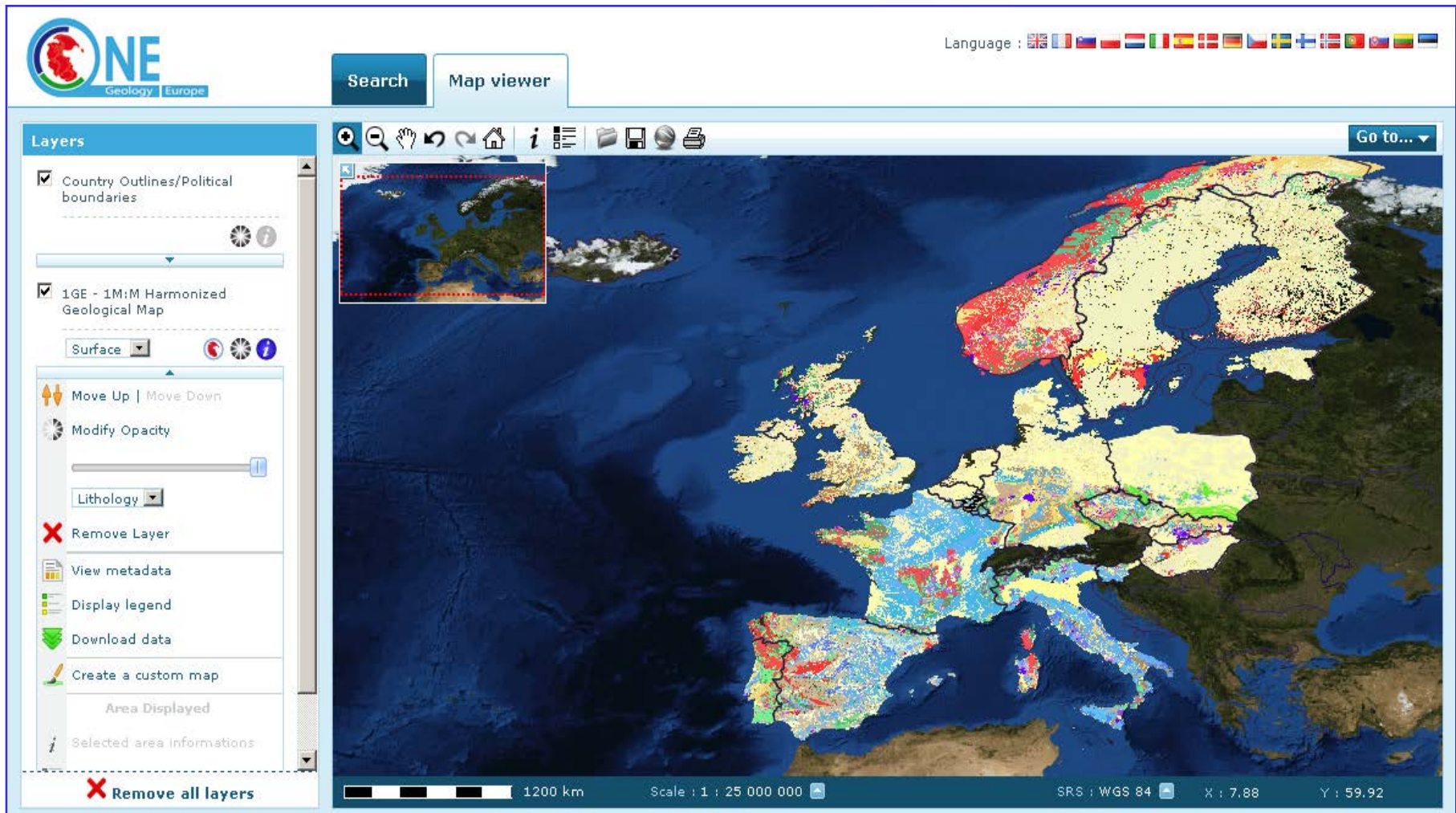
The OneGeology-Europe project



The Geological Surveys of Europe



An excursion to Europe - OneGeology-Europe



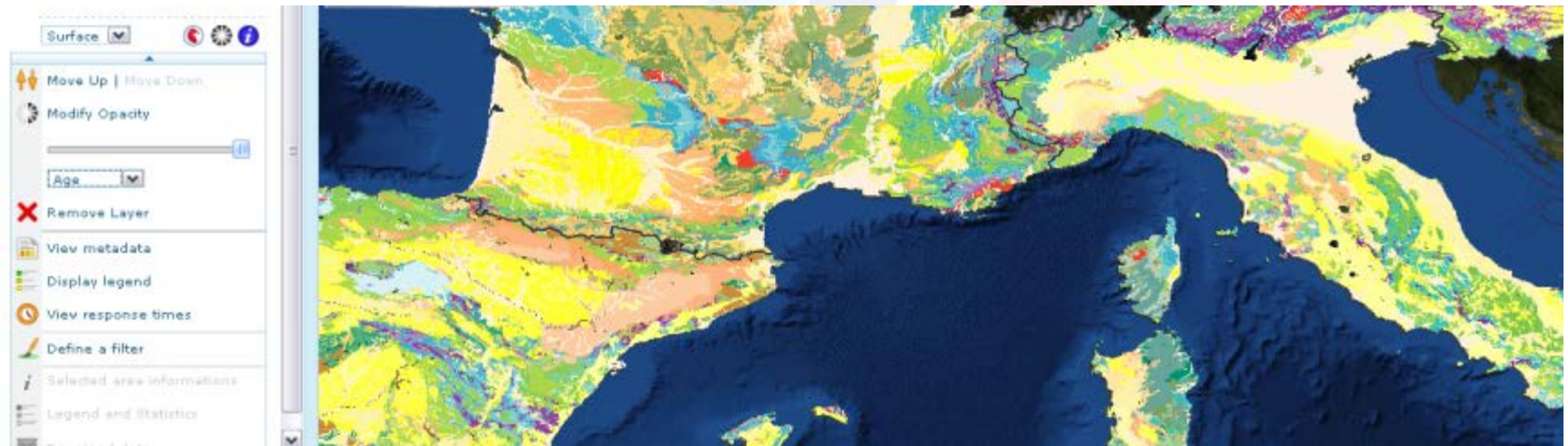
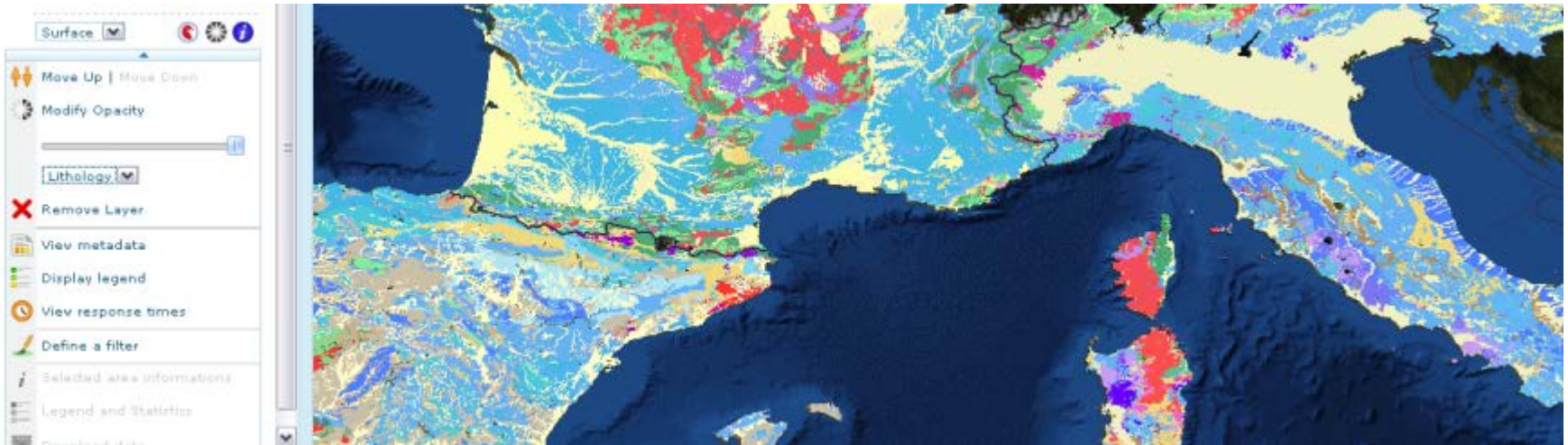
The screenshot displays the OneGeology-Europe web application interface. The top left corner features the ONE Geology Europe logo. The top right corner shows the language selection menu, currently set to English, with flags for various European countries. The main interface is divided into a left sidebar and a central map viewer.

Layers Panel (Left Sidebar):

- Country Outlines/Political boundaries
- 1GE - 1M:M Harmonized Geological Map
 - Surface
 - Move Up | Move Down
 - Modify Opacity
 - Lithology
 - Remove Layer
 - View metadata
 - Display legend
 - Download data
 - Create a custom map
 - Area Displayed
 - Selected area informations
- Remove all layers

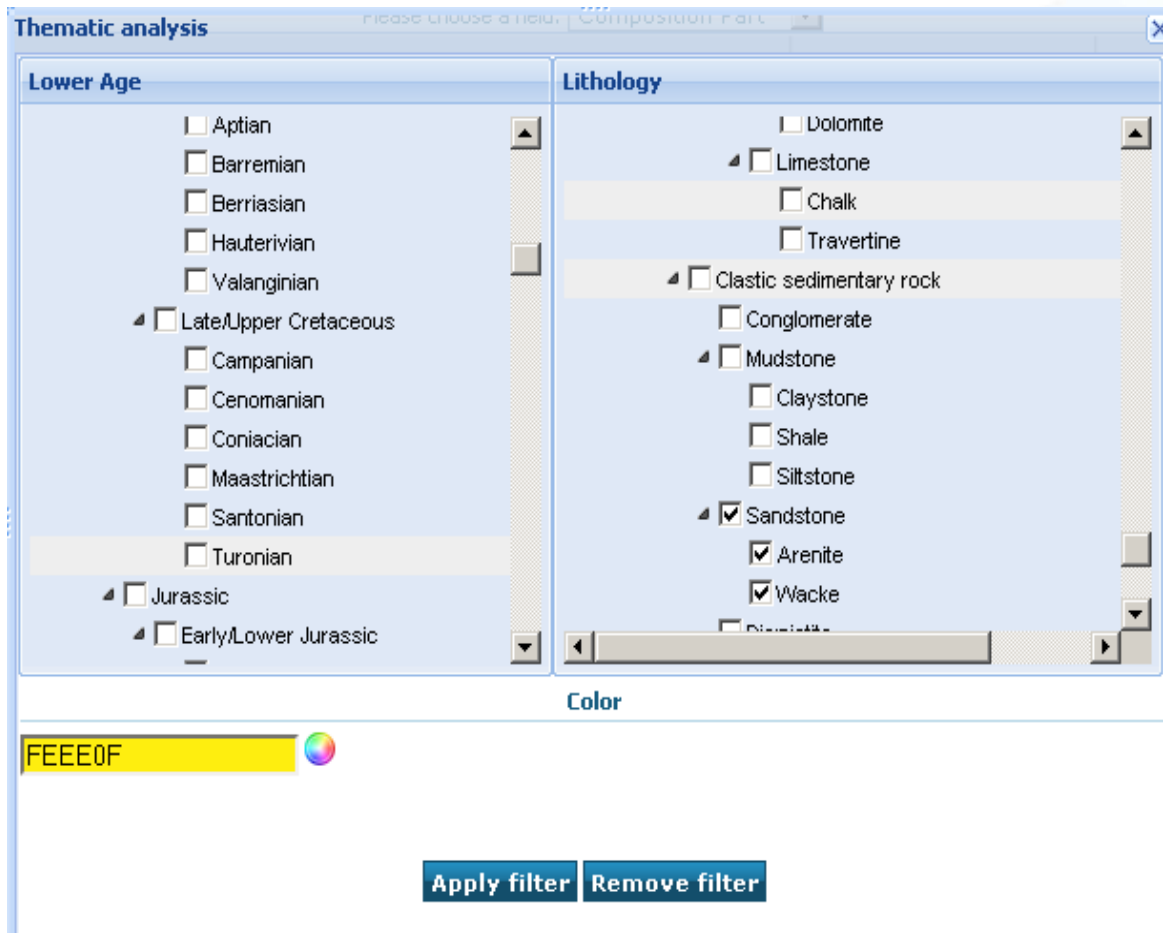
Map Viewer (Center):

- Search and Map viewer tabs
- Navigation toolbar: Home, Search, Pan, Rotate, Refresh, Print, Download, Full Screen
- Go to... dropdown menu
- Main map area showing a geological map of Europe with various colored regions.
- Scale bar: 1200 km
- Scale: 1 : 25 000 000
- SRS: WGS 84
- X: 7.88, Y: 59.92



4 harmonised WMS (Spain, France, Italy, Slovenia) with two different legends

Custom map of lithology and/or age



The screenshot shows a web-based interface for creating custom maps. It features two main panels: "Lower Age" and "Lithology".

- Lower Age:** A list of geological periods with checkboxes. The "Late/Upper Cretaceous" group is expanded, showing sub-items like "Campanian", "Cenomanian", "Coniacian", "Maastrichtian", "Santonian", and "Turonian". The "Jurassic" group is also expanded, showing "Early/Lower Jurassic".
- Lithology:** A list of rock types with checkboxes. The "Clastic sedimentary rock" group is expanded, showing sub-items like "Conglomerate", "Mudstone", "Claystone", "Shale", "Siltstone", "Sandstone", "Arenite", and "Wacke".

Below the panels, there is a "Color" section with a yellow bar labeled "FEEEE0F" and a color selection icon. At the bottom, there are two buttons: "Apply filter" and "Remove filter".

Creation of new maps in real time from 20 WMS sharing a common interchange data model and common vocabularies

Custom map

Language : 



Search | Map viewer | Metadata folder

Layers

1GE - 1M:M Harmonized Geological Map

Surface

Move Up | Move Down

Modify Opacity

Lithology

Remove Layer

View metadata

Display legend

Download data

Create a custom map

Area Displayed

Selected area informations

Legend and Statistics

Download data

Remove all layers

Go to...

20 national WMS are requested to deliver a map using the user defined SLD (customised legend)



150 km | Scale : 1 : 3 125 000 | SRS : WGS 84 | X : 2.98 | Y : 46.64

Geologic units with sandstone (colour: yellow)

OneGeology services accessible in EuroGeoss / GEOSS



GeoSS EuroGeoss
A EUROPEAN APPROACH TO GEOSS

EUROGEOSS BROKER

Map Close Tab

Query constraints selection My resources

- Keyword

Location

Enter a location name (case is ignored), e.g.: europe, italy, rome, etc...

Selected area

Overlaps Contains Disjoints

Click and Drag on the map holding the Shift key to select an area

- Time

Search results: 235 - Elapsed time: 3 minutes and 46 seconds

	<input type="button" value="Helpers"/>		ESP IGME EN 1:1M GeologicUnits	<input type="button" value="Add"/>
	<input type="button" value="Helpers"/>		Geologic-structures	<input type="button" value="Add"/>

Thank you for your attention

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