

The Spatial Data Infrastructure for the Geological Reference of France

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Spatial Data Infrastructure for the GEOLOGICAL REFERENCE OF FRANCE

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From the geological map to the geological information infrastructure...

In continuation of the national programme of geological map of France at 1:50,000, the French Geological Survey (BRGM) engaged in the Geological Reference of France (**Référentiel Géologique de la France, RGF**) Also refer to a RGF dedicated presentation Theme T3.8 – 31/08 10:30-12:00)

- > New context and paradigm
- > Proof of concept: Vosges-Fossé Rhénan region
- Principles and objectives of this new SDI at the French Geological Survey
- > Target system, architecture and data modelling
- > Data dissemination and Interoperability
- > Conclusions Perspectives





Information system for geological survey activities



Several missions of the Geological Survey Organisations

- > Collect data (national inventories)
- Store & Manage (national custodians)
- > Valorise (generate added value)
- Ensure availability (in paper & digital form)
- Contribute to the promotion of the sustainable use of non-renewable resources (attractiveness key factor in mineral sector development)
- > Contribute to geohazards mitigation
- Support to geoscientific knowledge and skills
- Support the informed decision-making

Evolution of missions: data collection and map production => information capitalisation and dissemination

30/08/2016

Geological mapping: evolution of the paradigm

- > RGF = Scientific Programme + Information System => new "production line"
- > RGF mobilises a network of contributors from the Survey (BRGM), universities and private sector
- > Evolution from the publication of geological maps stored in a database to a dynamic SDI to generate end-user oriented products
- > Evolution from a 2D mapping paradigm to a 3D-4D multi-actor approach
- Ensure the three-dimensional consistency of the geological data at regional and national scale







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Outlining the French geological reference platform

> Proof of concept: Vosges – Fossé Rhénan (2012-2013)







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An Information System for the RGF (2014 - ...)

The RGF Information System must provide the **best available geological information** on the French territory, **whatever the producer** (French Geological Survey, universities, Earth science research institutes, ...) through **validation and traceability processes** which define and **guarantee the quality** of data and knowledge that are **capitalised and disseminated**.

Main activities of the information system



Data model overview: the RGF approach



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System design and Data modelling

> Use cases, actors, data workflows, validation processes, functional analysis, technical architecture in line with international standards





New back office for the French geologists

- The national network of contributors to the RGF programme includes BRGM geologists, university researchers and students on 5-year regional projects
- > Supervision and validation by a Scientific Committee
- Facilitated direct access for the registered contributors to the information system through a web extranet environment

Master data management



Observation and measurement data management



Multi-thematic data search



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Data dissemination and interoperability

The SDI of the "Référentiel Géologique de la France" is designed and developed according to the state-of-the art regarding the Public Sector Information

- Legal frameworks: INSPIRE European Directive (2007), French implementation of INSPIRE-compliant interoperability (2007), new French law on "Digital Republic" (2016), Open Data commitment (G8, 2013)
- Specifications and vocabularies: GeoSciML, Observations and Measurements, INSPIRE theme "Geology", International Chronostratigraphic Chart
- Internet of Things: referencing with International Geo Sample Number (IGSN) and Digital Object Identifier (DOI)





Conclusions and perspectives

- > Ambitious innovative project: first stage (5 years) of a permanent infrastructure
- > Design and implementation jointly with the scientific research programme on Pyrénées
- > Timely with the mature level of a range of methods, processes, standards and obligations
- > Core of the Geoscientific information system of the French Geological Survey (hydrogeology, mineral resources)
- Provider of master data to other French SDIs (underground water, mineral resources, geothermal energy, ...)
- > Provider to international infrastructures e.g. EGDI, EPOS and OneGeology: French contribution re. geological data and knowledge (observations and interpretations)
- > Built on international collaborative projects experience such as OneGeology-Europe, Minerals4EU, EuroGEOSS, etc.







Merci de votre attention Thank you for your attention

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