



OGC GeoScience DWG: a forum to enhance and organize geoscience data standardization

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OGC GeoScience DWG: a forum to enhance and organize geoscience data standardization

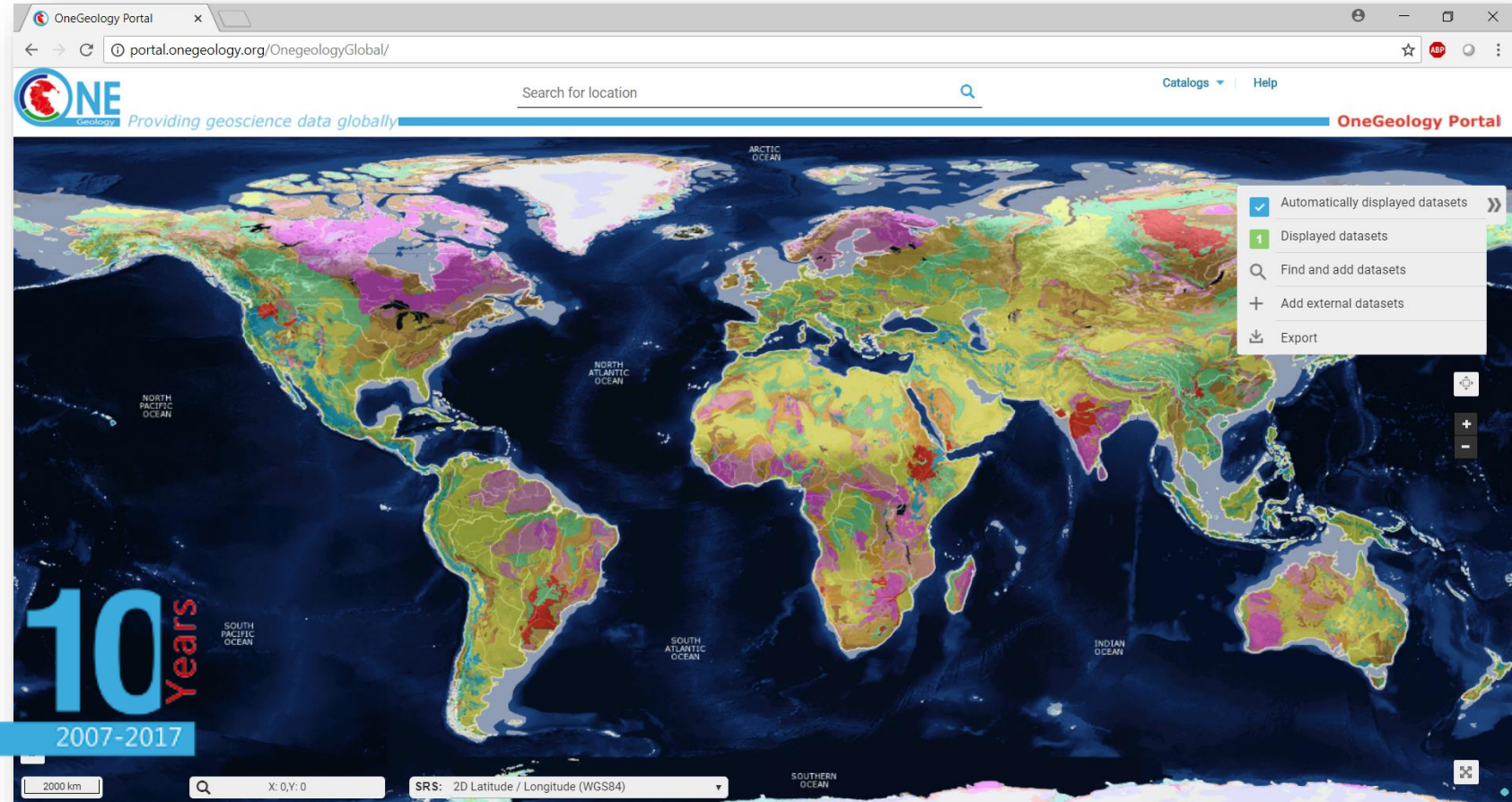
Mickaël BEAUFILS (BRGM) & Carina KEMP (GeoScience Australia)

RFG 2018 – Geo-Engineering and Earth Sciences: Integration Opportunities session
Vancouver, Canada - 18 June 2018

The Earth



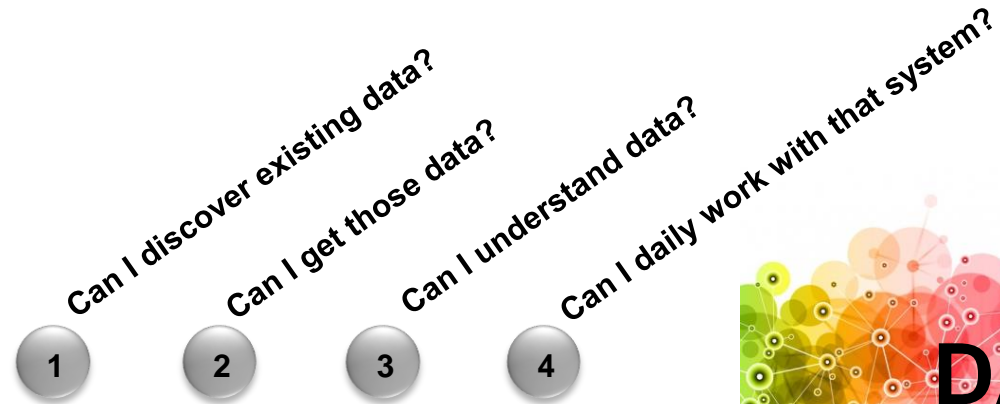
- OneGeology: celebrating 10 years of interoperability in the geoscience



Four levels of interoperability



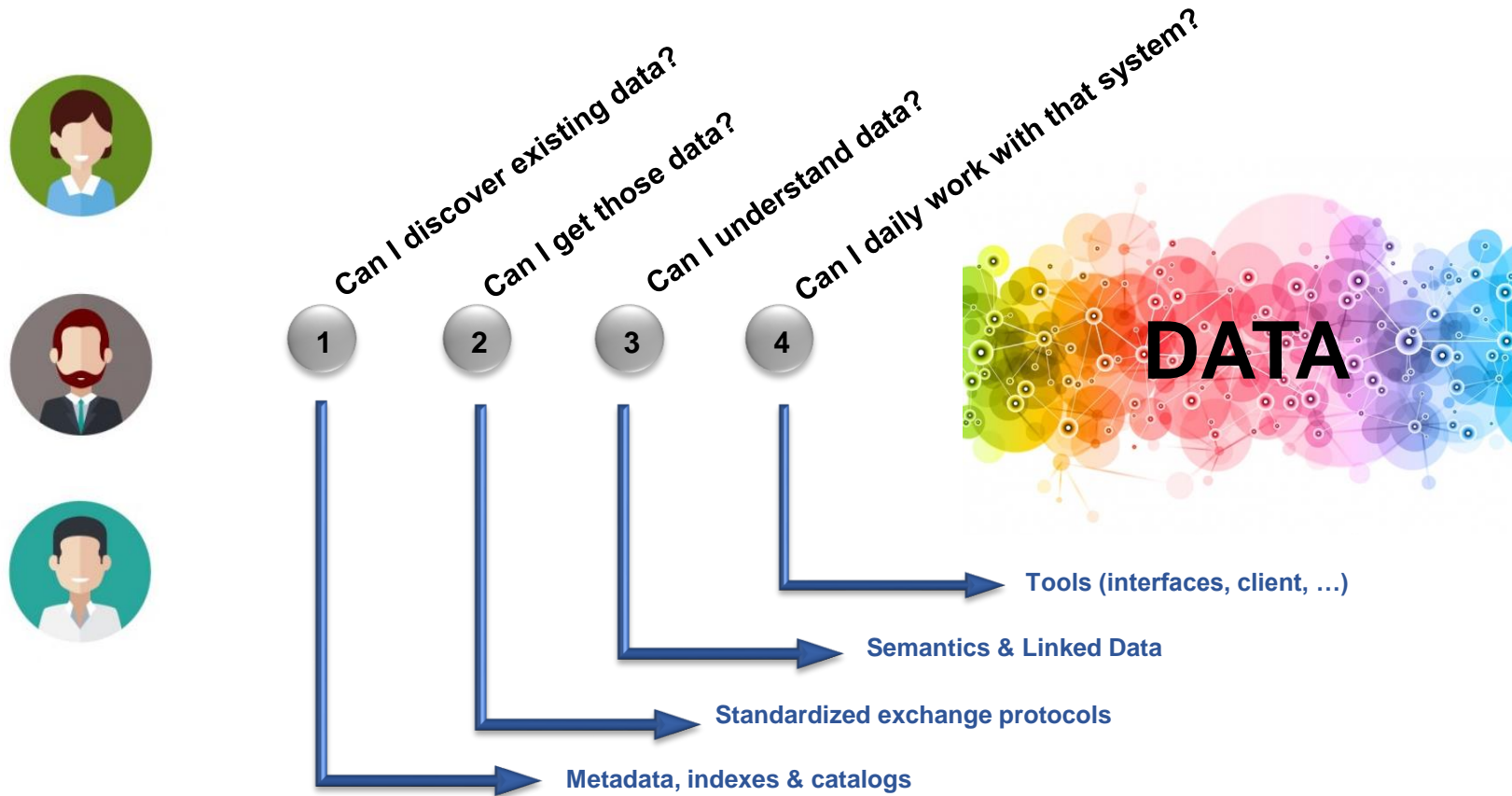
- The needs (from an user point of view)



Four levels of interoperability



- The answers (from an IT point of view)



What is the OGC GeoScience DWG ?



- The joint Domain Working group (DWG) between OGC and CGI-IUGS



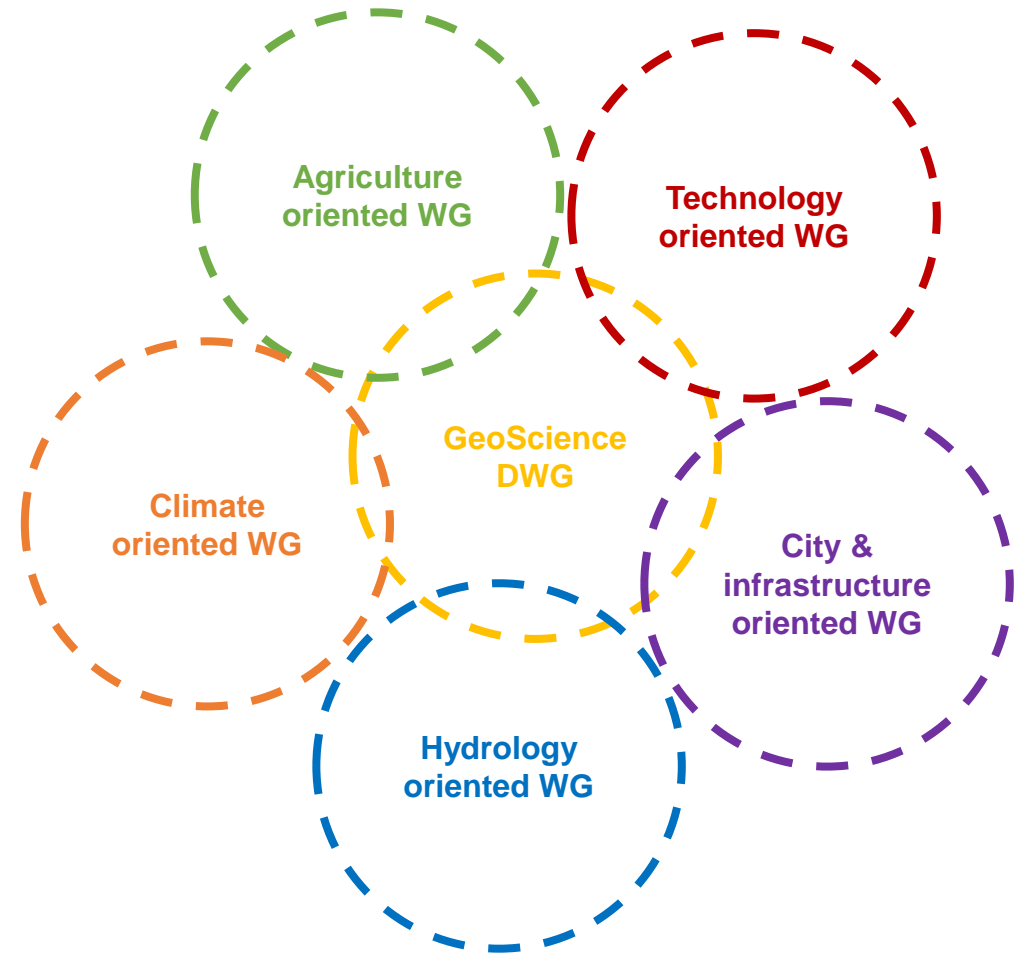
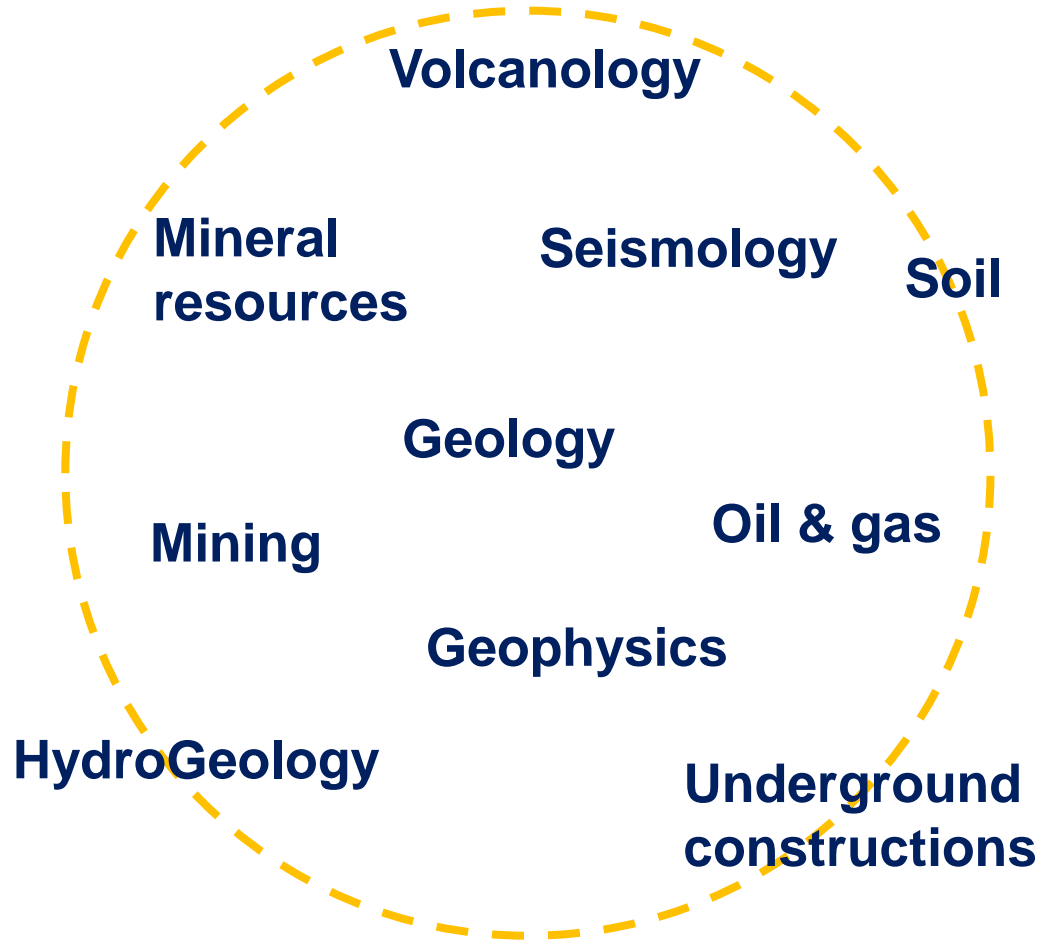
Geospatial Data Standardization



Geoscience Data Community

- Officially created in September 2017
- One goal: leveraging geoscience data interoperability
- Co-chairs: Mickaël Beaufils (BRGM) & Carina Kemp (Geoscience Australia)

GeoScience DWG perimeter



Ensure proper connections with other groups

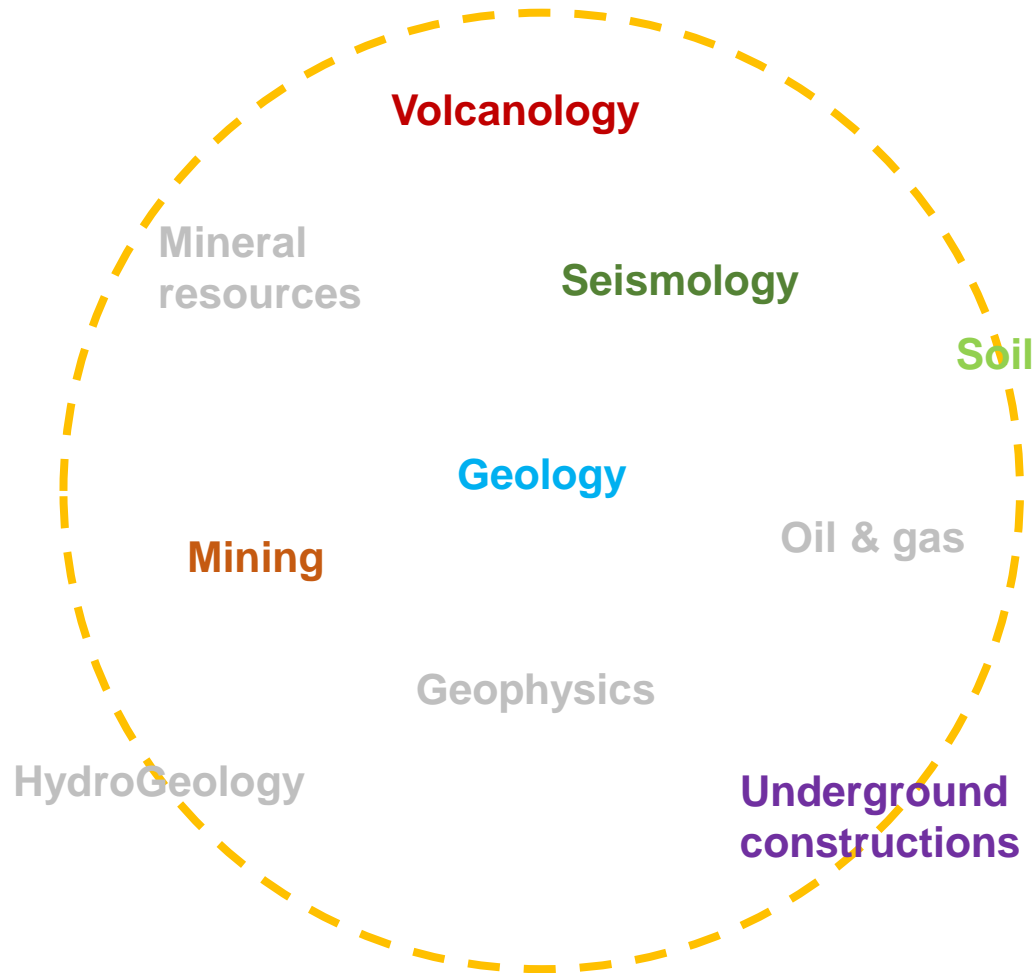


Earth, Space, and Environmental Sciences
Interest Group






... and many others

Connect people interested in the geoscience topic



Exploring GeoScienceDWG horizons

(Presentation session from March 2018 - Orleans TC)

- BIM and Geomodelling (Mickaël Beaufils - BRGM)
- LIDAR and Geomodelling (Thomas Dewez - BRGM)
- Seismology (Aurelien Dupont - EMSC) 
- Volcanology (Jean-Marie Saurel – IPGP) 
- Mining (Andrew Scott - GMSG) 
- Soil (Josh Liebermann - Tumbling Walls LLC)
- AstroGeoScience (Mark Hunter - USGS)

Harmonize geoscience data expression and facilitate usage



- **Two starting activities to mention:**
- **Borehole Interoperability Experiment** targeting a common Borehole conceptual model
 - Borehole is a core concept in geoscience
 - Several existing standards
 - Cross-countries initiatives on the run to push standard usage (EPOS, ...)
- **3D-4D model discovery Interoperability Experiment** targeting definition of metadata for 3D-4D models
 - 3D-4D model standardization is not so advanced
 - “No consensus of 3D-4D model definition”
 - Have to make 3D-4D models at least findable
 - Cross-countries initiatives on the run to push standard usage (EPOS, OneGeology, ...)

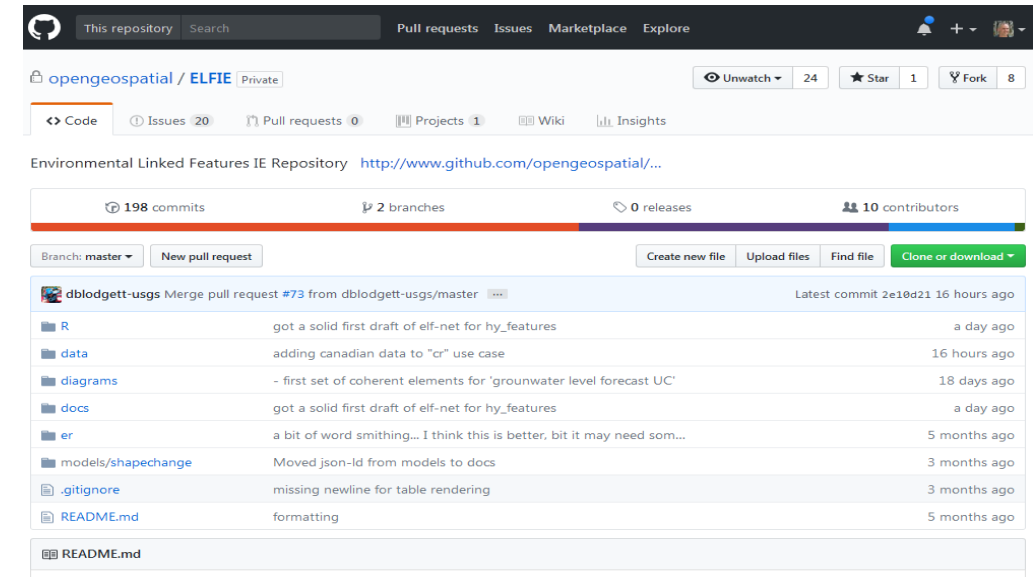
Stay connected and even propose enhancements to technologies / solutions



- Environmental Linked Features IE (ELFIE)
- ‘Demonstrate the use of existing and pending OGC standards for the encoding of **environmental observation data** in an integrated dataset of features linked according to **ReSTful** and **Linked Data** principles.’

- Initiators:
 - U.S. Geological Survey (US)
 - Land Information New Zealand (NZ)
 - BRGM (FR)
- Participants
 - Tumbling Walls and Dewberry (US)
 - Meta-linkage (AU)
 - INSPIRE (EU)
 - Natural Resources Canada (CA)
 - Manaaki Whenua and Horizons Regional Council (NZ)

From: <https://github.com/opengeospatial/ELFIE>



Initiative to mention relative to geo-engineering



- **Geoscience data standardization applied to Building Information Modeling for Underground Infrastructure**



- **MINnD UC8 project (<http://minnd.fr/en>)**
 - **Assessment / enhancement of existing standards for:**
 - **Description of tunnel and its equipment (IFC Tunnel)**
 - **Description of underground infrastructure environment and relationship with the construction (OGC standards: Observations & Measurements, GeoSciML, GroundWaterML, ...)**
 - **Observations data (including boreholes, tests, lab analysis, geophysics)**
 - **Geological, hydrogeological and geotechnical models**
 - **Impact on surrounding constructions**
 - **Impact on environment (pollution)**
 - **Risk assessment**
- **Integrated Digital Building Environment (IDBE group)**



Summary



- **Benefits from interoperability / standardization**
 - At least, getting data
 - Being able to use data, combine data
 - A necessity for big projects
 - Facilitate application / database maintenance, reduce duplication
 - **Having more time to do something else!**
- **GeoScienceDWG: the place to build standards for geoscience**

Interest in going further with us?



- **RFG 2018:**
 - **RS17: Geoscience Information Technology for the Next Generation**
 - **Wednesday June 20 (8h30 – 17h00) – Room 118**
- **Borehole IE kickoff**
 - **Thursday June 27 (visioconference, link to be provided soon)**
- **Keep in touch with the group**
 - <https://lists.opengeospatial.org/mailman/listinfo/geoscience.dwg>
- **More information about the group**
 - http://external.opengeospatial.org/twiki_public/GeoScienceDWG/WebHome

Thanks for your attention



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