The following was presented at DMT'13
(June 2-5, 2013, Golden, CO).

The contents are provisional and will be
superseded by a paper in the
DMT'13 Proceedings.

See also earlier Proceedings (1997-2012)
http://ngmdb.usgs.gov/info/dmt/

Interoperable Geoscience Information Exchange

What is GeoSciML?

A web-based, interoperable, geoscience information exchange platform:

1. information exchange models (schema)
2. geoscience vocabularies

Objectives of GeoSciML:

To develop international standards for the structure of geological information (i.e. data model standards) to enable interoperability, particularly among national geological survey agencies.

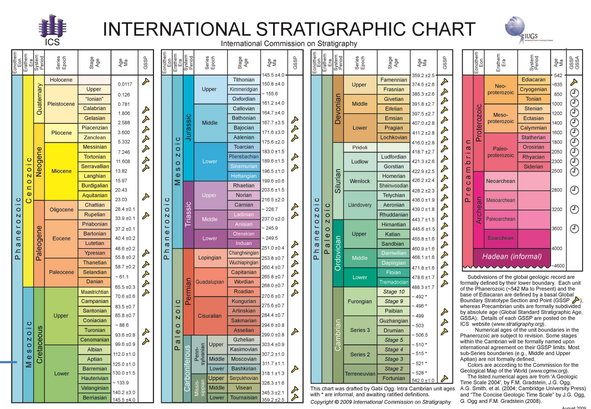
More specific objectives are

1. to develop a conceptual model of geoscientific information drawing on existing data models
2. to implement this model in an agreed schema language (UML)
3. implement an XML/GML encoding of the model
4. develop a testbed to illustrate the potential of the data model for interchange
5. identify areas that require standardised classifications in order to enable interchange

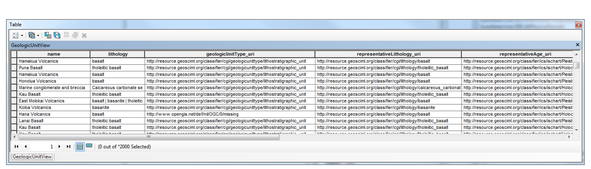
Scope of GeoSciML

To make interoperable scientific information (not cartography) normally shown on geological maps including:

1. Geologic units
2. Earth materials (lithologies)
3. Geologic Structures

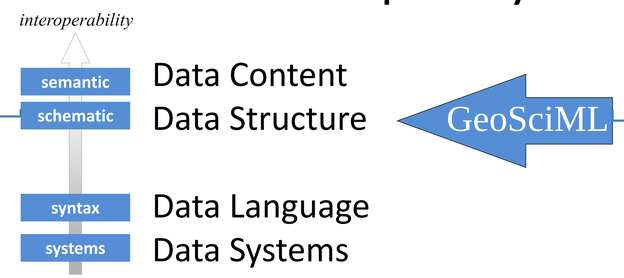


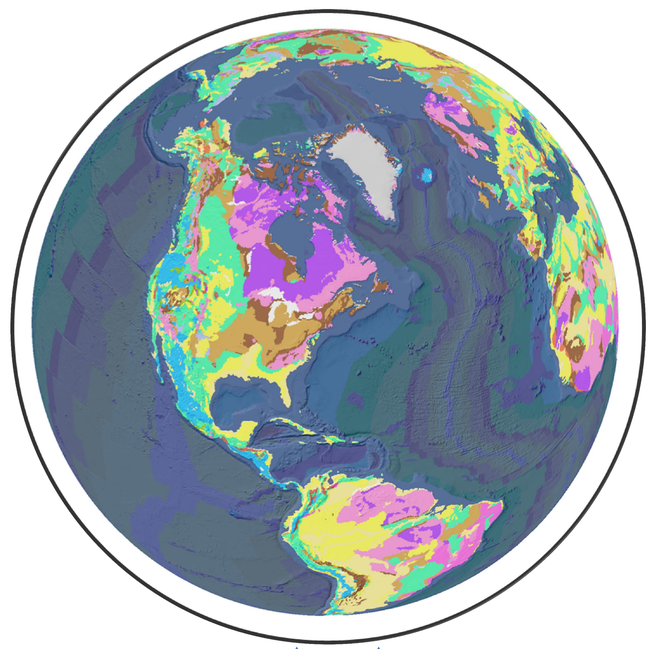
Geologic Age Vocabularies



Subset of data in GeoSciML vocabularies in the geologic unit view information exchange model

Four levels of data interoperability:





Age Representation

Lithology Representation

What is OneGeology?

OneGeology is an international initiative of the geological surveys of the world. This ground-breaking project was launched in 2007 and contributed to the 'International Year of Planet Earth', becoming one of their flagship projects.

OneGeology's aim is to create dynamic digital geological map data for the world. It is an international initiative of the geological surveys of the world who are working together to achieve this ambitious and exciting venture. Please follow the links in this section to find out more about OneGeology, what it is, why we are doing it and how such a big initiative can be achieved.

Objectives of OneGeology:

OneGeology's objectives are:

1. create dynamic digital geological map data for the world.
2. 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.
3. transfer know-how to those who need it, adopting an approach that recognizes that different nations have differing abilities to participate.
4. the initiative is truly multilateral and multinational and will be carried out under the umbrella of several global organizations.

Scope of OneGeology:

To portray geoscientific information (the cartography) normally shown on geologic maps including:

1. Geologic units
2. Earth materials (lithologies)
3. Geologic structures

GeoSciML Lithology vocabularies and the colors used to portray the lithologies

Integrating GeoSciML with OneGeology

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