Top facets for IEDA Thesauri

Scope definition

The IEDA thesauri contain structured terminology for petrology, geochemistry, sedimentology, oceanography, geochronology, and volcanology, and other stuffs.

Top facets list

1. Dataset types (term list)
2. Equipments (hierarchy)
3. Geographic names (hierarchy)
   Physiographic features (hierarchy)
   Tectonic settings (term list) combine these 3 physiographic gazetteer
4. Geologic ages (hierarchy)
5. Geologic processes
6. Institutions (hierarchy)
7. Journals (term list)
8. Languages (term list)
9. Methods (hierarchy)
10. Materials (hierarchy)
11. Programs (hierarchy)
12. Peoples (hierarchy)
13. Theme keywords (term list)
14. Sampling features(term list)
15. Science keywords (hierarchy)
16. Units (hierarchy)
17. Geologic unit (different from unit)

Details of the top facets

Dataset types (term list)

Including names for dataset type, such as collection,dataset, etc.

discussion: Resource types vs dataset types

ref.: Dublin Core Metadata Initiative (DCMI) type vocabulary

Equipments (hierarchy)

Including navigation type, launch type, platform type, etc.

discussion:

- equipments
  - instruments
    - in situ instruments
    - laboratory instruments
    - remote sensing instruments
  - platforms
    - navigation platform
      - GPS
    - ocean based platform
      - ship

ref.:

- instruments (GCMD's Science Keywords and Associated Directory Keywords)
- platforms (GCMD's Science Keywords and Associated Directory Keywords)
- matrEquipment, matrInstrument (SWEET Ontology)

Geographic names (hierarchy)

Represent the publications of the geological surveys of the world at the federal, state, and provincial levels.

discussion:

- Should they be extended to county and city level?

ref.:

- section 4 - geographic names (U.S. Geological Survey Library Classification)
- locations (GCMD's Science Keywords and Associated Directory Keywords)
- Geographic terms (GeoRef)

Geologic ages (hierarchy)

ref.:

section 4 - historical geology (U.S. Geological Survey Library Classification)

Geologic age (stratigraphic) terms (GeoRef)

Geologic processes

alteration

Institutions (hierarchy)

Including names for institutions.

discussion:

Which one is better, institutions, or organizations?

classified by the type of the overarching institutions, like university, laboratory, etc.

Journals (term list)

Including names for journals.

Languages (term list)

Including names for languages.

Methods (hierarchy)

discussion:

methods

sampling methods

collection methods

analysis methods

example:Trace metals in marine sediments by X-ray fluorescence (NOAA-NST)

Materials (hierarchy)

discussion:

Which classification system for minerals should be adopted?

the classification of "Strunz"

the classifications of "Dana"

the "Hey's Chemical Index of Minerals" (Dept. of Mineralogy, Natural History Museum, London)

Should chemistry be put into materials or be created as a top facet?

materials

rocks

igneous rocks

minerals

soils

sediments

elements

compounds

isotopes

ref.:sweet ontology
GeoRef Thesaurus

Physiographic features (hierarchy)

discussion:

physiographic feature is a physical characteristic of the land—a lake, a mountain, a river, a desert—that is recorded on a map.

Geographic features are the components of the Earth. There are two types of geographic features, namely natural geographic features and artificial geographic features. Natural geographic features include but are not limited to landforms and ecosystems. For example, terrain types, bodies of water, natural units (consisting of all plants, animals and micro-organisms in an area functioning together with all of the non-living physical factors of the environment) are natural geographic features. Meanwhile, human settlements, engineered constructs, etc. are types of artificial geographic features.

ref.:

http://www.usgs.gov/science/science.php?type=feature&term=816

Programs (hierarchy)

Including expedition, cruise, field program, etc.

Researchers (hierarchy)
Including names for researchers.
discussion:
Which one is better, authors, researchers, or scientists?
Should they be classified by nationality or field and research interested?

Tectonic settings (term list)

Theme keywords (term list)
ref.: ISO 19115 Topic Categories
GeoRef Categories/Subjects covered
example: farming, biota, boundaries,....,geoscientificInformation
geoscientificInformation, 008
information pertaining to the earth sciences
e.g., geology, minerals, earthquakes, landslides, volcanoes, soils, gravity, permafrost, hydrogeology, erosion
discussion: maybe expand theme keywords to two level, top level use ISO 19115 topic, second level we can create sub topics like geology, minerals, …
another option is creating a new top facet named sub topics…

Science keywords (hierarchy)
ref.:science and services keywords (GCMD's Science Keywords and Associated Directory Keywords)
example: "EARTH SCIENCE","OCEANS","MARINE VOLCANISM","ISLAND ARCS"
"EARTH SCIENCE","SOLID EARTH","ROCKS/MINERALS/CRYSTALS","IGNEOUS

ROCKS","IGNEOUS ROCK FORMATION"

Units (hierarchy)

Olsen, L.M., G. Major, K. Shein, J. Scialdone, S. Ritz, T. Stevens, M. Morahan, A. Aleman, R. Vogel, S. Leicester, H. Weir, M. Meaux, S. Grebas, C.Solomon, M. Holland, T. Northcutt, R. A. Restrepo, R. Bilodeau, 2013. NASA/Global Change Master Directory (GCMD) Earth Science Keywords. Version 8.0.0.0.0

Barbara A. Goodman, 2005. American Geoscience Institute (AGI) GeoRef Thesaurus. version 11

R. Scott Sasscer, 2010. U.S. Geological Survey Library Classification System.

Semantic Web for Earth and Environmental Terminology (SWEET) ontologies. version 2.3