

Geophysical Research Abstracts,  
Vol. 10, EGU2008-A-11390, 2008  
SRef-ID: 1607-7962/gra/EGU2008-A-11390  
EGU General Assembly 2008  
© Author(s) 2008



## Mediating Among GeoSciML Resources

**C. Baru, K. Lin**

San Diego Supercomputer Center  
University of California, San Diego  
9500 Gilman Drive  
La Jolla, CA 92093-0505, USA  
(baru@sdsc.edu)

GeoSciML has been designed as a markup language for the Geosciences, and accommodates the short-term goal of representing geoscience information associated with geologic maps and observations, as well as being extensible in the long-term to other geoscience data. It draws from many geoscience data model efforts, and from these establishes a common suite of feature types based on geological criteria (units, structures, fossils) or artefacts of geological investigations (specimens, sections, measurements). Supporting objects are also considered (timescale, lexicons, etc), so that they can be used as classifiers for the primary objects. GeoSciML provides a standard language in which to express schematic information for a given geoscience (data) resource, thereby removing a major hurdle to the sharing of data in this discipline.

We describe an approach for dealing with semantic heterogeneity across multiple GeoSciML-based resources. As part of the Geosciences Network (GEON, [www.geongrid.org](http://www.geongrid.org)) project, we have developed a system for semantic integration of geologic maps, which is now available via the GEON Portal at [portal.geongrid.org](http://portal.geongrid.org). The approach employed in that system can form the basis for mediation across multiple GeoSciML resources as well. Independent resources may subscribe to their own semantics (for example, in the case of rock classification, different rock classification systems may use different approaches for describing rocks). A mediator defines “mappings”, or “*articulations*”, among different semantic systems and uses this information

to form associations among concepts and relationships in such systems. The concepts utilized in the mediator may come from the semantics of one of the resources, or from a different source that is not used by any of the sources.

GEON has developed such a mediation scheme for geologic maps, using the *Multi-hierarchical Rock Classification* developed by Canada Geologic Survey (MRC) and the British Rock Classification (BRC) systems as examples. Using either MRC or BRC as the “reference” system (i.e. the “global conceptual view”), users can access data from different resources, regardless of the semantic system followed by the underlying data sources. We will describe the strategy for mediation among such GeoSciML-based resources and the challenges in mapping from one semantic system to another.