

# Summary of DMT'08 Discussion Sessions

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The DMT'08 meeting provided several opportunities for group discussion of technical issues. These sessions ranged from structured presentations by ESRI on enterprise data management and implementation of the FGDC geologic map symbol standard, followed by discussion periods, to informal discussions of cartographic techniques and methods of data preservation. Given the significance of the discussion topics, and the proportion of the meeting's time allotted to them, summaries are provided here.

1. ESRI Cartographic Representations for the FGDC Digital Cartographic Standard for Geologic Map Symbolization – A Preliminary Report

By Peter M. Kasianchuk and Charlie Frye (ESRI; [cfrye@esri.com](mailto:cfrye@esri.com))

In this session, ESRI provided an update on their work with the FGDC Geologic Data Subcommittee and the National Geologic Map Database (NGMDB) project to prepare an ArcGIS implementation of the FGDC geologic map symbol standard ([http://ngmdb.usgs.gov/fgdc\\_gds/](http://ngmdb.usgs.gov/fgdc_gds/)). This implementation, based on ESRI's Cartographic Representation rules, is intended to produce print-quality maps from a GIS. The purpose of this session was to show what was possible, and to engage the attendees during and after the session, in order to learn more about their production work and additional requirements. The presentation and accompanying poster also outlined a prototype workflow to convert ARC/INFO coverage data into an ArcGIS 9.2 geodatabase with geologic symbology stored within it.

2. ESRI Presentation and Demonstration on "Enterprise Management and Dissemination of Geographic Information"

By Steve Mulberry (ESRI; [smulberry@esri.com](mailto:smulberry@esri.com))

This session examined how ESRI approaches the enterprise notion of authoring, publishing, and consuming information through the use of web services. In part, this demonstration used geologic information from the Idaho Geological Survey. Discussion topics included: (a) recent enhancements to the enterprise geodatabase, including its support for PostgreSQL and the new spatial data types in SQL Server 2008; (b) publishing maps through ArcGIS server and leveraging geospatial processing through published models; and (c) the different development approaches for creating highly interactive mapping applications for use over the World Wide Web.

3. "Preservation of Geologic Data"

By Sheena K. Beaverson (Illinois State Geological Survey)

This session provided an opportunity for open discussion of issues related to management of geologic data collections. For example, what are particular characteristics of geologic data that must be considered in any data-preservation plan? How do we address inherent technological issues? Can we develop informed advice for agency policy makers? What needs to be done to ensure data are accessible? How do we secure support for curation of geologic data collections?

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### 4. "Cartographic Design AND Map Production"

Moderated by David R. Soller (U.S. Geological Survey)

A central purpose of the DMT meetings has been to provide a venue for sharing information and expertise, in order to improve the methods and efficiencies of digital cartography and geologic map production. This informal, 2-hour discussion session focused on these issues.

### 5. "Can We Develop National Standards and Guidelines for Geologic Map Databases?"

Moderated by David R. Soller (U.S. Geological Survey)

Throughout the past decade and more, geological surveys across the nation (and the globe) have collaborated on geologic map database design, science terminology, and data interchange standards. Progress has been significant, and was in part facilitated by the 12 annual DMT meetings. Should we now evaluate and perhaps refine these standards, and recommend guidelines to our geological surveys? This discussion session addressed those issues in detail. It was resolved to build upon previous work in order to converge on a limited set of standards and guidelines for consideration by USGS and AASG, and to review at the DMT'09 meeting the progress made toward that goal. The discussion session outline is provided in the Appendix.

## Appendix. Outline of DMT'08 Discussion Session "Can We Develop National Standards and Guidelines for Geologic Map Databases?"

Discussion of May 20, 2008

Moderated by David R. Soller (U.S. Geological Survey)

Throughout the past decade and more, geological surveys across the nation (and across the globe) have collaborated on geologic map database design, science terminology, and data interchange standards. Progress has been significant, and was in part facilitated by the 12 annual DMT meetings. Should we now evaluate and perhaps refine these standards, and recommend guidelines to our geological surveys?

Standards and guidelines can, together, help us deliver better and more usable geologic maps. *[See below, where standards and guidelines are defined.]* Technical standards (e.g., FGDC geologic map symbols, NADM-C1 data model, NADM-SLTT terminology, GeoSciML interchange format) are carefully defined by collaboration among experts and practitioners. These standards are "building blocks" that can be drawn together into a guideline for creating and disseminating geologic maps. Each agency then could define its own guideline, adapted to its resources and user requirements. We hope that by defining standards, and then recommending how they can be used in a guideline, there will be convergence among the geological surveys regarding creation and management of geologic databases and maps.

### This session's agenda:

1. Review of geologic map standards development (especially in North America) during the past decade.
2. Request for comments, additions, corrections.
3. Presentation of "strawman" guideline, including:
  - a. a minimum set of attributes for all geologic maps
  - b. standard science terminologies
  - c. standard stratigraphic nomenclature
  - d. standard database designs
  - e. a georeferenced image of the map
  - f. a data-transfer standard
  - g. a long-term data management plan.
4. Request for comment (e.g., concurrence, outrage, recommended changes).
5. Next steps – revise the strawman and recommend it as a guideline to AASG and USGS? To the NCGMP? Should we form a committee? Should we adjourn?

What's the difference between standards and guidelines? (adapted from Wikipedia):

- a technical standard is an established norm or requirement. It is usually a formal document that establishes uniform engineering or technical criteria, methods, processes and practices. [Worthy of note: a custom, convention, company product, corporate standard, etc. which becomes generally accepted and dominant is often called a de facto standard.]
- a guideline is any document that aims to streamline particular processes according to a set routine. By definition, following a guideline is never mandatory (protocol would be a better term for a mandatory procedure). Guidelines are an essential part of the larger process of governance. Guidelines may be issued and used by any organization (governmental or private) to make the actions of its employees or divisions more predictable, and presumably of higher quality.

### Links to some standards, guidelines, and resources:

- FGDC Geologic Data Subcommittee – [http://ngmdb.usgs.gov/fgdc\\_gds/](http://ngmdb.usgs.gov/fgdc_gds/) (see the cartographic standard, and proposal for Standard Geologic Data Model)
- ESRI Geology Data Model – <http://support.esri.com/index.cfm?fa=downloads.dataModels.filteredGateway&dmid=30>
- NGMDB resource page for standards and guidelines – <http://ngmdb.usgs.gov/Info/standards/>
- Resources for Digital Cartography (prototype site) – <http://ngmdb.usgs.gov/Info/cartores/>

## We Took a First Step in 1999

In a discussion session at DMT'99, we addressed the need for general guidelines on the files and documentation that should be included in digital map publications. That session began with a review of the newly enacted USGS publication policy for digital map products. We determined that a similar specification could be offered as a guideline to the broader community of geological surveys. The discussion went point-by-point through the draft guideline, which had been prepared by an AASG/USGS Working Group. We reached consensus in that session, and the resulting guidelines (<http://pubs.usgs.gov/of/1999/of99-386/soller2.html>) were later approved by AASG and included in the STATEMAP Request For Proposals.