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Data Management and Interchange

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Data Management and Interchange

WG 3

Database Languages

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1. Background

During the interval 2002-12-07 – 2002-12-11, I had the opportunity to attend parts of the Plenary Meeting of SC34, entitled "Document Description and Processing Languages", as well as parts of the meetings of one of its Working Groups (WG3, "Information Association").

The Area of Work of SC34 is described as:

Standardization in the field of document structures, languages and related facilities for the description and processing of compound and hypermedia documents, including:
—languages for describing document logical structures and their support facilities
—languages for describing document-like objects in web environments
—document processing architecture and formatting for logical documents
—languages for describing interactive documents
—multilingual font information interchange and related services
—final-form document architecture and page information interchange
—hypermedia document structuring language and application resources
—API's for document processing

The projects and standards for which SC34 and its Working Groups are responsible include:

- ISO 8879, *Information Processing — Text and office systems — Standard Generalized Markup Language (SGML)*

- ISO TR 9544, *Information Processing — Text and office systems — Computer-assisted publishing — Vocabulary*

- ISO TR 10037, *Information technology — SGML and text entry systems — Guidelines for SGML Syntax-directed editing systems*

- ISO 9069, *Information technology — SGML support facilities — SGML Document Interchange Format (SDIF)*

- ISO TR 9573, *Information technology — SGML support facilities — Techniques for using SGML*, including *Part 9: Using SGML for Computer to Computer Interchange*, *Part 11: Application at ISO Central Secretariat for International Standards and Technical Reports*, and *Part 13: Public Entity Sets for Mathematics and Science.*

- ISO/IEC 9070, *Information Processing — SGML Support Facilities — Registration Procedures for Public Text Owner Identifiers*

- ISO/EC 13673, *Information Technology — Conformance Testing of SGML Systems*

- ISO/IEC 10179, *Information Technology — Text Composition — Document Style Semantics and Specification Language (DSSSL)*

- ISO/IEC 10180, *Information Technology — Text Composition — Standard Page Description Language (SPDL)*

- ISO/IEC 9541, *Information Technology — Font Information Interchange*, including *Part 1: Architecture*, *Part 2: Interchange Format*, *Part 3: Glyph Shape Representation*, and *Part 4: Application-specific requirements*

- ISO/IEC 10036, *Information Technology — Font Information Interchange — Procedure for Registration of Font-Related Identifiers*

- ISO/IEC TR 15413*, Information Technology — Font Services — Part 1: Abstract Service Definition*

- ISO/IEC 10743, *Information Technology — Standard Music Description Language (SMDL)*

- ISO/IEC 10744, *Information Technology — Hypermedia/Time-based Structuring Language (HyTime)*

- ISO/IEC 13240 *Information Technology — Interchange Standard for Multimedia Interactive Documents (ISMID)*

- ISO/IEC 13250, *Information Technology — SGML Applications — Topic Maps*

- ISO/IEC 15445, *Information Technology — ISO-HTML*

The Working Groups of SC34 are:

- WG1 — Markup Languages; Convenor: Charles Goldfarb (of SGML fame) — SGML, SDIF, and related work

- WG2 — Information Presentation; Convenor: Yushi Komachi — DSSSL, fonts, and related work

- WG3 — Information Association; Convenor: Steve Pepper — HyTime, Topic Maps, and related work

2. Liaison Report

During the times when I was present, I noted several pieces of information that might be of interest to SC32.

1) Effective 1 December (it was not entirely clear whether the year was 2002 or 2003, but I believe that 2002 was intended), ANSI will no longer fund the Secretariat for SC34. A trade organization, Idealliance, is considering whether to fund the Secretariat. As with any ISO SC, failure to find funding for a Secretariat places the SC's existence in jeopardy.

2) The SC34/WG1 project (not listed above, since it is not documented on the SC34 web site at http://www.jtc1.org) to produce a standard for RELAX NG (an XML metadata description language analogous to, but not compatible with, W3C XML Schema) proceeds apace. It will apparently be a multi-part standard (I think I heard mention of up to 9 parts!), under the umbrella name "DSDL".

   This project does not directly affect any SC32 project, particularly 9075-14, SQL/XML, because it is not aligned with any W3C effort. However, WG3 should be aware of the project in order to determine whether some future revision of SQL/XML should have a relationship with DSDL.

3) The hot topic for SC34/WG3 at this meeting was Topic Maps. Some SC32 participants may know this to be a way of adding "intelligence" to the organization of web sites and other collections of information, represented in XML. Unlike "ordinary" XML, which is a strict hierarchy…a tree structure, Topic Maps

are multi-dimensional network descriptions, represented in XML (making significant use of links). WG3 is initiating a project to develop a standard Topic Map Query Language (TMQL) and a Topic Map Constraint Language (TMCL).

I asked whether XQuery had been considered as a candidate for TMQL; the answer was, in summary, "No" because XQuery is too closely tied to the tree-structured nature of XML documents. SQL was also felt to be inappropriate, even with the addition of SQL/XML. (It was gratifying to learn that SC34 is aware of SQL/XML.) Nonetheless, there are certain analogies with both XQuery and SQL, since the requirements for TMQL include a declarative language that is highly amenable to optimization, a conscious intent to ensure that it can be mapped onto SQL or (at least) the relational algebra operators underlying SQL implementations, and closure for many operations (queries on Topic Maps can produce new, sometimes virtual, Topic Maps).

Progression of the work on TMQL and TMCL is on hold, pending completion of a design for a data model (including both a Reference Model and a Standard Application Model). TMQL is planned to comprise a "core" and multiple modules, which sounds a bit like the design of multi-part SQL and its conformance clause that supports Core SQL and a number of additional packages and features.

WG3 is also working on the design for a facility that is "XSLT-like" in that it can be used to transform Topic Maps into other Topic Maps or other formats (including HTML). This facility is likely to be part of TMQL. Another expected specification is for an XPath-like facility that might be called "TMPath".

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