

Requirements & Initial Steps Towards an OOR for Standards Management

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motivation

∞ Increasing recognition at OMG

- Information architecture should have a first class role in systems & software engineering (e.g., via Information Management Metamodel (IMM), Ontology Definition Metamodel (ODM))
- Members need standard vocabularies, canonical definitions, that can be used across modeling activities & paradigms
- Achieving agreement on terminology can be even harder than reaching consensus on software engineering issues
- Focus should be on high-value, cross-platform, cross-domain, cross-modeling paradigm vocabularies for use in systems/software engineering

history

- ∞ **Early 2008 - Ontology PSIG RFI for input on an OOR for publication, navigation of vocabularies & ontologies developed at OMG**
- ∞ **Presentations on BioPortal & Collaborative Protégé, Model Driven Solutions' Enterprise Knowledge Base at December 2008 OMG meeting in Santa Clara**
- ∞ **Well-attended Semantic Information Day in March 2009 emphasized need, raised awareness**
- ∞ **Parallel work on a cross-modeling paradigm (SBVR, ODM/OWL, “vanilla UML”) approach to representation of dates & times would inform requirements for the OOR**
- ∞ **Recent work on quantities & units for SysML & Ontolog is influencing date/time effort**
 - **Moving toward more general solution to support SysML, BPMN, SoaML, in addition to SBVR**
 - **Requires synchronization with broader solution for UoM**

impact on OOR

∞ Solution for OMG

- Support vocabulary/ontology management for use with multiple modeling paradigms
- UML, ODM (RDFS, OWL, CL/CLIF), SBVR, IMM/ER, ISO STEP (EXPRESS)
- Use cases for publication/usage are needed

∞ Result would be

- Single OOR, small number of vocabularies initially
- Higher number of modeling paradigms & mappings from the outset
- Collaborative development capabilities will be critical
- Ability to share metadata in addition to models is essential
- Strong governance, evolution, documentation support built in
- Use case development, educational materials will be needed, both for OOR and individual vocabularies

∞ Support/push from member organizations will drive implementation

research challenges

- ∞ **Use cases to drive metadata architecture for the OOR**
 - Member requirements for metadata to be provided along with vocabularies varies dramatically
- ∞ **Heavy support for linked references, design decisions & rationale anticipated**
 - what kinds of decisions/rationale should be included
 - how do we capture that during the vocabulary development process without adding heavy burden to an already cumbersome standards process
- ∞ **Development of governance model, processes to support vocabulary development**
- ∞ **Even with common metadata, specified via a registry framework such as ISO 11179, reuse is challenging without “design intent”**

lessons learned from ISO STEP (reminder)

- ∞ Designing for reuse is critical, despite difficulties in specifying what that means
 - Results will include smaller clusters of models mapped to one another, or perhaps imported by one another to create larger federated models
 - Requires processes for determining how/when to split models or model groups as scope increases
 - Calls for tools that can manage and browse small groups of inter-related models
 - Requires a notion similar to a 'make file', for pulling smaller clusters together to create larger models, which themselves may be reusable in broader context

- ∞ Current STEP (STandard for the Exchange of Product Data) repository includes over 400 modules
 - Communities have built additional repositories around core STEP standards to add business-specific extension/content/user guides
 - There is a quality/integration review and signoff of everything that goes into the sharable repository, which frequently finds problems

status of related work

- ∞ **Modeling Standards -**
 - ODM 1.0 was published in May 2009; 1.1 revision anticipated in mid 2010 (see <http://www.omg.org/spec/ODM/1.0/>)
 - IMM Revised Submission anticipated 2/2010 (Jacksonville, FL Meeting, 3/22-26); RFP is available at <http://www.omg.org/cgi-bin/doc?ab/05-12-02>
 - SBVR 1.0 was published in January 2008; 1.1 revision anticipated in early 2010 (see <http://www.omg.org/spec/SBVR/1.0/>)
- ∞ **Date/time Vocabulary - Revised Submission currently planned for Long Beach (12/2009); RFP is available at <http://www.omg.org/cgi-bin/doc?bmi/08-03-02>**
- ∞ **SysML UoM - initial version available as QUDV appendix of SysML standard (see <http://www.omg.org/spec/SysML/1.1/>)**

next steps

- ∞ **Continued discussion in Long Beach of**
 - Open vocabulary requirements for UoM, Dates & Times, related RFPs
 - Requirements for managing these once available for publication

- ∞ **Time frame for prototyping repository & additional requirements development will depend on**
 - Model management needs
 - Recognition that other standards & related artifacts could be managed similarly