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

** courtesy David Price, EuroSTEP*

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