Object Mgmt Group
Ontology Definition Metamodel

Status

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and representatives from DSTC, IBM, Sandpiper
OMG Basics

Object Management Group is the largest and longest standing not-for-profit, open-membership consortium which develops and maintains computer industry specifications.

- **Founded April, 1989**
- **International Software Standards Consortium Headquartered in the U.S.**
- **Approximately 600 Member Companies**
- **Source and caretaker of specifications for:**
  - Model Driven Architecture (MDA)
  - Meta Object Facility (MOF)
  - Unified Modeling Language (UML)
  - XML Metadata Interchange (XMI)
  - Common Warehouse Metamodel (CWM)
  - CORBA including Realtime, Embedded, Fault Tolerant
  - CORBA services, CORBA facilities

Next – Ontology Definition Metamodel
OMG Technical Plenaries

Board of Directors

**Architecture Board (AB)**
- Liaison SC
- Object & Reference Model SC
- Business Rules SIG
- Java Community Process SIG
- MDA Users SIG
- Security SIG
- Test & Val. SIG
- Web Services SIG

**Platform (PTC)**
- Product Std Def SC
- Architecture and Design Task Force (ADTF)
  - MARS TF
  - Real-time TF
- **Ontology SIG**
  - Agent SIG
  - Japan SIG

**Technical Committees**

**Domain**
- Business Enterprise TF
- C4I TF
- Finance TF
- Healthcare TF
- Life Sciences TF
- Space TF
- Telecom TF
- Transport. TF
- eGov SIG
- S/W Radio SIG
- Systems Engineering...
OMG Adoption Process

Where is the ODM now?

OMG Technical Plenaries
meet at Technical Meetings
which occur five times annually.

OMG is in revision.

Responses, Letters of Intent from Industry

Request for Information

Request for Proposal

Initial Submission Evaluation and Revision

Final Submission

TC Recommendation

PTC

Board Approval

Finalization and Revision

AB

Subgroup Roadmap

Onto SIG
Ontology Definition Metamodel RFP

- Issued by ADTF
  - As Document ad/2003-03-40 *
  - Authored by members of the Ontology PSIG

- Objectives of the Effort
  - Development of ontologies using UML modeling tools
  - Implementation of ontologies in the W3C Web Ontology Language OWL
  - Forward and reverse engineering for ontologies

ODM RFP Scope of Proposals Sought

3 components required:

- **Metamodel**: A standard meta-model for ontology modeling
- **Profile**: A UML2 Profile for depicting Ontologies
- **Mapping**: With at least mappings
  - Between ODM and the profile
  - Between ODM and the W3C OWL DL

Optional additional content
ODM RFP Initial Submissions

Initial Submissions and ADTF Presentations on OMG document server at:

http://www.omg.org/cgi-bin/apps/doc?

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<thead>
<tr>
<th>Company</th>
<th>Date</th>
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<tr>
<td>DSTC</td>
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<td>Gentleware / ATT</td>
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<td>Sandpiper Software</td>
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Note: significant updates are in progress
## ODM RFP Initial Submissions Overview

<table>
<thead>
<tr>
<th>Submitter</th>
<th>ODM</th>
<th>Profile</th>
<th>Mapping(s)</th>
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<tbody>
<tr>
<td>DSTC</td>
<td>Web-KB based; beyond minimum required</td>
<td>Not provided</td>
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<tr>
<td>Gentleware</td>
<td>Built from UML2 infrastructure</td>
<td>Default behavior for stereotype packages plus 14 specific stereotypes.</td>
<td>Mapping to OWL/DL based on ODM entity and stereotypes.</td>
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<td>Reuses UML infrastructure meta-model.</td>
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<td>IBM</td>
<td>Corresponds directly to OWL constructs</td>
<td>Each ODM entity type is also a UML stereotype</td>
<td>Complete one-to-one mapping of ODM to OWL/DL</td>
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<tr>
<td>Sandpiper Software</td>
<td>Supports FOL and OWL; beyond minimum required</td>
<td>Subset draft provided, implicit in Visual Ontology Modeler</td>
<td>Not provided, but implicit in Visual Ontology Modeler</td>
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</tbody>
</table>
UML Profiles Example
Ontology Description - Wines and Foods OWL ontology ex.

IBM Proposal

Gentleware Proposal

Packages are ontologies, properties are dependencies and assoc…. 
UML Profiles Example
Class Descriptions

IBM Proposal

OWL/DL as constraint language

Gentleware Proposal

Small differences – collections, enumerations
UML Profiles Example
Property Descriptions

Winery <<Class>>
producesWine <<ObjectProperty>>
hasMaker <<FunctionalProperty>>
inverseOf +hasMaker

Wine <<instanceOf>> inverseOf (from OWL)
hasMaker <<property>> FunctionalProperty (from OWL)
producesWine <<property>>

Gentleware Proposal

IBM Proposal
**ODM RFP Specific Schedule**

- March 28th 2003 – RFP Released
- August 18th - Initial Submissions
- September 9th - Presented to ATF Plenary

- March 29th 2004 - Revised Submissions deadline
- April 26-30th 2004 - Revised Presentations
- June 2004 - ADTF & PTC votes to Recommend
- August 2004 –Board of Directors votes to Adopt

A conservative schedule would slip this one meeting cycle, moving final adoption in to November of 2004.
**ODM RFP Submission Status**

- **Initial submitters have agreed to combine initial submissions and to provide one integrated revised submission.**
- **They are working with Ontology SIG to define:**
  - Use Cases for ontology aware applications and UML based ontology development.
  - Metamodel features and requirements.
  - Layering of the proposed specification.
  - A unified, revised submission response.

- **Follow progress and comment**
  - send comments to ontology@omg.org
  - subscribe request to request@omg.org