AT&T

Object Mgmt Group
Ontology Definition Metamodel Status

Lewis Hart   *Deborah McGuinness*

AT&T   *Stanford KSL*

With inputs from:
  Evan Wallace - NIST

  Nicole Glazen - OMG

  Fred Waskiewicz – OMG

  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
  - CORBAservices, CORBAfacilities

Next – Ontology Definition Metamodel

OMG Technical Plenaries

Board of Directors

Technical Committees

Architecture Board (AB)

Platform (PTC)

Domain

Liaison SC
Object & Reference
   Model SC

Business Rules SIG
Java Community
   Process SIG
MDA Users SIG
Security SIG
Test & Val. SIG
Web Services SIG

Product Std
 Def SC

Architecture and Design Task Force (ADTF)
MARS TF
Real-time TF

Ontology SIG
Agent SIG
Japan SIG

...

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?

Board Approval

TC Recommendation

PTC

AB

Finalization and Revision

Responses, Letters of Intent from Industry

ADTF

Final Submission

Request for Information

Initial Submission Evaluation and

ODM is in revision.

Onto SIG

Request for Proposal

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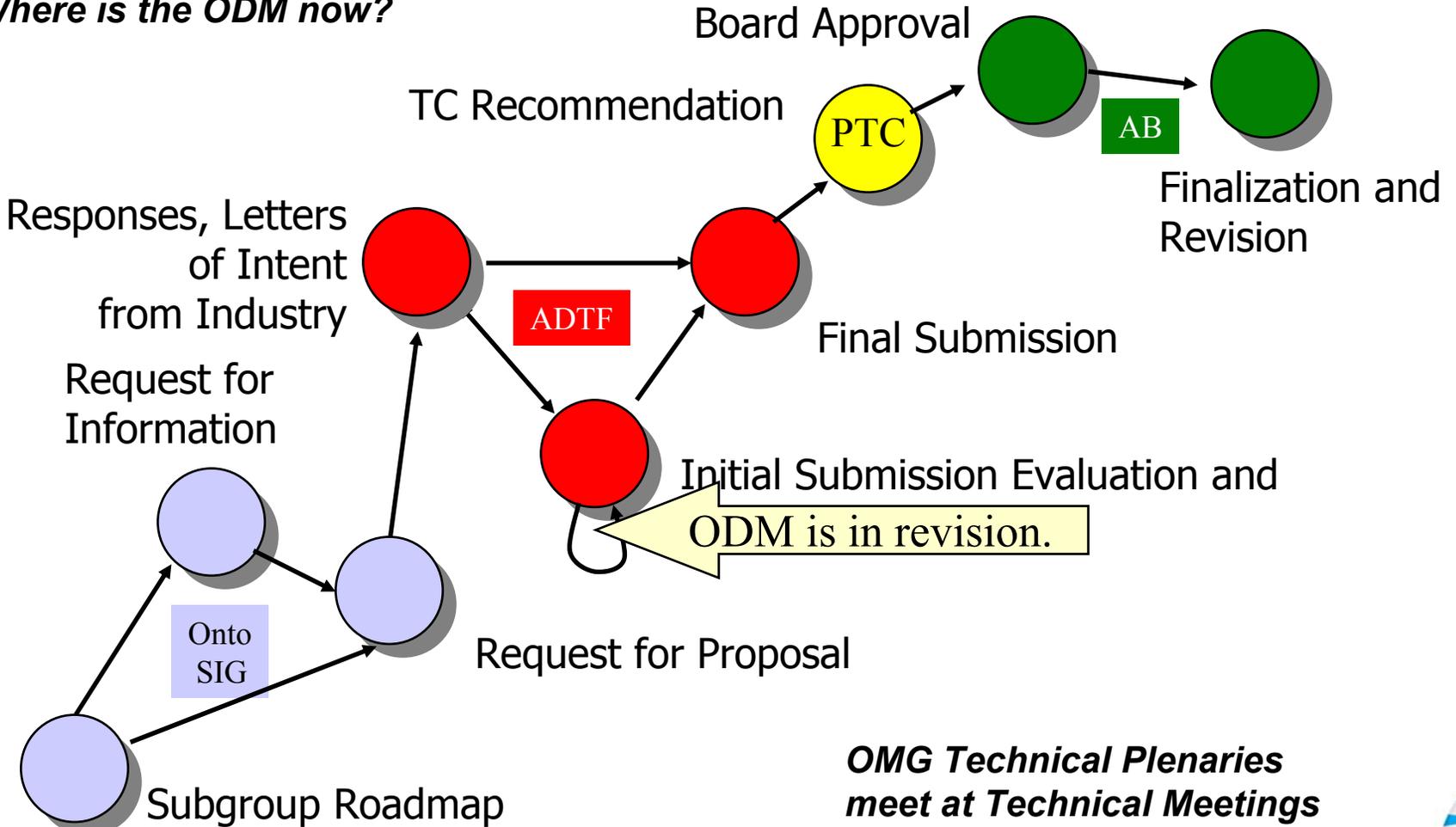
OMG Technical Plenaries meet at Technical Meetings which occur five times annually.

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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

* Full URL http://www.omg.org/cgi-bin/apps/doc?ad/2003-03-40

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NIST National Institute of Standards and Technology • Technology Administration • U.S. Department of Commerce

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
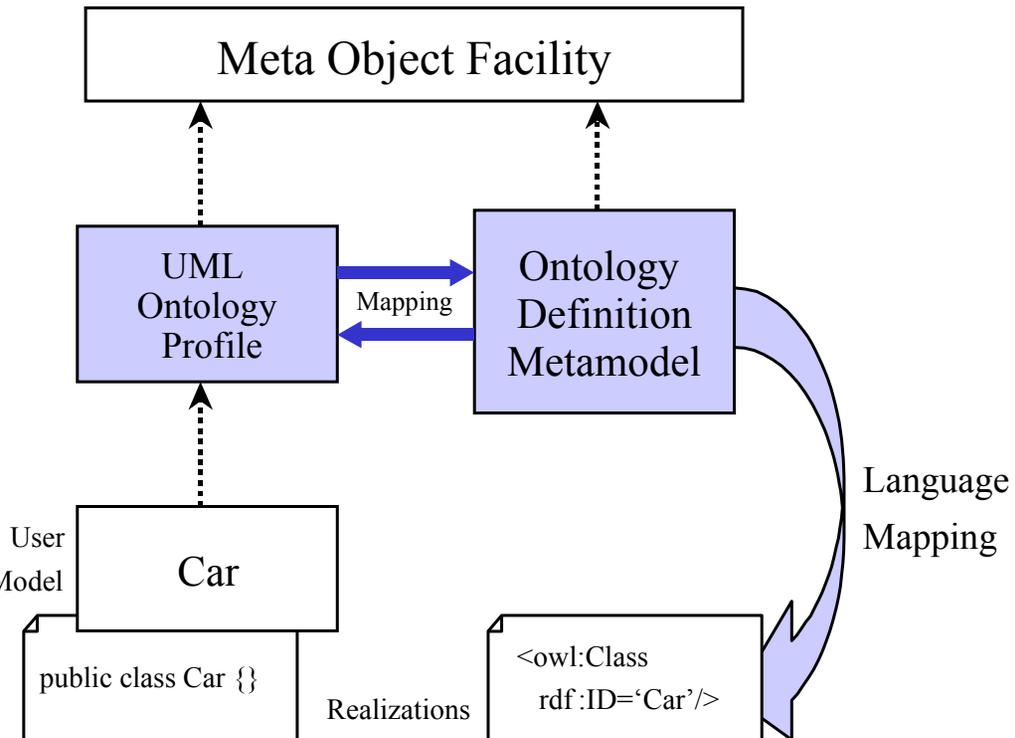
Optional additional content

Meta Object Facility

UML Ontology Profile

Mapping

Ontology Definition Metamodel

Language Mapping

User Model

Car

public class Car {}

Realizations

<owl:Class rdf:ID='Car'/>

National Institute of Standards and Technology • Technology Administration • U.S. Department of Commerce

ODM RFP Initial Submissions

Initial Submissions and ADTF Presentations on OMG document server at:

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

| DSTC	ad/03-08-01	ad/03-09-03
Gentleware / ATT	ad/03-08-09	ad/03-09-04
IBM	ad/03-07-02	ad/03-09-05
Sandpiper Software	ad/03-08-06	ad/03-09-06

Note: significant updates are in progress

ODM RFP Initial Submissions Overview

Submitter	ODM	Profile	Mapping(s)
DSTC	Web-KB based; beyond minimum required *	Not provided	Not provided
Gentleware AT&T	Built from UML2 infrastructure Reuses UML infrastructure meta-model.	Default behavior for stereotype packages plus 14 specific stereotypes. *	Mapping to OWL/DL based on ODM entity and stereotypes. *
IBM	Corresponds directly to OWL constructs	Each ODM entity type is also a UML stereotype *	Complete one-to-one mapping of ODM to OWL/DL *
Sandpiper Software	Supports FOL and OWL; beyond minimum required *	Subset draft provided, implicit in Visual Ontology Modeler	Not provided, but implicit in Visual Ontology Modeler

UML Profiles Example
Ontology Description - Wines and Foods OWL ontology ex.
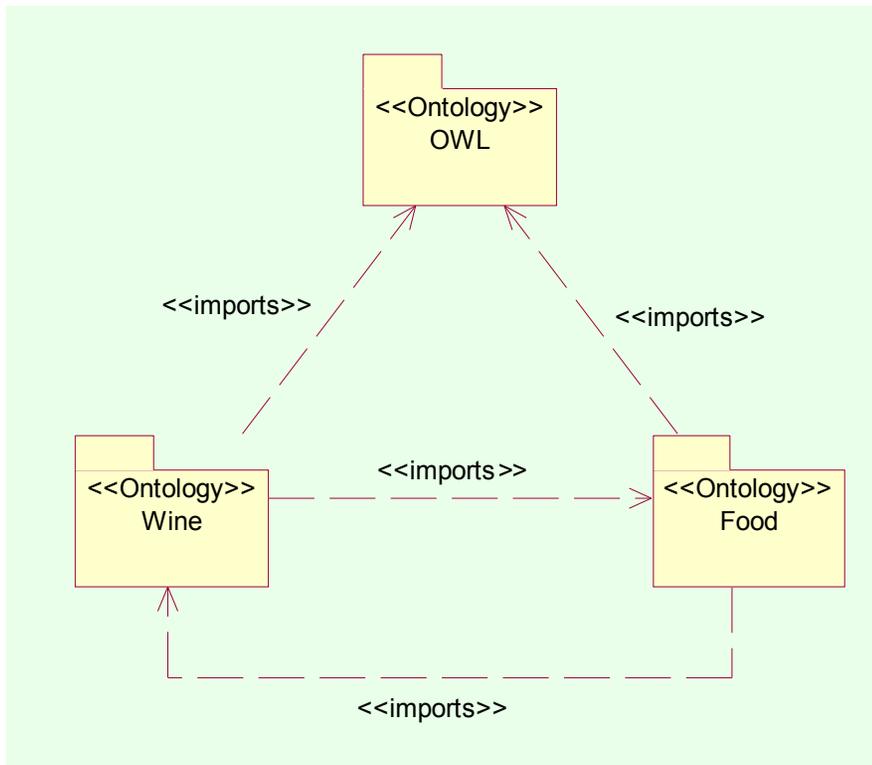

IBM Proposal
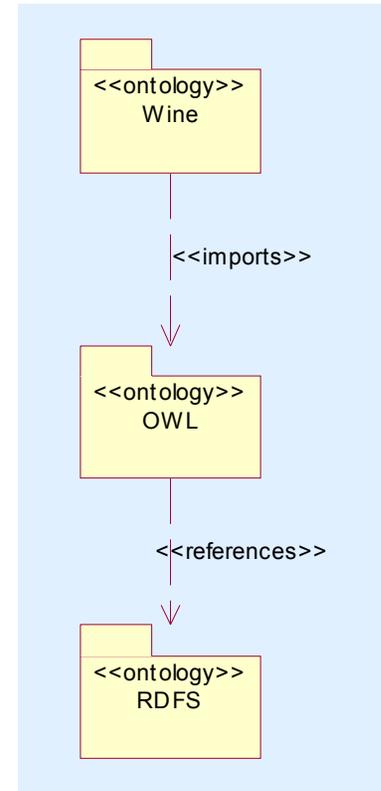
Gentleware Proposal

Packages are ontologies, properties are dependencies and assoc….

UML Profiles Example
Class Descriptions

OWL/DL as constraint language
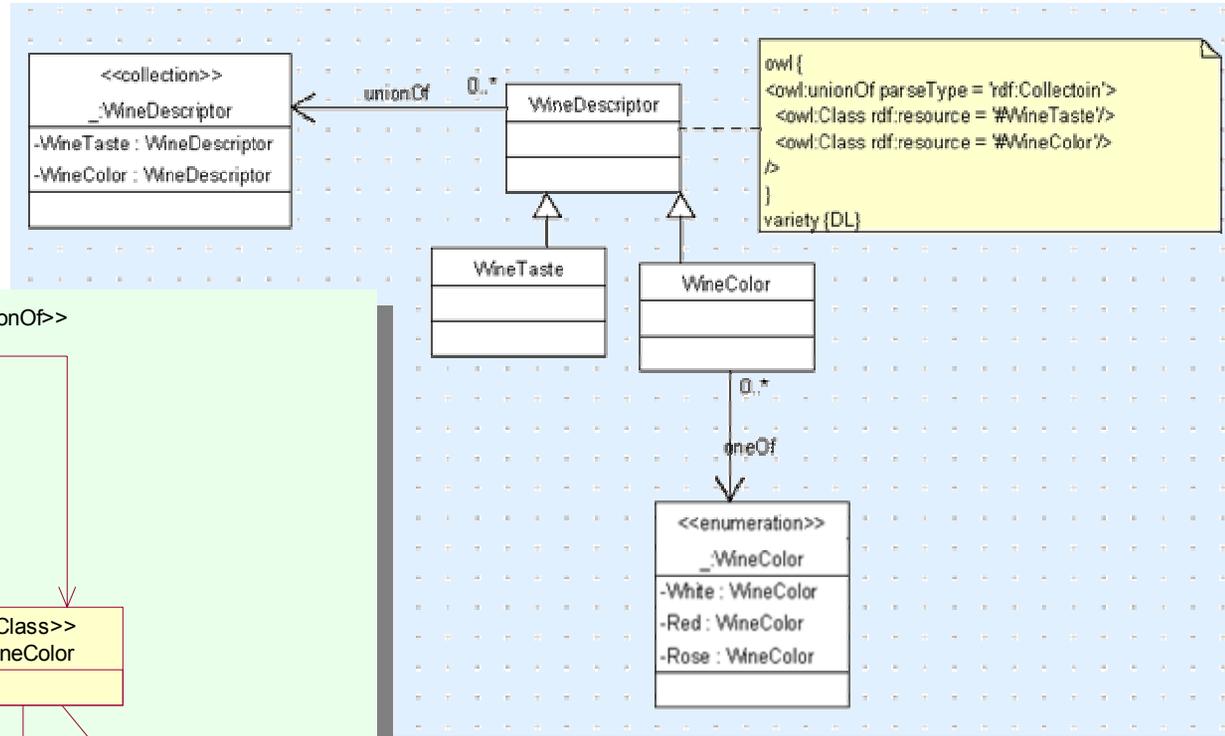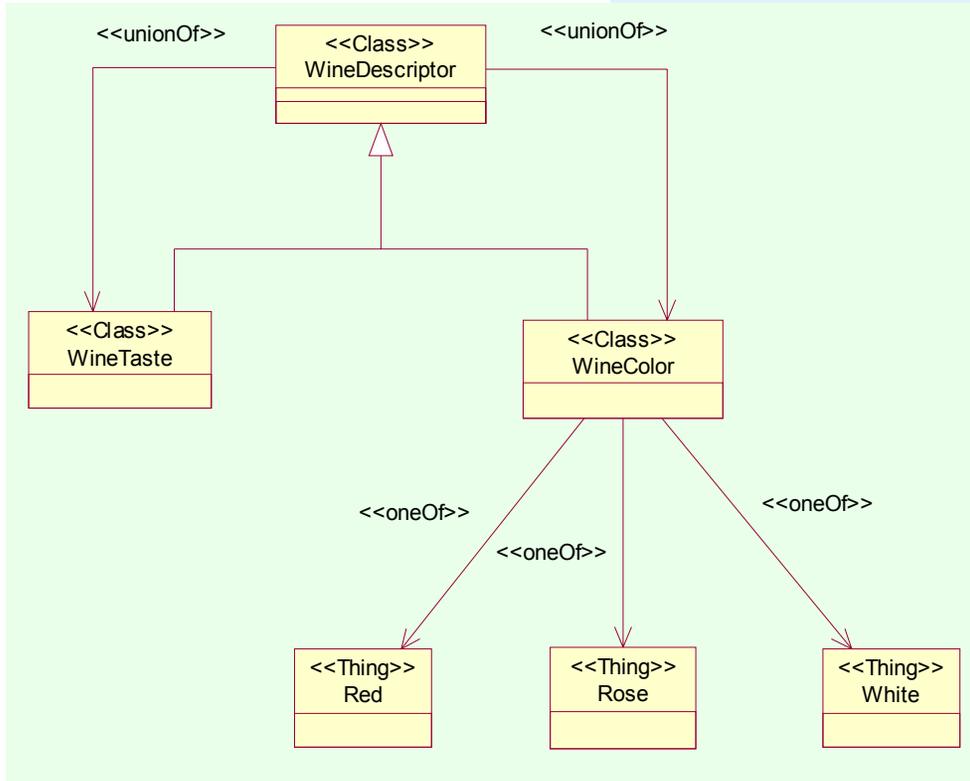
IBM Proposal

Gentleware Proposal

Small differences – collections, enumerations

UML Profiles Example
Property Descriptions
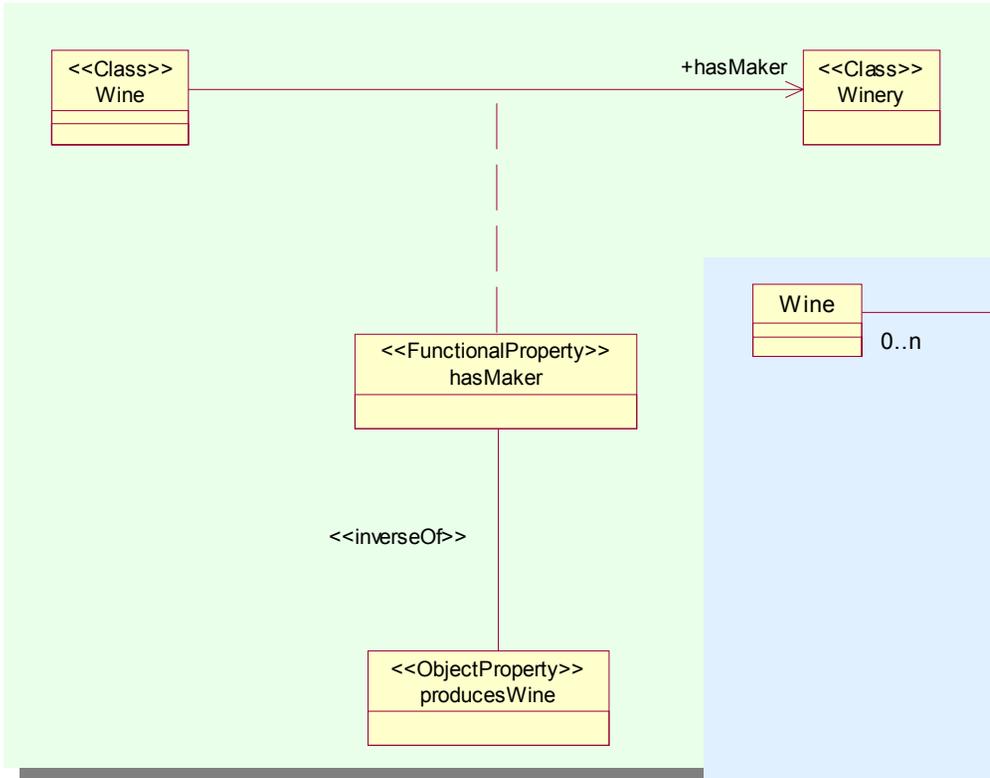
Gentleware Proposal

IBM Proposal
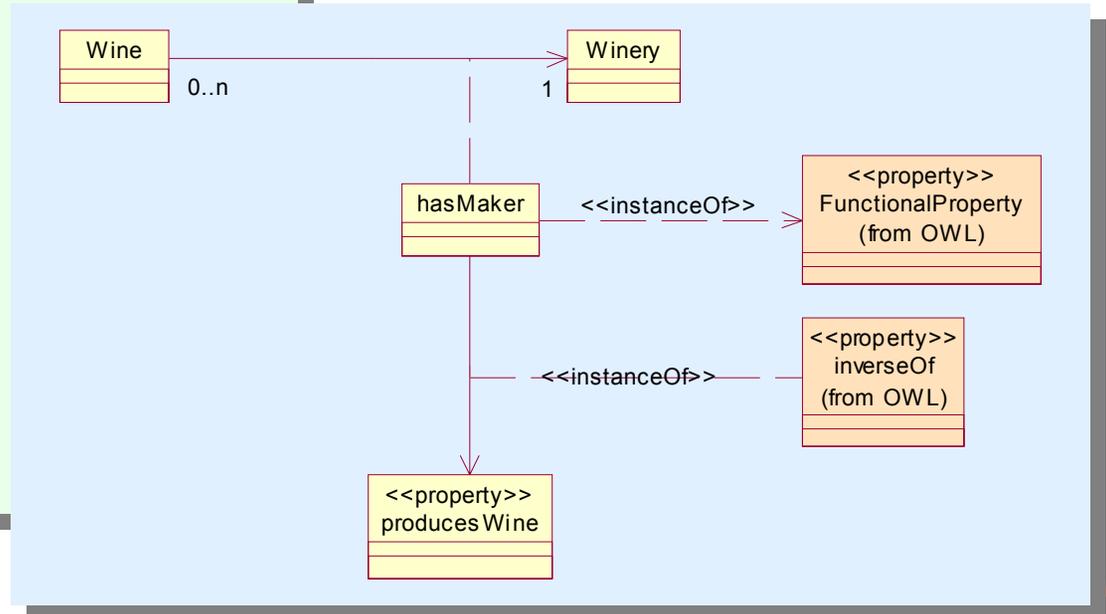
ODM RFP Specific Schedule

- **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