OMV
Ontology Metadata Vocabulary

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Motivation

- **Finding and re-using** ontologies often difficult
  - Where can I find an ontology?
  - Who has developed a particular ontology?
  - For which domain / application?
  - ...

- **Metadata Standard required to improve and ensure**
  - Interoperability & exchange
  - Access & usability
Ontology Metadata Vocabulary

- OMV is … a metadata schema
  - Captures reuse-relevant information about an ontology

- OMV consists of … core and extensions
  - OMV Core: fundamental information about an ontology and its life cycle
  - OMV Extensions: detailed account on specific phases of an ontology life cycle

- OMV is designed … as an ontology

- OMV is realized … in OWL DL
OMV organizes the metadata elements according to:

- the type and purpose of the contained information as follows:
  - General
  - Availability
  - Applicability
  - Format
  - Provenance
  - Relationship
  - Statistics

- the impact on the prospected reusability of the described ontological content as follows:
  - Required
  - Optional
  - Extensions
Further Classes:

- Party
  - Organisation
  - Person
- LicenseModel
- Knowledge Representation Formalism
- OntologyType
- OntologySyntax
- OntologyLanguage
- OntologyEngineeringTool
- …
OMV Extensions

- Current extensions
  - Mappings between ontologies
  - Changes to ontologies (e.g. differences between versions)
  - Multilinguality
  - Peer metadata

- Developers are free to create new domain specific extensions
Availability of OMV

- Website http://omv.ontoware.org/
  - Download of the ontology
  - Technical Report
  - Additional information

- OMV Ontology hosted at Ontoware, a Source Code Management system for ontologies and ontology-based open source software
NeOn: An FP6 Integrated Project

- 14 diverse European partners from 6 EU countries
  - corporations and SMEs
  - not-for-profit, research
  - ...and universities

- €14.7 mil project budget over 4 years to:
  - create an open, service-oriented infrastructure for developing and managing dynamic, networked and contextualized ontologies
  - support and sustain the community by means of an extensible NeOn Toolkit for engineering networked ontologies
  - bootstrap a methodology and a set of guidelines enabling ordinary users to take advantage of the NeOn tools and NeOn infrastructure
Key Issues in NeOn

- **Reuse as a prevailing strategy**
  - ability to bring in information from the semantic web
  - ability to support application development integrating multiple ontologies
  - ability to manage relationships between ontologies over time

- **Collaboration at large scale**
  - support for distributed teams of ontology engineers and domain specialists

- **Contextualized ontologies**
  - contextualization of modelling choices in terms of user groups, experiences, access rights, etc.

➢ *Comprehensive ontology metadata critical for all of the above!*
Applications of OMV

- Interoperability on (meta-)data level

- Interoperability on tool level
  - Common interfaces to registry, repository
  - Proposal for OMV API existing

- Example 1: Ontology Registries in NeOn
  - Oyster as Open Source implementation
  - Centrasite as commercial product of Software AG

- Example 2: Watson - Gateway to the Semantic Web
  - Web interface for searching ontologies and semantic documents
OMV described using OMV in Oyster (eating its own dogfood ;-)

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    xmlns:rdf-resource="http://www.w3.org/2000/01/rdf-schema#Resource">
    <rdf:Description rdf:about="http://omv.ontoware.org/2005/05/omv">
        ...<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#Class"/>
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        <omv:ImplementationAcronym>OMV</omv:ImplementationAcronym>
        <omv:naturalLanguage>English</omv:naturalLanguage>
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        <omv:ontologySyntax>OWL/XML</omv:ontologySyntax>
        <omv:versionInfo>2.3</omv:versionInfo>
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        <omv:modificationDate>September 2007</omv:modificationDate>
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        <omv:implementationDomain>Directories and Computers</omv:implementationDomain>
        <omv:implementationCreator>Raul Palma and Peter Haase and Jens Hartmann</omv:implementationCreator>
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    </rdf:Description>
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<td>Wine Ontology</td>
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WATSON – Ontology Search

   - http://kmi-web05.open.ac.uk:81/cache/3/0a7/e42/3ae7f43/0d6d73ba7b3b/5832fa536992982b3#Wine
   - http://www.example.org/wine.owl

   - http://www.w3.org/2002/03owl/miscellaneous/consistent001#Wine

   - http://kmi-web05.open.ac.uk:81/cache/3/e42/3ae7f43/0d6d73ba7b3b/5832fa536992982b3#Wine
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   - http://kmi-web05.open.ac.uk:81/cache/3/e42/3ae7f43/0d6d73ba7b3b/5832fa536992982b3#wineType

4. http://www.csd.abdn.ac.uk/research/AgentCities/ontologies/restaurant-v4
   - http://www.csd.abdn.ac.uk/research/AgentCities/ontologies/restaurant-v4#Wine
   - http://www.csd.abdn.ac.uk/research/AgentCities/ontologies/restaurant-v4#region
   - http://www.csd.abdn.ac.uk/research/AgentCities/ontologies/restaurant-v4#priceByGlass
   - http://www.csd.abdn.ac.uk/research/AgentCities/ontologies/restaurant-v4#wineType

   - http://potato.cs.man.ac.uk/ontologies/boozewine#WINE
   - http://potato.cs.man.ac.uk/ontologies/boozewine#ICE-WINE
   - http://potato.cs.man.ac.uk/ontologies/boozewine#RED-WINE
   - http://potato.cs.man.ac.uk/ontologies/boozewine#WINE-COLOR
   - http://potato.cs.man.ac.uk/ontologies/boozewine#WINE-BODY
   - http://potato.cs.man.ac.uk/ontologies/boozewine#TABLE-WINE
   - http://potato.cs.man.ac.uk/ontologies/boozewine#WINE-REGION
Details for http://www.example.org/wine.owl

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While building an ontology with the Neon toolkit

Find descriptions of existing entities in Web ontologies

Integrate these descriptions into the edited ontology

Thus allowing knowledge reuse at the scale of the Semantic Web

In one simple, integrated, and interactive tool
OMV Consortium

- **History:**
  - Originally, OMV was developed within the Knowledge Web project by UPM, AIFB, TU Berlin
  - OMV consortium was founded to sustain developments of OMV
  - At the moment, OMV is mainly further developed in the NeOn project and by Stanford BMIR

- Several organizations have expressed interest in using and contributing to OMV
  - Stanford BMIR intend to use OMV in Protege and their Bioportal ontology repository
  - OMG to use it in their ontology repository

- Thus far, the OMV consortium is not a real legal entity

- Different alternative models for standardization being discussed:
  - De-facto standard via support by Protege and NeOn
  - Standardization within STI2 or NeOn Foundation
  - OMG PSIG
Summary

- OMV as a vocabulary to represent metadata about ontologies

- Several applications using OMV already available

- Development by OMV Consortium
  - Open for everyone to join and contribute
  - Standardization model still being discussed