Ontology Repository Research Issues

Joint Ontolog-OOR Panel Discussion

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Purpose and Organization of Session

- **Discuss longer term ontology repository issues**
  - Identify
  - Prioritize
  - Propose milestones
- **Both tool and content development**
- **Panelists will present their issues/positions**
- **Review of issues raised in Ontology Summit 2008**
- **Open for discussion**

Panelists

- Michael Gruninger: Common Logic support
- Elisa Kendall: OOR for Public Sector Use
- Bart Gajderowicz: Uncertainty for mapping
- Mathieu d'Aquin: Ontology Repositories
- Katherine Goodier: Socio-cultural awareness
- Todd Schneider: Research questions

Granularity Issues

- **Logical granularity**
  - Unit for import
  - Context for mapping
- **Storage granularity**
  - Same as logical granularity?
  - Unit for mirroring?
  - Unit for versioning?
- **Other issues dependent on granularity**
  - Language dependence
  - Effect of updates to part of a unit
  - Query and retrieval across single and multiple units
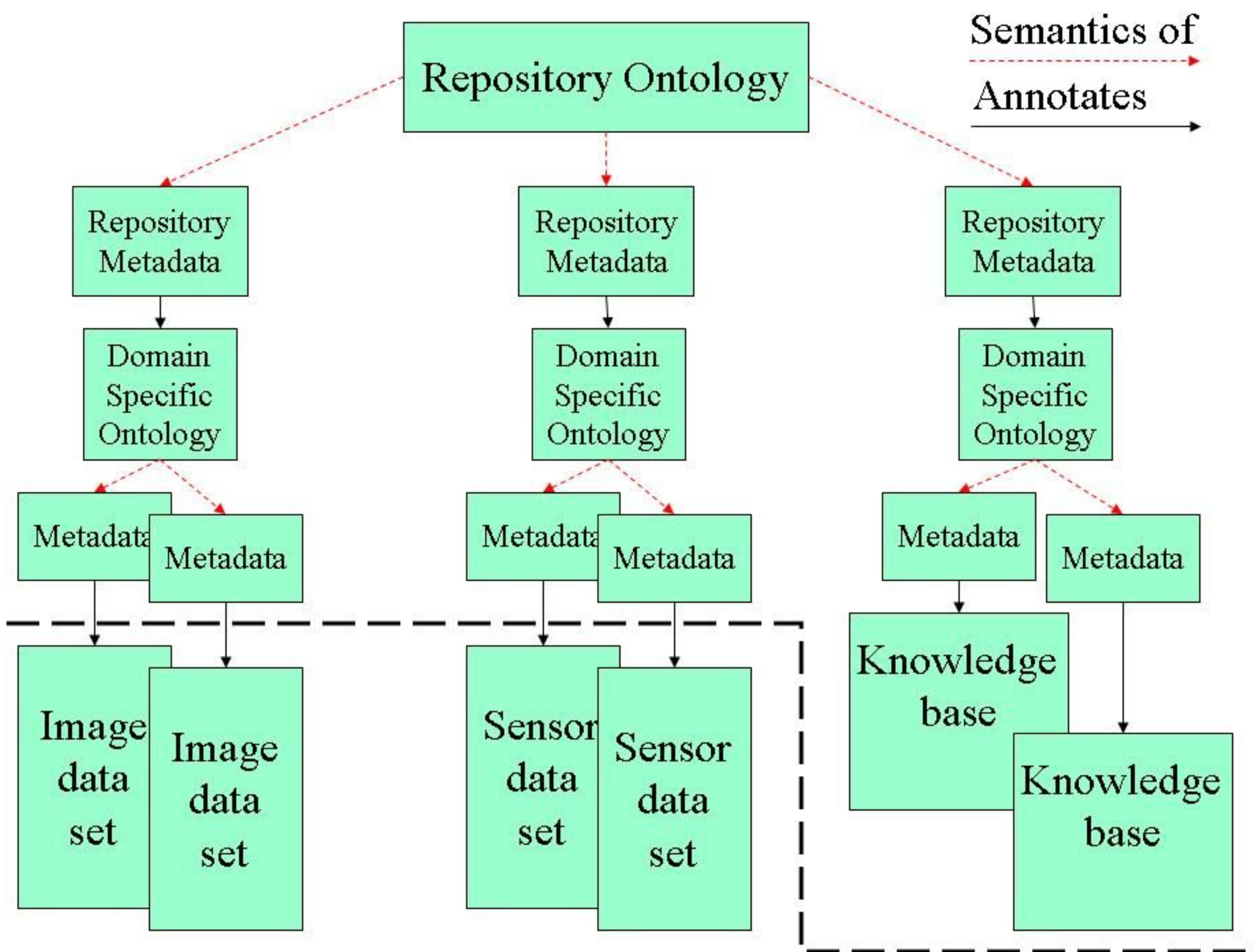
Language Issues

- **Representation languages: text, XML, frames, graphs, DL, CL, HOL, UML, SQL**
  - When and how will they be supported?
- **Search languages: text, faceted, SPARQL, ...**
  - When and how will they be supported?
- **Inter-ontology mapping representation**
  - Initially just sameAs support
  - When should more complex mappings be supported?

Internal Storage

- **Storage strategies: triple stores, quad stores**
  - What is the API for the storage component?
  - Language dependence

- **Single or multiple internal representations**
  - Can one storage unit have multiple internal representations?
  - Could this be lossy?

Management Issues

- **Version management**

- **Configuration management**

- **Provenance and other metadata**

  - See next slide

- **Metadata validation/authentication**

  - Related to policy issues

- **Ontology ownership and access control**

Modularization and Mapping

- **Inter-ontology mapping consistency**
  - Formal definition?
  - Weaker notions of consistency
- **Ontology modularization support**
  - Convenience or meaningful
  - If meaningful what is the semantics?

Architecture Issues

- ## Web service (API) ontologies (including the repository itself as a Web service)
  - Potential new source of ontologies
  - Ontology repository as web service registry
  - Ontology based software engineering
- ## Repository architecture: components and internal APIs
  - Ontologies for the repository development itself

Tool Support Issues

- **Inference support**
  - When and how should it be supported?

- **Ontology editors, pretty printers, visualization tools, differencing tools, explanation tools, summarization tools**
  - Should these be prioritized?
  - Should it be up to repository instances?

Administration and Policy Issues

- **Gatekeeping policies and enforcement**
  - Overall policies or left to individual repositories
- **Policy-making body**
  - When should it be constituted?

Scalability Issues

- **Scalability goals**
  - Size milestones
  - Concurrent access milestones
- **Instance data**
  - See slide 8

Outreach and Education

- **Integration with other semantic tools**
  - Semantic wikis
  - Others?

- **Education**
  - Documentation is not enough

- **Community outreach**
  - Meet with representatives of the community
  - Assist in transition to ontology repositories