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# 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

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# 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

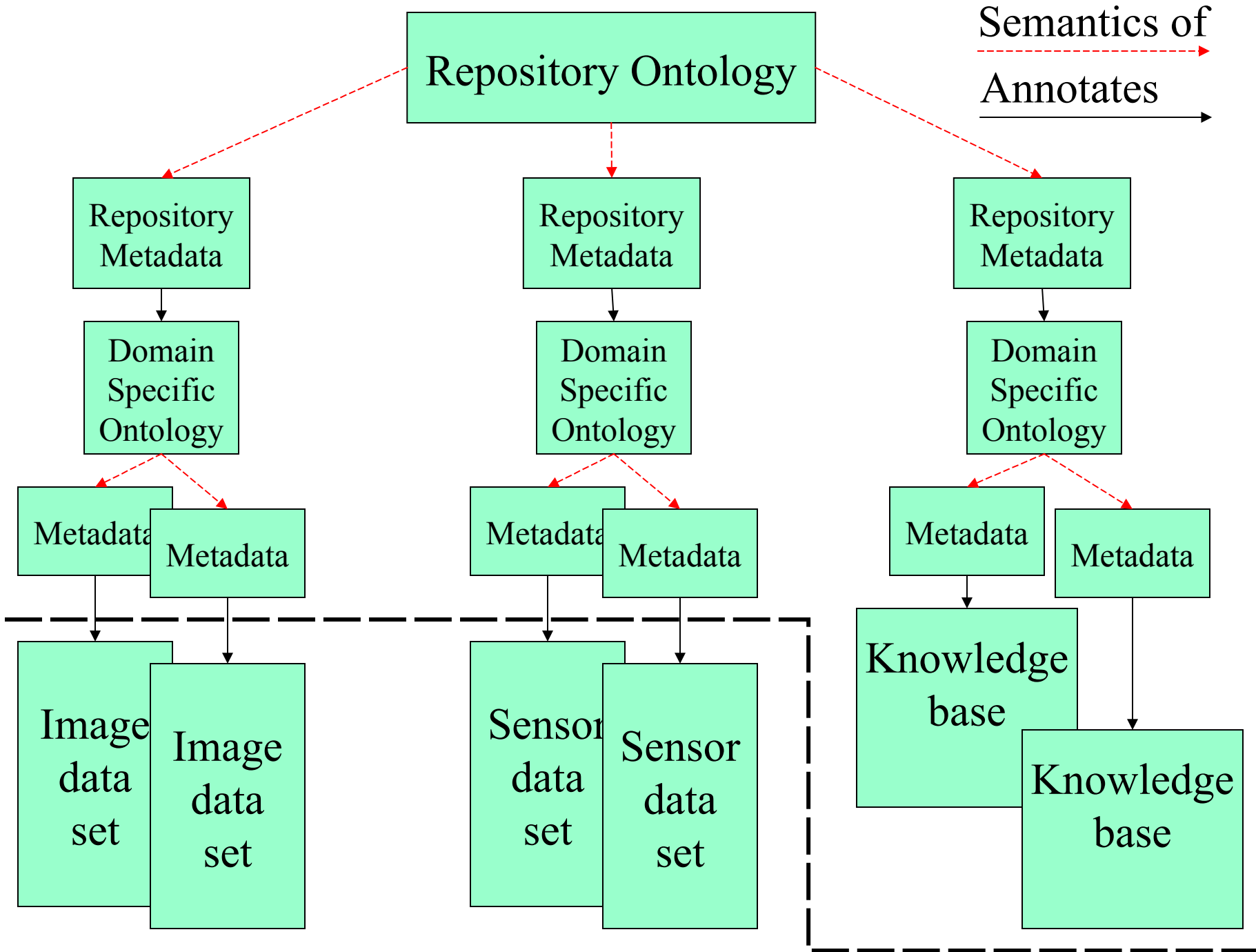
- Representation languages: text, XML, frames, graphs, DL, CL, HOL, UML, SQL
  - When and how will they be supported?
- Search languages: text, faceted, SPARQL, ...
  - When and how will they be supported?
- Inter-ontology mapping representation
  - Initially just sameAs support
  - When should more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

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# Administration and Policy Issues

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

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# Scalability Issues

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

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# 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