

**Common Logic,  
Open Ontology Repository,  
Sharing and Integrating Ontologies**

*An On-line Panel Discussion*

**Chair: John F. Sowa**

**Speakers: John Bateman, Till Mossakowski, Michael  
Grüninger, Cameron Ross, Adam Pease, Pat Hayes**

**10 September 2010**

# A Family of Logics

**First-order logic is a subset or superset of most logic-based notations.**

**But people are constantly inventing new notations, and they don't want to abandon their favorite notation in favor anybody else's.**

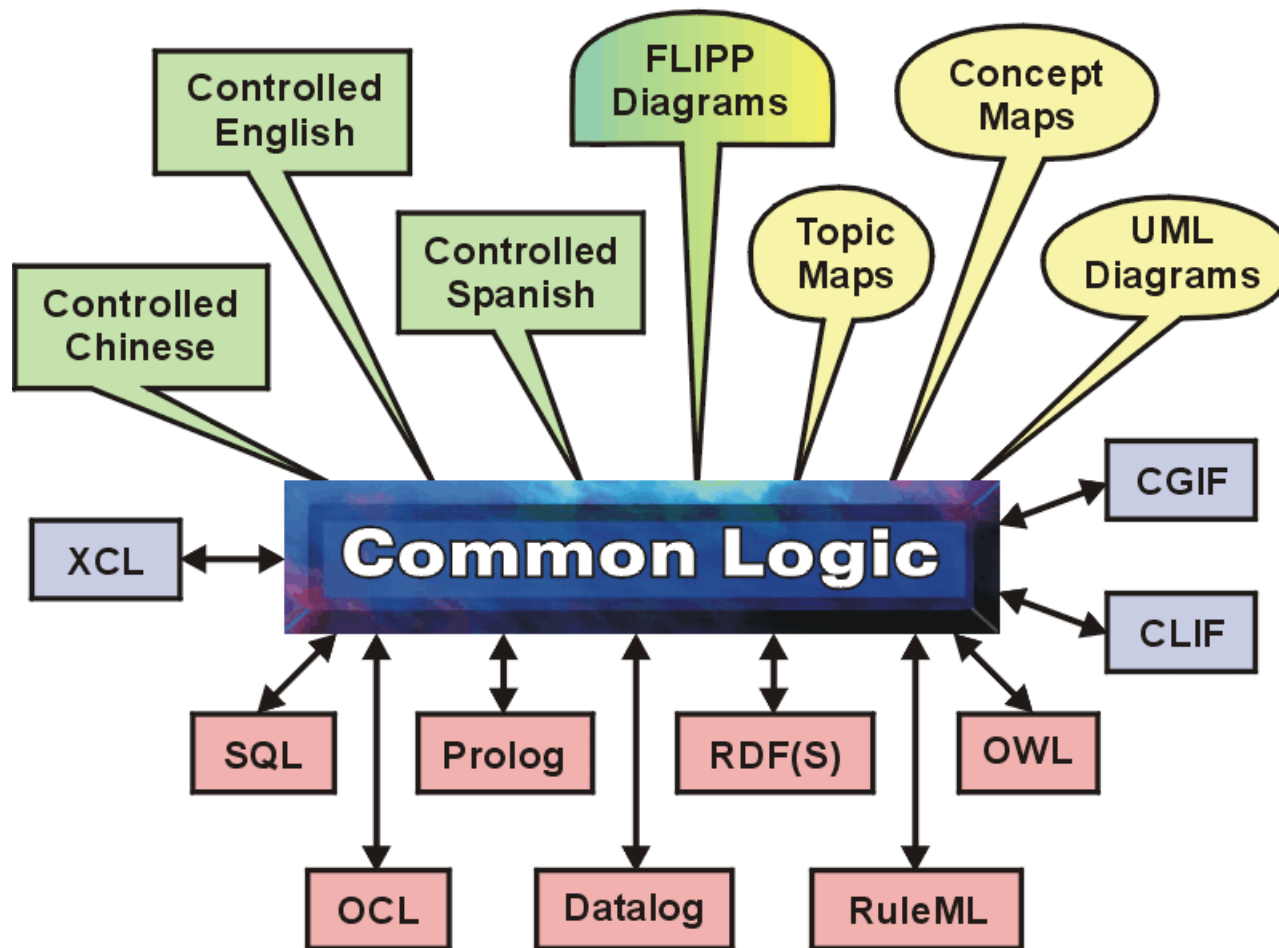
**The ISO/IEC standard 24707 for Common Logic defines a very general semantic foundation for an open-ended family of dialects.**

**Three normative dialects are specified in the ISO standard:**

- **CLIF — Common Logic Interchange Format**
- **CGIF — Conceptual Graph Interchange Format**
- **XCL — XML-based notation for Common Logic**

**But any notation that uses the common semantics can join the family.**

# Human Interfaces



# Machine Interfaces

# **Sharing and Integrating Ontologies**

**The SIO project for sharing and integrating ontologies was started as a community project by the Ontolog Forum.**

**SIO is a companion to the Open Ontology Repository (OOR), which is also sponsored by the Ontolog Forum.**

**Various participants in the forum have discussed related theoretical issues over a period of several years.**

**Many of them have developed compatible methodologies and implemented open-source tools to support them.**

**Goal: Collaborate and coordinate the development of those tools, theories, and methodologies in support of OOR.**

# **Ontologies, Terminologies, and Lexical Resources**

**Ontology: The study of what exists and how it can be formally described and axiomatized.**

**Terminology: A classification of the technical terms used in any branch of science, engineering, business, and the arts.**

**Lexical resource: A dictionary, thesaurus, grammar, or other representation of the vocabulary, syntax, or semantics of some natural language.**

**These are three related, but different kinds of representations.**

**WordNet, for example, is a valuable lexical resource.**

**But aligning two ontologies to WordNet does not guarantee that corresponding categories have equivalent definitions.**

**Merging and relating ontologies requires logic-based tools.**

# Bremen Ontology Research Group

## Ongoing activities:

- Collaborative Research Center on Spatial Cognition
- Within the EU FP7 Project OASIS (Open Architecture for Accessible Services Integration and Standardization)
- Developing logic-based tools and methodologies for ontology structuring, sharing, and integration.
- Plan to collaborate with OOR, SIO, and COLORE projects.

## Project members:

John Bateman (project leader), Oliver Kutz, Joana Hois, Till Mossakowski, Immanuel Normann, Alexander Garcia Castro, Bernd Krieg-Brückner, Mehul Bhatt

<http://www.fb10.uni-bremen.de/ontology/>

# COLORE Project

**COmmon Logic Ontology REpository (COLORE) addresses the question**

**How can the Open Ontology Repository (OOR) support the integration of upper ontologies and also support the design and reuse of ontologies for existing and emerging standards?**

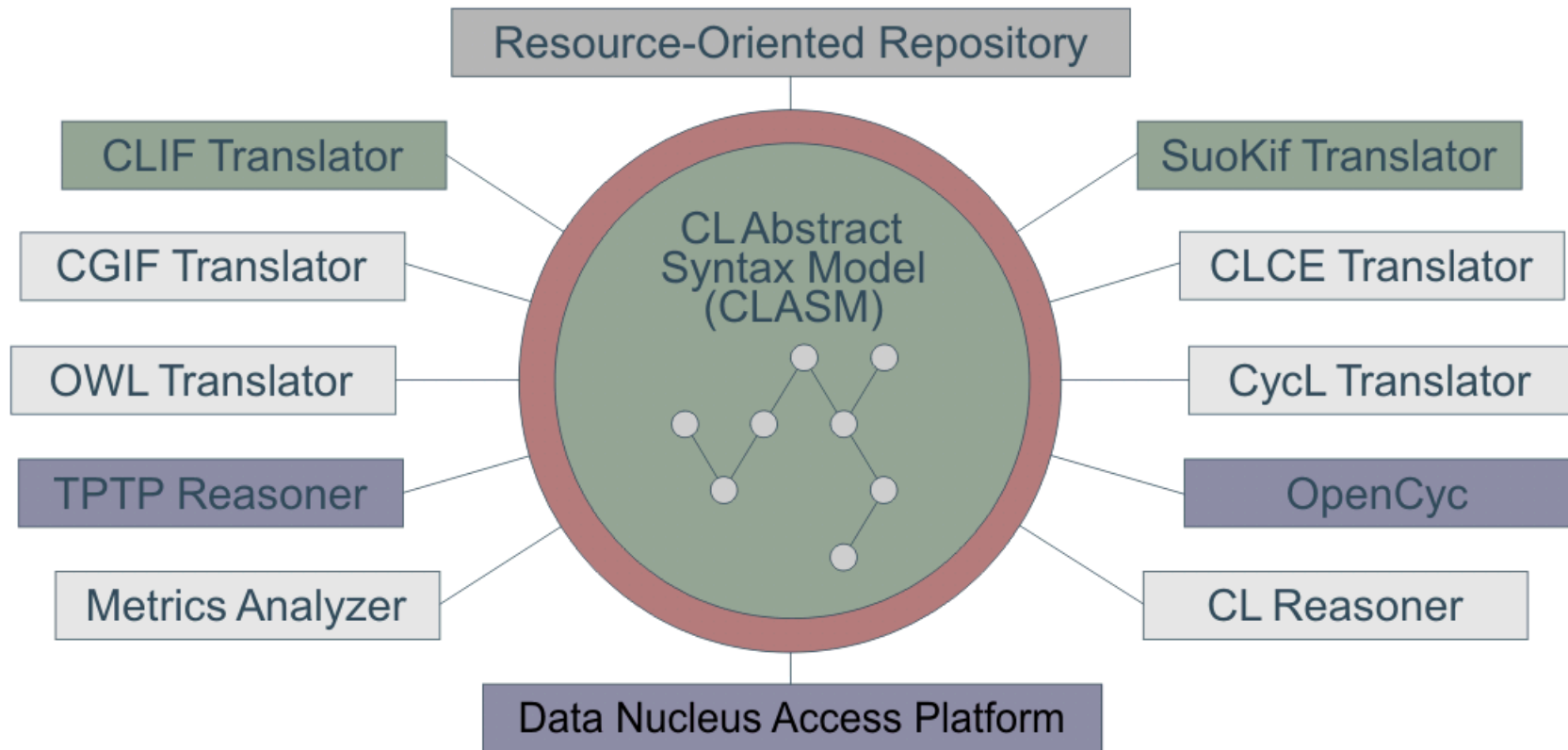
**Goals:**

- **Support ontologies expressed in Common Logic.**
- **Characterize logical relationships among ontologies.**
- **Develop logic-based tools to test those relationships.**
- **Use them to develop ontologies for manufacturing standards.**

**Project led by Michael Grüninger, Department of Mechanical and Industrial Engineering, University of Toronto.**

<http://stl.mie.utoronto.ca/colore/index.html>

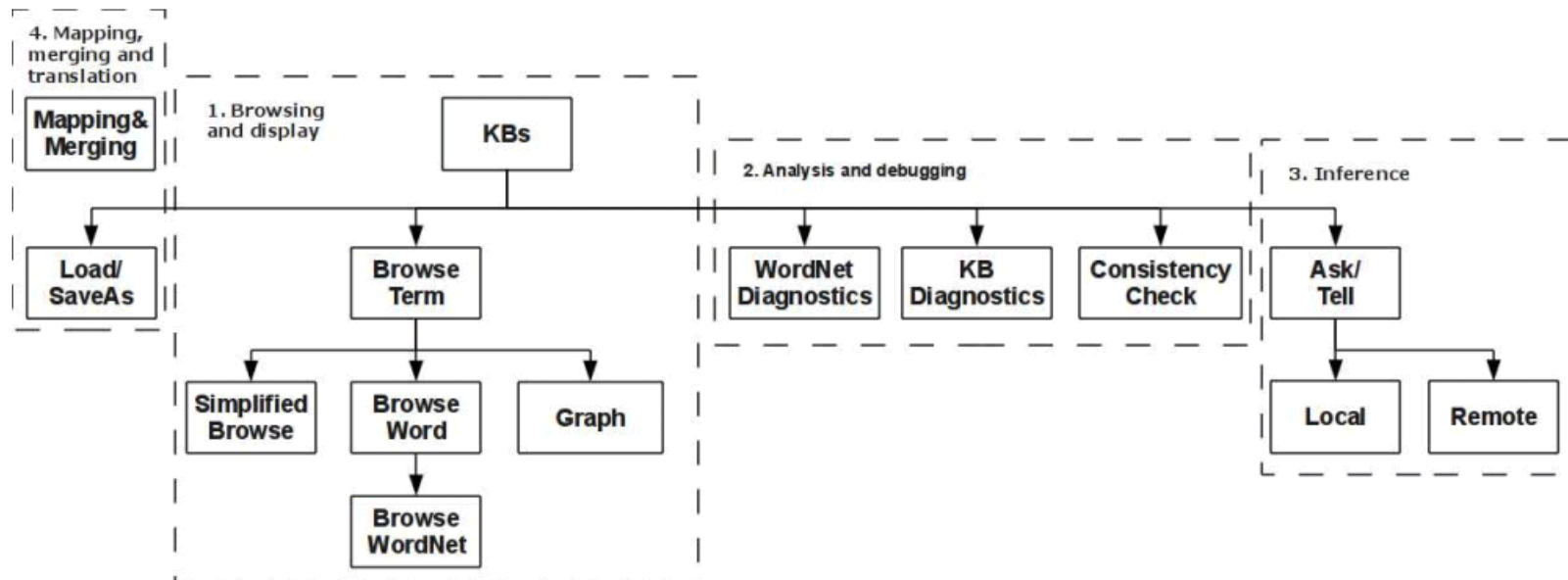
# Samian Platform Architecture



**Project at Kojeware, headed by Cameron Ross**



# Sigma Architecture



**Project at Articulate Software, headed by Adam Pease**

# Links to Slides and Other Resources

**Slides presented by John Bateman and Till Mossakowski:**

[http://ontolog.cim3.net/file/work/OpenOntologyRepository/2010-09-10\\_CL-support-for-OOR/Ontolog-HETS-CL--JohnBateman-TillMossakowski\\_2010-09.ppt](http://ontolog.cim3.net/file/work/OpenOntologyRepository/2010-09-10_CL-support-for-OOR/Ontolog-HETS-CL--JohnBateman-TillMossakowski_2010-09.ppt)

**A You Tube video of the Hets tools in operation:**

<http://www.youtube.com/watch?v=e3UXGPGS3To>

**Slides about COLORE presented by Michael Grüninger:**

[http://ontolog.cim3.net/file/work/OpenOntologyRepository/2010-09-10\\_CL-support-for-OOR/Objectives-COLORE-OOR--MichaelGruninger\\_20100910.pdf](http://ontolog.cim3.net/file/work/OpenOntologyRepository/2010-09-10_CL-support-for-OOR/Objectives-COLORE-OOR--MichaelGruninger_20100910.pdf)

**Slides about the Samian Architecture presented by Cameron Ross:**

[http://ontolog.cim3.net/file/work/OpenOntologyRepository/2010-09-10\\_CL-support-for-OOR/An-OOR-Implementation-for-COLORE--CameronRoss\\_20100910.pdf](http://ontolog.cim3.net/file/work/OpenOntologyRepository/2010-09-10_CL-support-for-OOR/An-OOR-Implementation-for-COLORE--CameronRoss_20100910.pdf)

**Slides about Sigma KEE presented by Adam Pease:**

[http://ontolog.cim3.net/file/work/OpenOntologyRepository/2010-09-10\\_CL-support-for-OOR/Sigma-as-an-OOR--AdamPease\\_20100910.pdf](http://ontolog.cim3.net/file/work/OpenOntologyRepository/2010-09-10_CL-support-for-OOR/Sigma-as-an-OOR--AdamPease_20100910.pdf)

**General web page for this panel discussion:**

[http://ontolog.cim3.net/cgi-bin/wiki.pl?ConferenceCall\\_2010\\_09\\_10](http://ontolog.cim3.net/cgi-bin/wiki.pl?ConferenceCall_2010_09_10)

**Web site for further information about Common Logic:**

<http://cl.tamu.edu>