**IMSCOM**

**IMSC Ontology Manager**

**Research Goal**

- **Motivation**
  - Manually constructing and integrating ontologies are tedious and error-prone tasks
  - A firm collection of high level modeling primitives is needed
- **Goal**
  - Semi-automated ontology construction and integration
  - Support high accessibility and multiple views for ontology presentation
  - Focused on a powerful semantic model

**Role in IMSC**

IMSCOM project will be applicable to a broad range of ontology-related projects at IMSC
- Communication vision project: an immersive environment for trainees and experts
- Crisis management in Homeland Security Center project - CREATE
- News story structuring
- Topic/event detection from data streams

**Accomplishments**

- **Publication**

**Research Approach**

- Ontology Authoring
  - Ontologies with rich semantic relationships
  - XML, RDF, DAML+OIL, OWL
- Ontology Learning
  - Natural language processing
  - Machine learning
  - Data mining
- Ontology Integration
  - Defining and computing similarity
  - Multi-strategy learning
  - Handling complex mappings

**Uniqueness and Related Work**

- **Uniqueness**
  - Constructing & Browsing Ontologies
  - High Accessibility
  - Cooperative Multi-Authoring
  - A Concrete Expressive Power

**5-Year Plan**

- **Year 1**
  - No Need to Distribute/Export Ontology Learning/Ontology Integration

- **Year 2**
  - Support richer semantic inter-relationships
  - Develop workspace management system

- **Year 3**
  - Develop semi-automated ontology-learning system
  - Develop ontology import/export system

- **Year 4**
  - Develop semi-automated ontology-integration system

- **Publication**