

# Advanced Knowledge Technologies

The next generation of knowledge lifecycle technologies

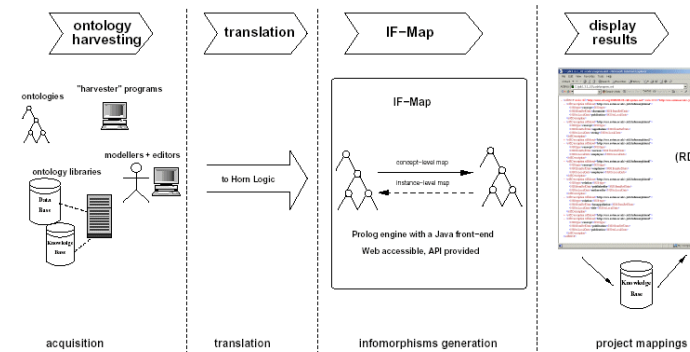


## Description:

### ◆ Multi-million pound 6 year collaboration between 6 university groups:

- ◆Aberdeen: cooperative KA & knowledge refinement;
- ◆Edinburgh: lifecycles & ontologies;
- ◆Open Univ: internet-based services & knowledge modelling components;
- ◆Sheffield: text analysis & information extraction;
- ◆Southampton: two groups with skills in multimedia, ontologies, agents, knowledge acquisition, etc.

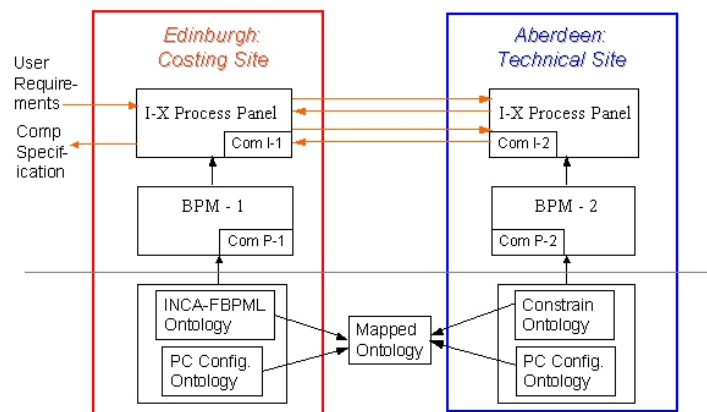
### ◆ Aims to identify or invent the next generation of technologies for capture, modelling, publishing, reuse and management of knowledge.



IF-Map Architecture

## Further work:

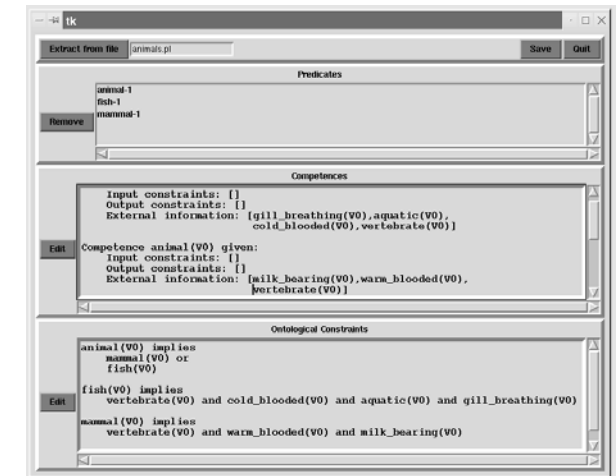
- ◆ The ultimate goal of F-Life is to permit assembly of distributed software components over the Semantic Web, to perform complex transformations on large repositories of knowledge.
- ◆ The aim of KRAFT-IX is to provide a distributed virtual knowledge-based (and agent-based) workflow system.
- ◆ The overall aim of AKT is to provide seamless, intelligent, personalised access to and reasoning across the Web and other knowledge sources.



KRAFT-IX Ontology based Collaboration support

## Results:

- ◆ IF-Map: uses Information Flow theory to merge two ontologies, based on a reference ontology.
- ◆ F-Life life-cycle editor, life-cycle interpreter and property checker: uses a formal life cycle calculus to describe property alterations during transformations.
- ◆ ExtrAKT Ontology Constraint Extraction Tool: finds ontology constraints in existing declarative knowledge bases & extracts them.
- ◆ KRAFT-IX Collaborative Support tool: integrates open-architecture workflow system with remote constraint solving system.



The ExtrAKT Ontology Constraint Extraction Tool