

DS5 – Intelligent Resource Discovery

Review

DS5 Goals

- Project plan: « *feasibility study for developing components based on emergent technologies in the areas of the semantic web and ontologies* »
- « *actual component designs and trial implementations, and standards development* »

DS5 & VOTECH objectives

- 2) To assess new technologies and study the feasibility of their incorporation in Euro-VO
- 3) To create designs of new infrastructure components based on those new technologies
- 4) To create designs of science user tools and datamining services
- 5) To develop trial versions of new infrastructure components, tools, and datamining services and to test them
- 6) To decide what new interoperability standards are required, and to contribute to those standards with international partners through the International Virtual Observatory Alliance (IVOA)
- 8) To liaise with computer science, IT industry, and related applications projects in order to mesh with larger standards and to save work wherever possible

DS5 scope

- From the Resource Discovery page
 - surveying available techniques, standards and tools related to the **Semantic Web** and **Ontologies**, identifying their scope, community-support and limitations.
 - identifying a list of possible **science cases** where intelligent resource discovery tools could be developed for astronomers, highlighting interactions with related IVOA working groups when relevant.

Activities: ontologies (1)

- Evaluate tools related to semantic web and ontologies (Ontology Survey)
- Use existing standards and tools: OWL, Protégé
- Use cases defined (with DS4)

Activities: ontologies (2)

- Development of prototype ontologies
- Astronomical object types
 - First IVOA technical note (oct 2006)
- VO access control
- VOEvent
 - Application to solar VOEvent knowledge base
- STC
- Registry

Activities: metadata (1)

- Astronomical metadata management
- SAADA evaluation
 - test on various ESO datasets
 - hands-on session at DCA workshop
- FITS keywords mapping: Mex
 - specifications and requirements for metadata extraction
 - hands-on session at DCA workshop

Activities : metadata (2)

- Unified Content Descriptors (UCDs)
 - Adopted as IVOA recommendation in 2005
 - Set of tools (avail. as Web Services)
- Link between Ontologies and IVOA Semantics WG

Activities : resource discovery

- Registry query tool
 - Query Registry by UCDs
 - Feedback on IVOA Registry WG
 - 1st implementation of charac DM
- Object names recognition
 - Identify object names in papers
 - New perspectives for literature search

Effort expended

	ESO	LU	CNRS	INAF
2005 funded	12	2	11,4	6
2005 contributed			7,4	
2006 funded	12	10	26,35	15
2006 contributed		2	7,4	

DS5 Deliverables

- Month 30: First Resource Discovery Prototype released to DS2
- Month 33: Resource Discovery Study Report
- Month 36: Second Resource Discovery Prototype released to DS2
- Month 48: Third Resource Discovery Prototype released to DS2

First Resource Discovery Prototype (DS5-02)

- Delivered to DS2 last week
- Registry Query Tool
 - resource discovery in the registry
- Data Extraction Tool
 - use-case: SPECFIND radio SEDs
- Object Names Recognition
- Keyword mapping (MEx)

Future deliverables

- Study Report
 - due december 2007
- Prototype release 2 (march 2008)
 - Ontology-related prototypes
 - Includes cross-DS issues
- Prototype release 3 (dec. 2008)
 - Global resource discovery prototype
 - Various integrated tools

Diffusion

- IVOA note on ontology (oct. 2006)
- Presentation at IAU general assembly, Prague, 2006 during special session 3 (the Virtual Observatory in action)
 - Ontology of astronomical object types
 - Homogeneous data retrieval – SPECFIND
- Contribution to DCA workshop, Madrid, 25-29/06/2007 (hands-on using MEx)
- Poster on object names recognition, ADASS XVII, 2007, London

Conclusions

- Lots of material available on the DS5 wiki pages
- Links with other DSs, and feedback at the IVOA level
- DS5 is making good progress, and has promising future prototype deliverables