JRA1 Interoperability

Contact person : S. Schlemmer

Objectives :

Define all standards necessary to build an interoperable infrastructure

WP Lead: KOLN & CNRS

Description of work :

Task 1: Data Models and XML Schema (lead by CNRS(1), all JRA1 partners)

The current data models and XML schema are a description of atomic and molecular linelists for use in an astrophysical context (ref.) and a description of atomic and molecular elementary processes (ref.). The documents have been designed by a small number of people, those documents are still in draft mode, do not cover all application fields and have not been discussed extensively among users and producers. These preliminary versions will be completed and extended in order to cover a wider range of species, a wider range of processes and will include the effect of the environment. For now we identify the following extensions:

- inclusion of solid, surface spectroscopy for interstellar medium and planetology

- inclusion of larger molecules such as PAH

- description of atomic and molecular line shapes arising from different sources

In connection to the user & producer board of NA2, more extensions will be considered if necessary. Through the Standards and Processes Committee all standards will be connected to International efforts of standardisation.

Task 2: Dictionaries (lead by QUB(9), all JRA1 partners)

In order to uniquely identify resources we will need to define and build dictionaries both general and specific to applications. At present we identify the following dictionaries:

- single identification of databases and services

- list of conventions (link to IUAPAC and other convention bodies)

- list of names of species (in relation with other fields such as chemistry)

- list of processes and coding of processes

- list of quantum numbers

Other lists will be identified during the course of the project in relation with activities in WP2 (NA2)

Task 3: Access Protocols and Query/Retrieval Languages (lead by UU(6), all JRA1 partners)

We will define protocols retrieving different types of resources: numerical data, libraries, documentation, references. Those protocols will cover asynchronous queries and the retrieval of huge sets of data. In a second step we will design a general query language allowing to access and retrieve any atomic and molecular data.

Task 4: Registries (lead by CNRS(1) with partner 6)

Registries provide a mechanism with which applications can discover and select resources--e.g. data and services--that are relevant for a particular scientific problem. We will start from the registries defined in the IVOA and see how to adapt and/or extend the documents to our own purpose. In particular we wish to implement ways of finding resources at various levels of granularity.

Task 5: Other Documents (lead by KOLN(7), all JRA1 partners)

Other basic definitions/standardisations might be necessary in order to find/identify resources and documents produced by the IVOA will be assessed in order to keep/adapt to our own needs.

Deliverables : *JRA1 Interoperability*

Milestones : WP6