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The IDIS Joint Research Activity: Tools for a Planetary Virtual Observatory

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Abstract

The IDIS Joint Research Activity (JRA-IDIS) of EuroPlaNet RI prepares essential tools implemented as web services allowing the Planetary Science community to interrogate some selected data centres, access and process data, and visualise the results. The key objectives of this JRA are:

• To define the data models and standards required to enable the services provided by SA IDIS to work in an interoperable fashion, and to investigate the basic elements of a future VO in planetology.

• To develop "added value" services to users that go beyond the provision of raw datasets, bringing the interrogation process much closer to the actual scientific aims of European planetary scientists.

• To generalise the experience gained from SkyBoT (Sky Body Tracker), a virtual observatory service for ephemeredes developed at Observatoire de Paris, to other datasets provided by SA IDIS.

• To develop user-friendly interfaces to access to reference laboratory data required to interpret observations or to run simulation models whenever such data already exist.

• To create new databases, long-awaited by the scientific community, accessible through web services

• Products of JRA4 will be used by SA-IDIS or made available to all planetary scientists by SA-IDIS.

Description of work JRA4 is broken down into four tasks. The first one is the coordination of the work package itself and its synchronization with the SA-IDIS, whilst tasks 2-4 will develop essential inputs for extending services provided to the community by the IDIS Service Activity (SA IDIS). Task 1 - The two IDIS work packages SA IDIS and JRA-IDIS are intrinsically linked, and will therefore be managed by a single coordinating team (CNRS/LPP, Palaiseau, and INAF/IASF, Rome) Task 2 - Interoperable Data Access is lead by CNRS/CESR, Toulouse, and by INAF/IASF, Rome. Task 2 will establish the basis allowing the evolution of SA-IDIS towards a future VO for planetary sciences. Meanwhile Task 2 will also provide a web-based general inventory of resources associated with a search engine. This inventory will allow users to search resources based on general keywords. Such an approach is appropriate for interactive resource exploration, but will not fit the VO requirement (i.e. automated search up to the content of datasets).

Task 3 - Added Value Services to Users is lead by DLR/IPR, and by the VO Data Centre of Paris Observatory. Task 3 will work in close conjunction with Task 2 to enable users to extract information from several data sets and compare them. It will develop interactive tools, which facilitate the retrieval of data sets for given regions, times, or data types. It will create interfaces for existing databases that currently have complex query and access procedures, making them widely accessible by the Planetary Science community.

Task 4 - New databases is lead by CNRS/LPG and by DLR/IPR. Task 4 will develop a generic infrastructure of spectroscopic databases for solids (ices, minerals, organic molecules, extraterrestrial and synthetic organic matter). This infrastructure will be VO compliant and will enable the implementation of added value services as web services.

A general presentation of the planned developments will be made.