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A survey of existing data models and protocols for a European Planetary Virtual Observatory

M. Gangloff (1), C. Jacquey (1), N. André (1), B. Cecconi (2), V. Génot (1), C. Harvey (1), M.-T. Capria (3), C. Arviset (4), P. Osuna, and J. Salgado (4)

(1) CDPP/CESR, CNRS/Université Paul Sabatier, 9, avenue du colonel Roche, 31028 Toulouse, France (Michel.Gangloff@cesr.fr), (2) LESIA, Observatoire Paris-Meudon, Meudon, France, (3) INAF-IFSI, Roma, Italy, (4) ESAC, European Space Agency, Villanueva de la Cañada, Spain

Abstract

In EuroPlaNet-RI, Joint Research Activity 4 will prepare essential tools to allow the planetary science community to interrogate selected data centres, access and process data and visualize the results. This is an essential step towards a European Planetary Virtual Observatory.

The first requirement for different data centres to be able to operate together collectively is adequate standardization. In particular a common description for data and services is essential. This is why the major part of JRA4/Task2 activity must focus on data models, associated dictionnaries, and protocols to exchange queries. Currently several Virtual Observatories are being developed in Astronomy (IVOA) and Space Physics (HDMC, HELIO). There is also an effort in the planetary community (IPDA) to define standards for exchanging data through a common protocol.

In this paper, we will give an overview of existing data models (SPASE, IVOA, PDS) and protocols (SPASEQL, PDAP, Simple Image Access Protocol , Simple Spectral Image Access Protocol, ADQL) and comment on the ways they may be used or adapted to meet EuroPlaNet-RI needs.