Europlanet-RI/IDIS Technical Node – Network Management and Space Mission Support

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Abstract

The Integrated and Distributed Information System IDIS of the Europlanet-RI project is built around six network nodes, each associated with a research field of planetary research. While the other five nodes concentrate on scientific fields like planetary atmospheres or plasmas, the task of the technical node in Helsinki is to provide management and technical support for the network during its development phase and to make available support information for the planetary research community not directly related to any of the other fields. This includes references for space instrument development, mission planning, test facilities etc.

1. Introduction

With support of a European Union / Framework Program 6 grant the basic ideas for an Information Service were developed in the years 2005 through 2008, focusing on all aspects of planetary research. During the following years this service will develop into a Virtual Observatory (VO) for simultaneous access to on-line data from different fields of planetary research. This may cover plasma or spectral data from space borne instruments, simulation results or support information and tools like spectroscopic data bases, but also planetary surface and sub-surface properties, laboratory data etc. With this effort the investment into space- and especially planetary-research should be made easier accessible and allow the utilization of data across classic research field boundaries.

1.1 IDIS Structure

The information access service of Europlanet-RI, the Integrated and Distributed Information System IDIS, is implemented as a network of six nodes, each focusing on a special aspect of planetary research and hosted by a research institute with a well known record in that field. While the thematic nodes for planetary surfaces and interior, planetary atmospheres, planetary plasma, small bodies and dust, and planetary dynamics and extraterrestrial matter concentrate on special science aspects of planetary research, the technical node (TN) in Helsinki deals with network development and management, but also provides support information related to space research not covered the other nodes. These aspects are presented in the following section.
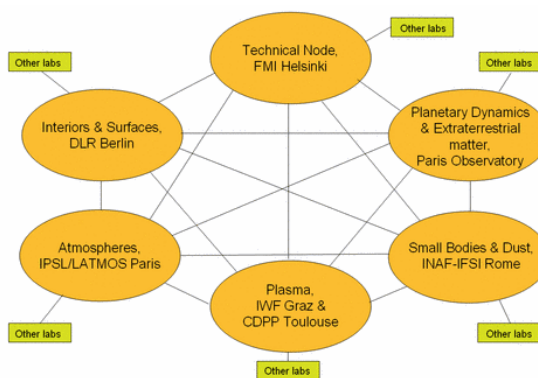

Figure 1: IDIS network structure.

2. Information offered

The offered information and services are still in their development phase. Additional ideas or requests for the inclusion of new resources are always welcome and should be directed at the staff of a related node, sent to the management of the TN or entered into the User Comments section of the TN web-site [1].

2.1 Introduction into IDIS Structure

The TN maintains the information of the IDIS structure and all related documentation. Once approved, they are publically available via the

document section of the node. Detailed information about the possibilities and access procedures for adding new data or other resources and their retrieval is given here.

2.2 Mission Design Tools

In this part of the technical node's web pages links to information are collected which are useful or essential when planning space missions or designing space instruments. Typical examples are:
    * ESA's Space Environment Information System (SPENVIS)
    * Spacecraft Plasma Interactions Network in Europe (SPINE)
    * Spacecraft Plasma Interaction System (SPIS)
    * ESCIES - European Space Components Information Exchange System (ESCC-documents)
    * European Cooperation for Space Standardization (ECSS)

2.3 Mission Support Tools

This part covers the access to support information for current or earlier space missions. Typical examples:
    * ESA-mission SPICE kernel data (ESA/PSA)
    * SPICE kernels, documentation, tools and data (NASA/NAIF)

2.4 VO Technical Information

One of the aims of IDIS is the implementation of Virtual Observatory (VO) services for Background information about the implementation of VOs in general and the chosen implementation for IDIS will be published in this section. Currently some of this information is covered:
    * International Virtual Observatory Alliance IVAO
    * IVOA Virtual Observatory Table Definitions
    * Space Physics Archive Search and Extract (SPA IVOASE) Homepage
    * eXist Open Source Native XML Database Information
    * XML-Tutorial

2.5 General Science Links

The TN also maintains a set of direct links to general data or service providers not obviously related to any of the thematic nodes. This includes test sites and laboratories, ground-based or amateur observations and other networks related to different, but also

bibliographical search tools optimized for space research.

Acknowledgements

References

[1] Web-site address (URL) of the IDIS technical node: http://www.idis.europlanet-ri.eu/