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Europlanet-RI IDIS – Information System and Virtual Observatory for Planetary Research

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Abstract

As the Europlanet-Research Infrastructure project draws to its close at the end of 2012, the various results of the different activities will be made publically available via the project's Integrated and Distributed Information System IDIS [1].

1. Introduction

During the past years the various Joint Research Activities (JRA), Network Activities (NA) and Trans-National-Access facilities (TNA) of Europlanet-RI have developed a wide range of services for the planetary research community. One of them is the current EuroPlanet Science Congress. Access to the outcome of most of these activities will be provided via IDIS, a distributed information and data access system implemented at several host institutes across Europe. With a common web-interface and networked search functionality it is providing information about researchers, institutes and test facilities as well as tools to directly access a wide range of observational and laboratory data related to planetary research. The challenge is the diversity of research fields involved in planetary research, each with its own way of collecting and archiving data and publishing its results.

2. Services Provided by IDIS

2.1 Virtual Observatory

The IDIS team in close cooperation with the efforts of the International Planetary Data Alliance (IPDA) has developed a data model which allows the registration of a wide range of data sources including the results from modeling efforts thereby providing Virtual Observatory (IDIS-VO) [2,3] services for the community to register and access data from planetary data centers, laboratory measurements, spectral- and molecular data bases and simulations. Once a data set from any of these sources is registered with IDIS, it can be accessed, its used archive format translated into a compatible internal format and combined with other data using the visualization tools developed or adapted in connection with IDIS.

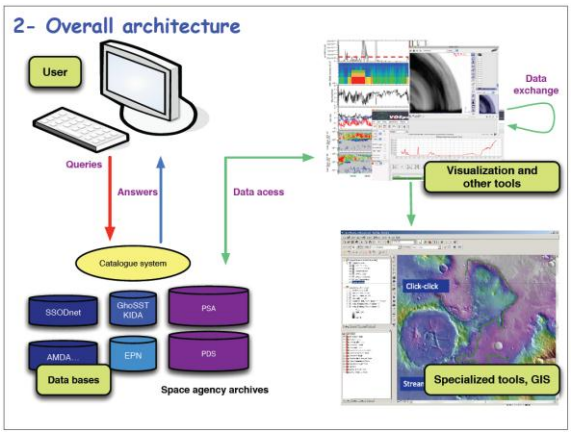

Figure 1: IDIS VO-structure

The VO-structure allows the access to these data through graphical interfaces including optimized visualization tools or alternatively through a command interface for further integration into other applications.

2.2 Services

Tools to calculate ephemeris data for a wide range of solar system bodies, to visualize their locations or identify them from existing images can be found as well as interactive tools to evaluate chemical reaction

paths, spectral information from gas or solids or the mapping of planetary surfaces.

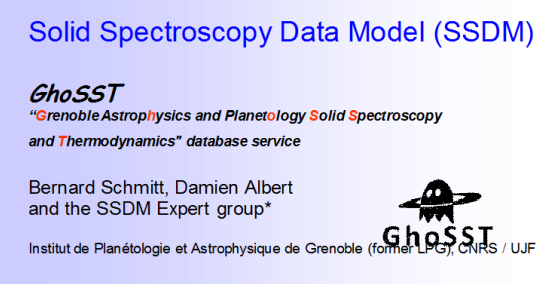

Figure 2: Spectroscopy data base

Figure 3: Kinetic database for chemical reactions

2.3 Information System

Information about ground observation possibilities and related contact information, test and simulation facilities, laboratories, research institutes and scientists with detailed contact information is made available to the user via the IDIS database and dedicated web-pages. An integrated database provides information about available models, their capability and contact information for the responsible institutes.

For details please click on ground-based facility entry name

NAME	INSTITUTION	COUNTRY	WEB	TELESCOPE-TYPE (WAVELENGTH)
88-inch Telescope (Mauna Kea)	University of Hawaii	United States		2.2 m Reflecting Telescope (optical, infrared)
A81 Balzaretto Observatory	Privately owned	Italy		0.203 m Schmidt-Cassegrain (optical)
Abastumani Astrophysical Observatory	Abastumani Astrophysical Observatory	Georgia		1.25 m Ritchey-Chretien (optical) 0.7 m Other (infrared, optical, ultraviolet) 0.5 m Reflecting Telescope (optical) 0.4 m Refracting Telescope (optical) 0.4 m Refracting Telescope (optical) 0.36 m Reflecting Telescope (optical) Other 0.44 m Other
Abre Los Ojos	Privately owned	Spain		0.508 m Corrected Dall-Kirkham Astrograph (optical)
Algonquin Radio Observatory	Thoth Technology	Canada		45.799999 m Radio Telescope (radiowaves)

Figure 4: Database for ground-based observatories

For the developers of new space instruments and operators of active missions support information is collected in the data access system of IDIS.

3. Summary and Conclusions

The Europlanet-RI project has developed a wide range of tools and services and collected a large amount of information essential to all fields of planetary research. The information and services are now being made available to the scientific community via the project's information system IDIS.

Acknowledgements

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References

[1] Details to IDIS and the Europlanet-RI via Web-site: http://www.idis.europlanet-ri.eu/

[2] Demonstrator implementation for Plasma-VO AMDA: http://cdpp-amda.cesr.fr/DDHTML/index.html

[3] Demonstrator implementation for the IDIS-VO: http://www.idis-dyn.europlanet-ri.eu/vodev.shtml