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# User Requirements Document

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## Background

- Based on ESA's Guide to the User Requirements Definition Phase
- Structural elements from the ANSI/IEEE Std 830-1984 for Software Requirements Specification
- 3 Sources of input to this document:
  - Requirements, derived from the EuroPlaNet contract
  - Requirements, derived from the analysis of selected Science Cases
  - Requirements, derived from selected Use Cases as a series of actions to achieve goals related to the Science Cases (not in draft)
- Science Cases originally collected and defined by EuroPlaNet N2, ammended by suggestions from the thematic nodes
- Analysis done by the N7-team



# General Description (1)

## Product Perspective

- No independent data bases, but user friendly access to existing data and information
- Only access methods are maintained by IDIS, data quality under responsibility of data provider
- Any data repository or information related to the tasks of EuroPlanet may be linked to IDIS
- IDIS itself may be referenced and accessed by other information systems if this does not interfere with the main tasks of IDIS

## General Capabilities

- Keyword-based search capability with decentralized keyword lists for different topics
- Automatic request forwarding to thematic nodes related to given keywords
- Access to information about availability of resources and access methods
- Forwarding of requests to keyword-related other information providers including Virtual Observatories, where available

## General Constraints

IDIS depends on the willingness and capability of the resource providers to make the information accessible. Validation of resource contents is outside the scope of IDIS.



## General Description (2)

### User Characteristics

- Scientist working in any research field related to planetary sciences
- Scientists, administrative and technical staff preparing new missions, looking for co-operation partners or support facilities like laboratories, modelling groups etc.
- The public including decision makers and the media

### Operational Environment

- Distributed information system
- Five coordinating centers ("nodes") with interconnection via public data networks
- Each center will maintain a set of links and access information to data, information and service providers related to the topics of the center
- Each center will implement keyword-based search engines interfacing via special protocols with the other centers

### Assumptions and Dependencies

This document assumes that the implementation of the demonstrator is followed by a full-scale implementation of all the requirements listed here.

IDIS depends on the willingness of resource providers to provide information and access



# Specific Requirements

Each requirement is marked with a unique identifier related to the source of the requirement. The requirements are formulated such that their implementation can be verified.

'C' for contract-derived requirements [AD2] , 'S' for *Science Case* or, 'U' for *Use Case*.

Each requirement is identified as either mandatory, highly advisable or desirable. Additionally those requirements foreseen for implementation outside the current contract are highlighted.

a Mandatory Requirement (from the Contract), b Highly advisable, c Desirable

## General Requirements

Conceptual requirements

Implementation requirements

Service requirements

Data related requirements

Communication and outreach requirements

## Node Specific Requirements

*Same subgroups as above, one set for each node. To be provided in the final version of the document*

## Verification Requirements



# Examples for Specific Requirements (1)

## Conceptual requirements

[C08.01 a] Support the EuroPlaNet participants in accessing and sharing of both data and information;

[C01.01 a\*] IDIS should include every kind of available resources related to the scientific themes of the nodes and supply the users with the possibility to specify which kind of resources they want to search for and to restrict the search range;

## Implementation requirements

[C08.05 a] Be compatible with, and complementary to data services existing in and outside Europe;

[S13.04 c] to ensure future maintenance and to minimize ownership and maintenance costs, IDIS should adopt an open standard;

[S13.03 b\*] IDIS should identify and adopt a data system/model adherent to international scientific standards to be used in creating the resource databases;

## Service requirements

[C08.07 b] IDIS should be organized as a searchable catalogue of resources to complement the service offered by international providers;

[S13.07 b] IDIS must supply a list of typical keywords for the different resources, in order to help first-time users and in general to speed up the search process;

[S03.06 c\*] Support Format conversion for data providers to facilitate delivery of data products, to respond to changing software needs and constraints and for the long term archive;



## Examples for Specific Requirements (2)

### Data related requirements

[C08.09 a] Provide a general platform for accessing data and information;

[S13.12 a] Each node should analyze the existing resources and inquire the needs for the scientific community;

[S03.15 b] Data must be accompanied by sufficient metadata to render it scientifically usable (e.g. units, reference frame, array descriptions, bin boundaries etc). Such metadata must be attached to the delivered data products;

[C08.10 b\*] Provide a general platform with relevant tools for integrating and linking relevant data centers, data bases and information systems;

### Communication and outreach requirements

[C08.12 a] Plan clear and accessible public information to explain what EuroPlaNet participants do in their laboratories and to promote interest for sciences in Europe;

[S03.19 b\*] Provide general online information for the public on available data and science tools, including web links.





# Verification Requirements

[S13.16 b] at completion of FP6, each node science case should be used to create a tutorial/demonstrator to illustrate the system use/potentiality to new users and the scientific community in general;

[S13.17 b] at completion of FP6, report on the missing services which could optimize and enhance the scientific value and relevance of the already available ones;

[S13.87 c\*] IDIS should evaluate the possibility to extend the democratic approach to the general public for the creation of outreach material and teaching supplements for educational support;

[S03.20 b\*] Perform an IDIS end to end test with external science users;

[S13.19 b\*] Each Node should implement prototypes to evaluate the opportunity and feasibility of future extensions in response to the community needs with the available resources.