

# Data Access and Prototype (DAP) Working Group

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# DAP WG Scope of Work

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- ❑ The main task of the Data Access and Prototype Working Group (DAP WG) is the definition of standards for data and metadata interchange
- ❑ **Purpose**
  - Homogeneous server services allow the implementation of software clients
  - Interoperability between planetary databases will increase the scientific exploitation of the data
- ❑ **Implementation**
  - Planetary Archives will implement server services to publish data
  - Client data analysis will use these server services to access data in a uniform way
  - The DAP WG will provide a mechanism to notify/discover the existence of new server services to the community



# DAP WG Membership and

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## Activities

- The DAP WG is a cooperative forum and the IPDA promotes an open working environment
  
- **“Membership in the working group shall be comprised of representatives from any member agency of the IPDA that indicate a willingness to fully participate in the Archive Standards Working Group activities, who can provide the commensurate level of support, and who have the authority and capability of implementing IPDA standards for those data sets under its control.”** *Provisional Charter*
  
- Any member of the IPDA DAP WG can contribute either in the specification definition phase or implementing server services to expose data and client software for consumption/analysis of the data
  
- The DAP WG will produce **specification** documents.
  - These documents will define the common access language and how the data and metadata should be exposed and consumed in the IPDA. The documents will follow a standardization process.
  
- The DAP WG will produce guidelines to implement server and client instances



# Protocol Specification

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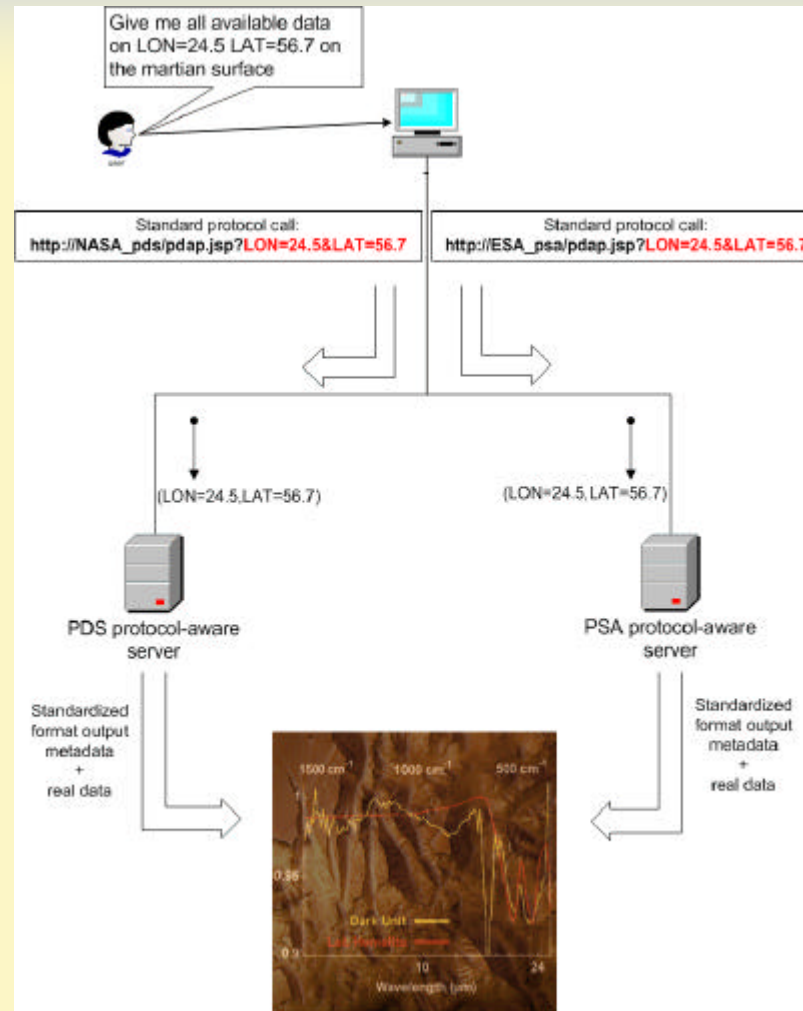
## Process Proposal

- A protocol specification should follow this process:
  - A need for a new access protocol is identified by the IPDA or by the community
  - The DAP WG will create a **Working Draft**. This working draft will evolve in a iterative process, taking internal and external inputs
  - Once the Working Draft is accepted as mature enough to be presented world wide, the document will pass to a **Proposed Recommendation** status
  - The document will be reviewed by the IPDA Steering Committee. In case no problems are found the document will pass to a **Recommendation** status. If problems are found, the document will go back to the working group for next iteration
  - Final state **Standard**



# Interoperability use case

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# DAP WG activity example:

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## PDAP

- Main existing outcome from the DAP WG:
  - PDAP (Planetary Data Access Protocol)
- Concept was born at the ESA/PSA and NASA/PDS Technical Interoperability Meeting, held January 10-12, 2006 in Madrid Spain
- Current version v0.2 working draft (Oct 2006)
  - Protocol to access Datasets, products and images
  - Prepared by PSA(ESA) and PDS(NASA) technical experts
  - Two servers implementations already in place (PDS and PSA)
  - Two client implementations, different flavors
    - PSA Mars Map client: Geometrical searches for PDS/PSA products
    - PDS dataset/product browser: PSA datasets/products access through PDAP



# Planetary Data Access

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## Protocol

- PDAP is a two steps protocol:
  - Metadata Access: Software Clients search for available data that match certain criteria. The matching criteria includes specific metadata and PDS keywords
  - Data Retrieval: Software client retrieve through a synchronous HTTP GET/POST request using a reference URL returned from first step
- Any PDAP server service implementation should be registered. Registration allows service discovery and get access to publisher/curation information
  - Interchange default format is VOTable (XML). This format can be easily parsed by a client and displayed in different ways



# PSA-ESTEC PDAP Map

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## Client

	PRODUCT_ID	DATA_ACCESS_REFERENCE
0	40032_0004_S92_IN01	http://psa.esac.esa.int:8000/aiw/jsp/product.jsp?datasetID=HEX-B-HRSC-3-RIR-V2_ObproductID=40032_0004_S92
1	40032_0004_S92_IN01	http://psa.esac.esa.int:8000/aiw/jsp/product.jsp?datasetID=HEX-B-HRSC-3-RIR-V2_ObproductID=40032_0004_S92
2	40032_0000_S12_IN01	http://psa.esac.esa.int:8000/aiw/jsp/product.jsp?datasetID=HEX-B-HRSC-3-RIR-V2_ObproductID=40032_0000_S12
3	40032_0000_N12_IN01	http://psa.esac.esa.int:8000/aiw/jsp/product.jsp?datasetID=HEX-B-HRSC-3-RIR-V2_ObproductID=40032_0000_N12
4	40032_0000_I12_IN01	http://psa.esac.esa.int:8000/aiw/jsp/product.jsp?datasetID=HEX-B-HRSC-3-RIR-V2_ObproductID=40032_0000_I12
5	40032_0000_BE2_IN01	http://psa.esac.esa.int:8000/aiw/jsp/product.jsp?datasetID=HEX-B-HRSC-3-RIR-V2_ObproductID=40032_0000_BE2
6	40032_0000_S22_IN01	http://psa.esac.esa.int:8000/aiw/jsp/product.jsp?datasetID=HEX-B-HRSC-3-RIR-V2_ObproductID=40032_0000_S22





# PDS OODT/PDAP Client

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Data Set	Instrument Host	Information About the Data Set	Data Products & Related Files	Other Resources
1. MARS EXPRESS ASPERA-3 RAW EDR ELECTRON SPECTROMETER V1.0		<a href="#">View Information for MEX-M-ASPERA3-2-EDR-ELS-V1.0</a>	<a href="#">Search for Products with PSA query service</a>	
2. MARS EXPRESS ASPERA-3 RAW EDR NEUTRAL PARTICLE IMAGER V1.0		<a href="#">View Information for MEX-M-ASPERA3-2-EDR-NPI-V1.0</a>	<a href="#">Search for Products with PSA query service</a>	
3. MARS EXPRESS ESOC AUXILIARY DATA V1.0		<a href="#">View Information for MEX-M-ESOC-6-AUXILIARY-DATA-V1.0</a>	<a href="#">Search for Products with PSA query service</a>	
4. HRSC REDRs		<a href="#">View Information for MEX-M-HRSC-3-RDR-V2.0</a>	<a href="#">Search for Products with PSA query service</a>	
5. HRSC REDRs		<a href="#">View Information for MEX-M-HRSC-5-REFDR-MAPPROJECTED-V2.0</a>	<a href="#">Search for Products with PSA query service</a>	
6. MARS EXPRESS MARS MRS CRUISE 1 V1.0		<a href="#">View Information for MEX-M-MRS-1/2/3-CR1-0009-V1.0</a>	<a href="#">Search for Products with PSA query service</a>	
7. MARS EXPRESS MARS MRS CRUISE 1 V1.0		<a href="#">View Information for MEX-M-MRS-1/2/3-CR1-0011-V1.0</a>	<a href="#">Search for Products with PSA query service</a>	
8. MARS EXPRESS MARS MRS MISSION COMMISSIONING V1.0		<a href="#">View Information for MEX-M-MRS-1/2/3-MCC-0013-V1.0</a>	<a href="#">Search for Products with PSA query service</a>	
9. MARS EXPRESS MARS MRS MISSION COMMISSIONING V1.0		<a href="#">View Information for MEX-M-MRS-1/2/3-MCC-0015-V1.0</a>	<a href="#">Search for Products with PSA query service</a>	
10. MARS EXPRESS MARS MRS MISSION COMMISSIONING V1.0		<a href="#">View Information for MEX-M-MRS-1/2/3-MCC-0016-V1.0</a>	<a href="#">Search for Products with PSA query service</a>	
11. MARS EXPRESS MARS MRS MISSION COMMISSIONING V1.0		<a href="#">View Information for MEX-M-MRS-1/2/3-MCC-0017-V1.0</a>	<a href="#">Search for Products with PSA query service</a>	
12. MARS EXPRESS MARS MRS MISSION COMMISSIONING V1.0		<a href="#">View Information for MEX-M-MRS-1/2/3-MCC-0018-V1.0</a>	<a href="#">Search for Products with PSA query service</a>	
13. MARS EXPRESS MARS MRS MISSION COMMISSIONING V1.0		<a href="#">View Information for MEX-M-MRS-1/2/3-MCC-0021-V1.0</a>	<a href="#">Search for Products with PSA query service</a>	
14. MARS EXPRESS MARS MRS MISSION COMMISSIONING V1.0		<a href="#">View Information for MEX-M-MRS-1/2/3-MCC-0022-V1.0</a>	<a href="#">Search for Products with PSA query service</a>	
15. MARS EXPRESS MARS MRS MISSION COMMISSIONING V1.0		<a href="#">View Information for MEX-M-MRS-1/2/3-MCC-0024-V1.0</a>	<a href="#">Search for Products with PSA query service</a>	
16. MARS EXPRESS MARS MRS MISSION COMMISSIONING V1.0		<a href="#">View Information for MEX-M-MRS-1/2/3-MCC-0026-V1.0</a>	<a href="#">Search for Products with PSA query service</a>	

DAP WG  
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# DAP WG: Future steps

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- ❑ DAP Charter to be discussed and agreed upon
- ❑ Support to Planetary Archives in implementation
- ❑ Evolution of the PDAP specification and support for server and client implementations
- ❑ Identification of possible extensions/protocols for new products (Spectra, Time Series, Data Tables,...) or new use cases
- ❑ Provide to the community software and libraries for the IPDA DAP specifications
- ❑ Define resource discovery common for all agencies
- ❑ Define fine grain query language

