OV Planétologie : EuroPlaNet & beyond

Stéphane Erard

Réunion ASOV 2011

16-17/01/2012

stephane.erard@obspm.fr

Europlanet-RI

Science infrastructure program in FP7

Themes/goals

Planetary analogues: Samples, fields…

Mission support, data access… planetary VO

Networking: conf, exchange…

(TNA)

(NA)

Actions (JRA)

Mission support

Facilities

Models

VOs/data ⊕ SA-IDIS: distribution

IDIS

tasks

Coord.

interoperable data access

added value services

new data

Setting the basis of a European Planetary Science VO

Distribution of db developed during the program

Planetary Science VO — Objectives

- Making data search in archives easy
- Allowing quick-look visualization of data
- Allowing external users to include their data

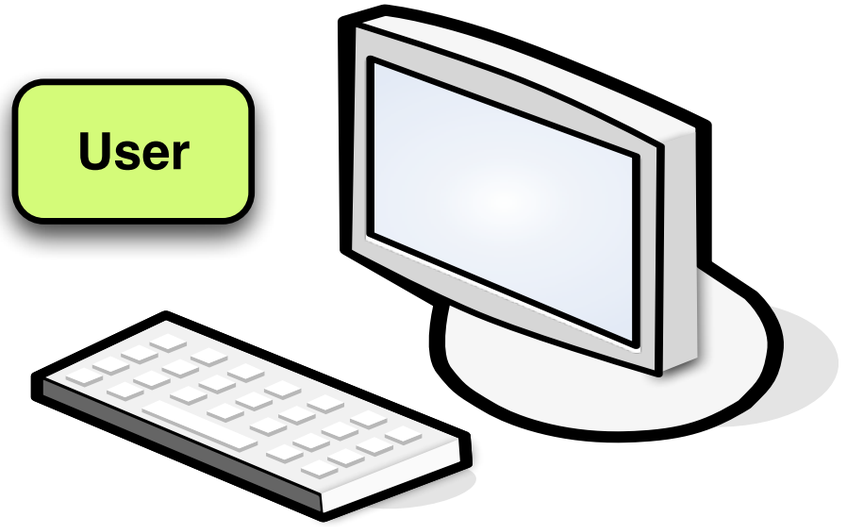
} Initial set-up in JRA4

- Making "small" derived data sets accessible
- Developing specific processing tools

} Contributions by external users

=> Provide services to the community, not paperwork

Overall architecture



User

Queries

Answers

Catalogue / Registry

SSODnet

GhoSST
KIDA

PSA

AMDA…

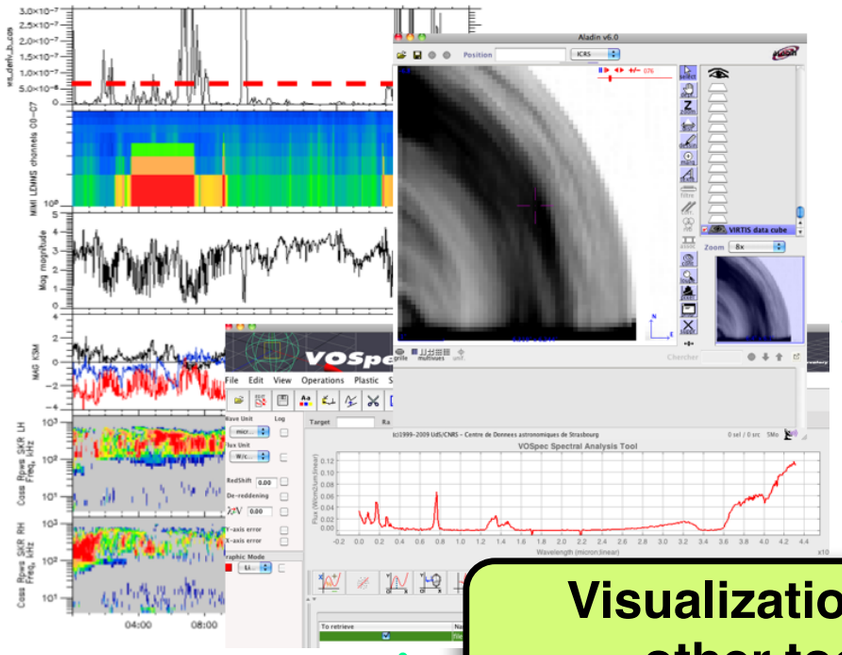
EPN

PDS

Data bases

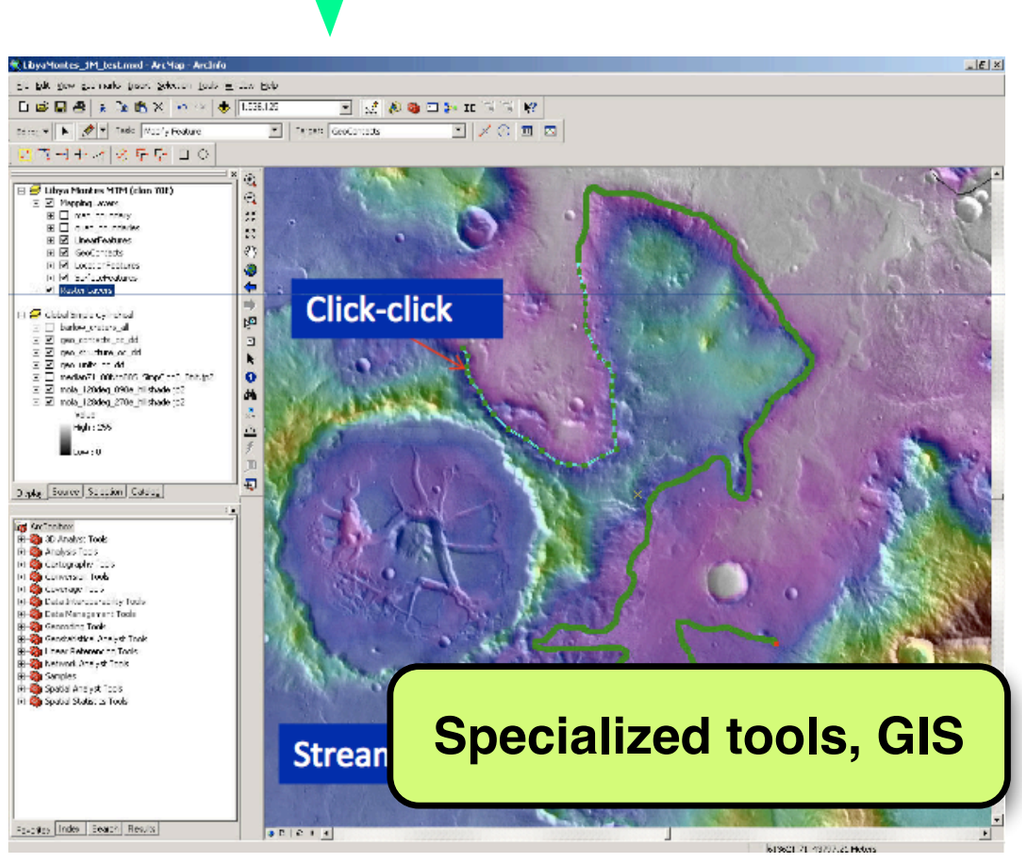
Space agency archives

Data access



Data exchange

Visualization and other tools



Specialized tools, GIS

Variety of data

- Perimeter of data to be accessed
  - Ground-based: moving objects on dark sky
  - Space-borne (PSA/PDS), including HR imaging
  - Time series
  - Parameter lists
  - Atmospheric / 3D
  - Volume (internal structure, electro-magnetic fields)
  - Variations with time (secular, seasonal, local time)
  - Experimental / lab (including data from EuroPlaNet + external)

- Physical data access:
  - Main issue: existing PDS archives (no software!)
  - FITS (sometimes)
  - + funny formats

Contributors to EuroPlaNet / IDIS

OV-Paris (=> Le Sidaner et al. PV2011)
CDPP/CESR (=> André et al. PV2011)
DLR
IASF/INAF
LATMOS/IPSL
IWF-Graz
IPAG, Obs. Bordeaux (=> Schmitt et al. EPSC)

} EuroPlaNet-RI / JRA4

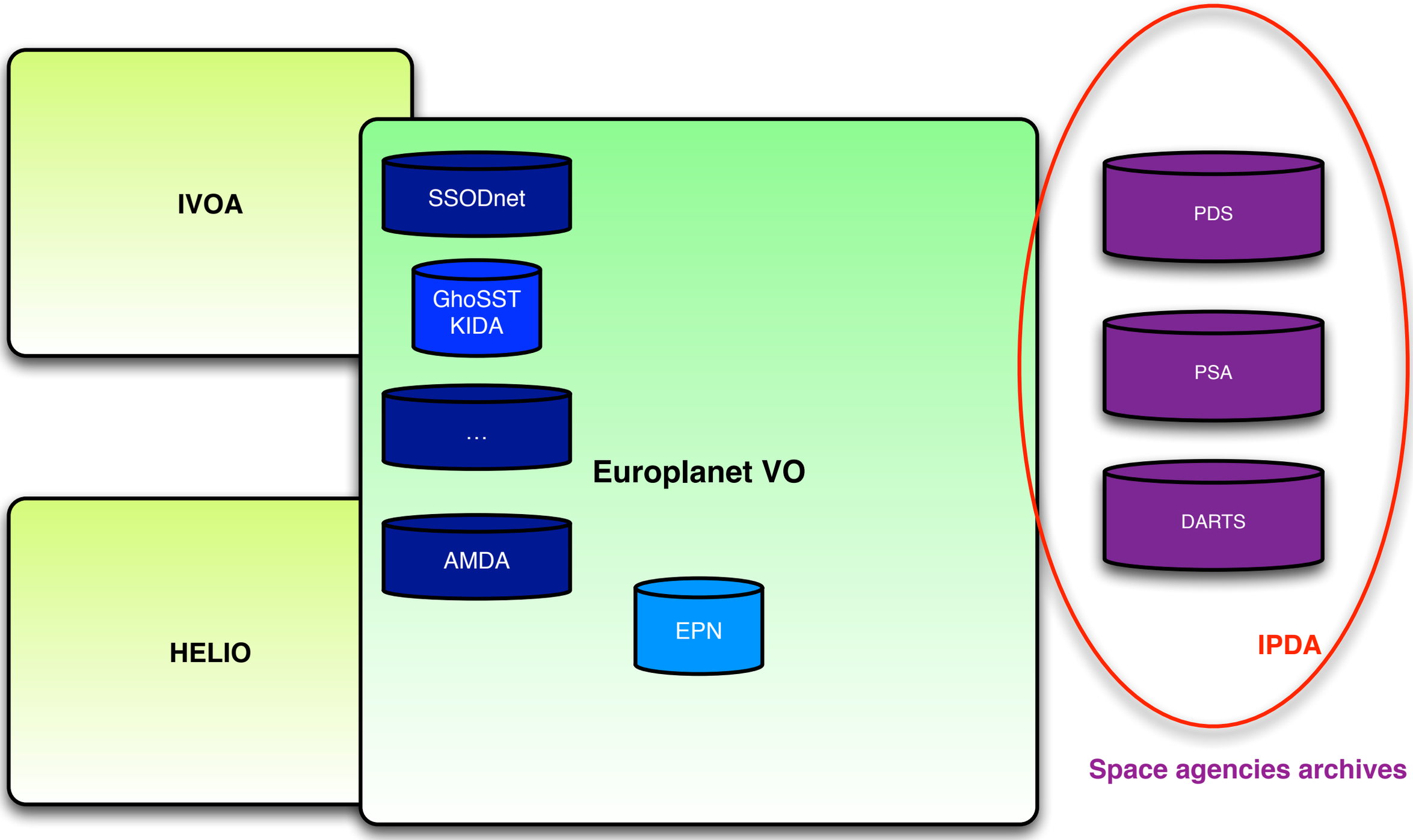
ESAC/ESA
CNES (=> Malapert et al. PV2011)
IDES/CNRS (=> Marmo et al. ADAS XXI)
…

} External contributions

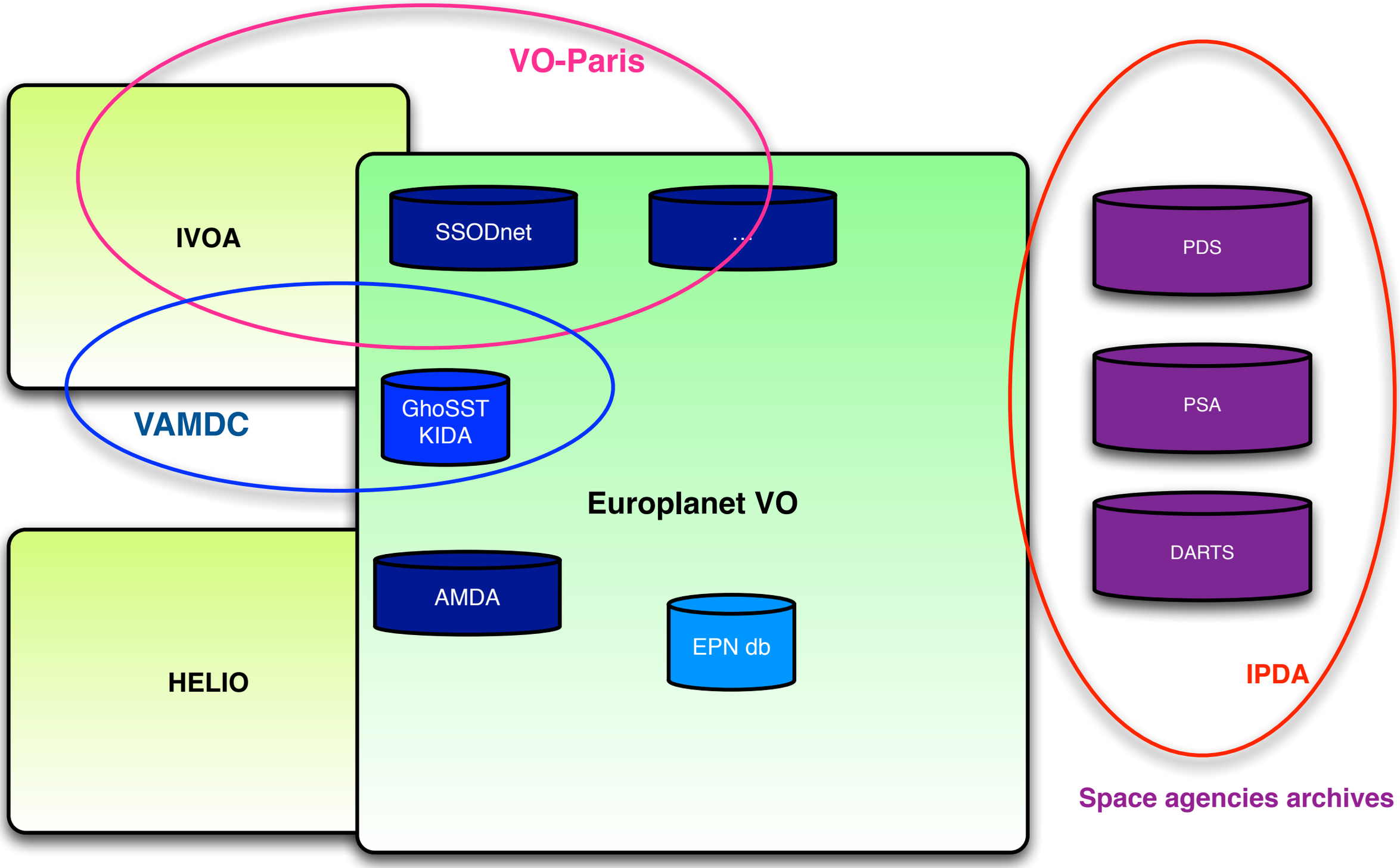
IVOA
IPDA
PDS / NASA

} Context

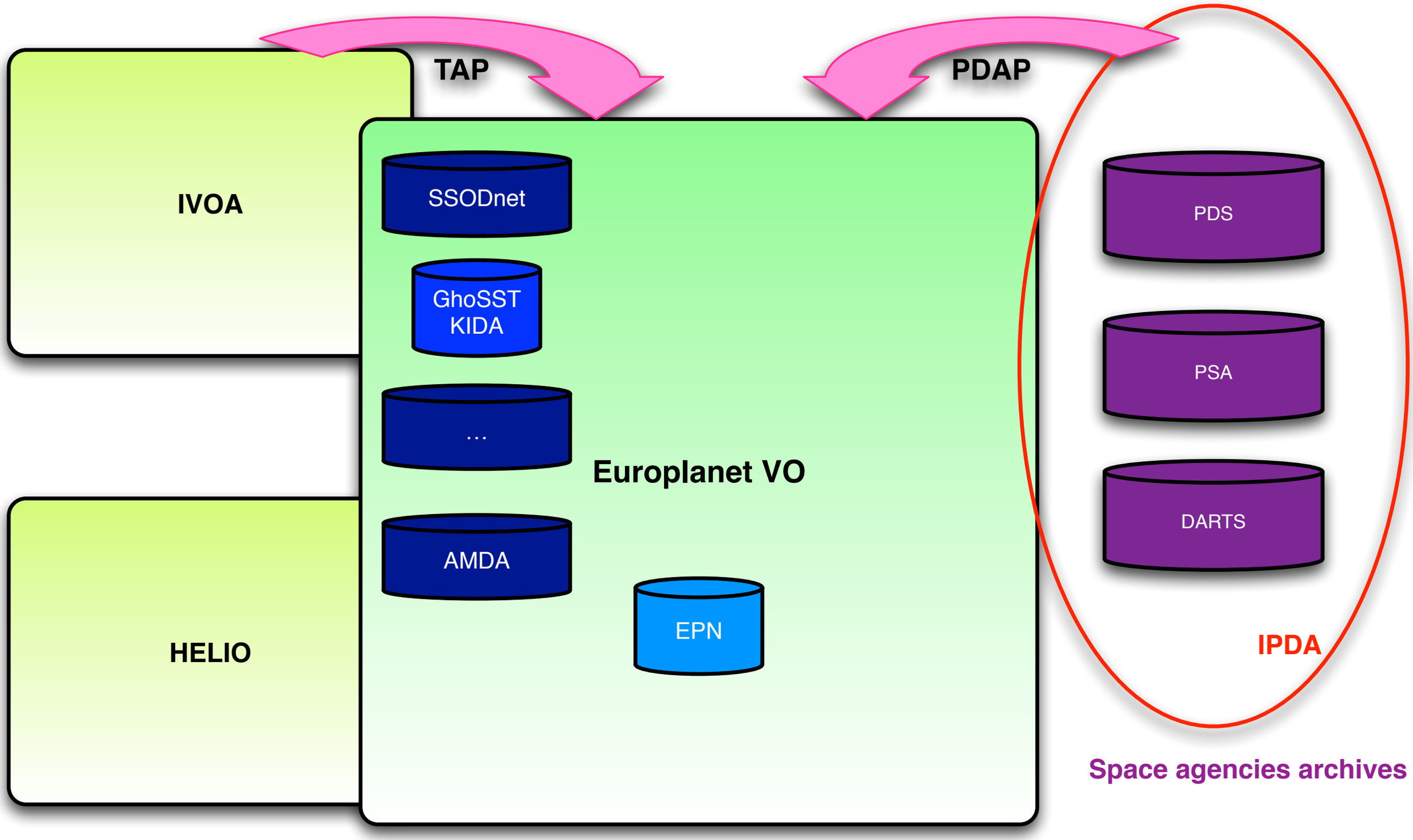
International context



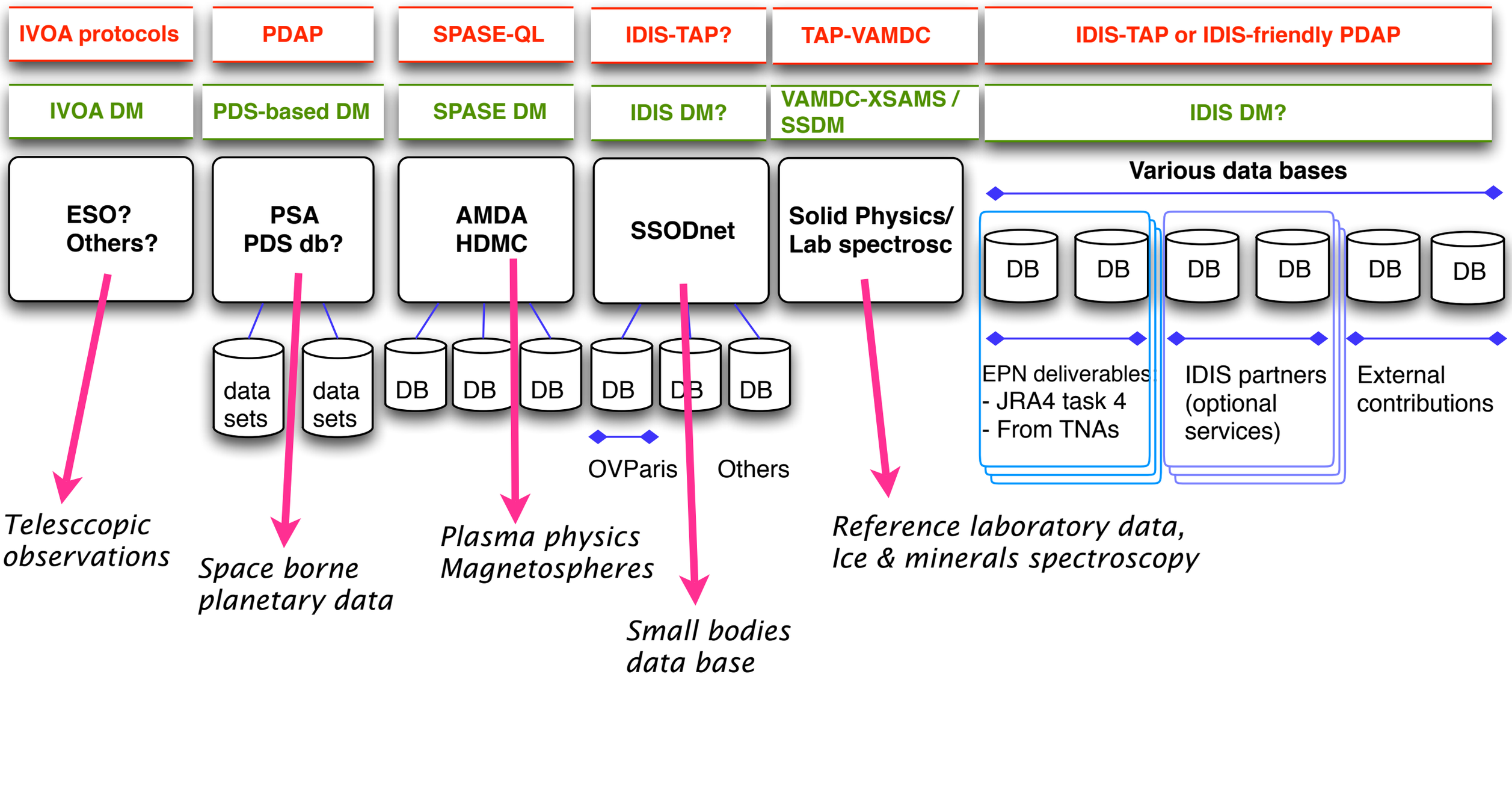
International context



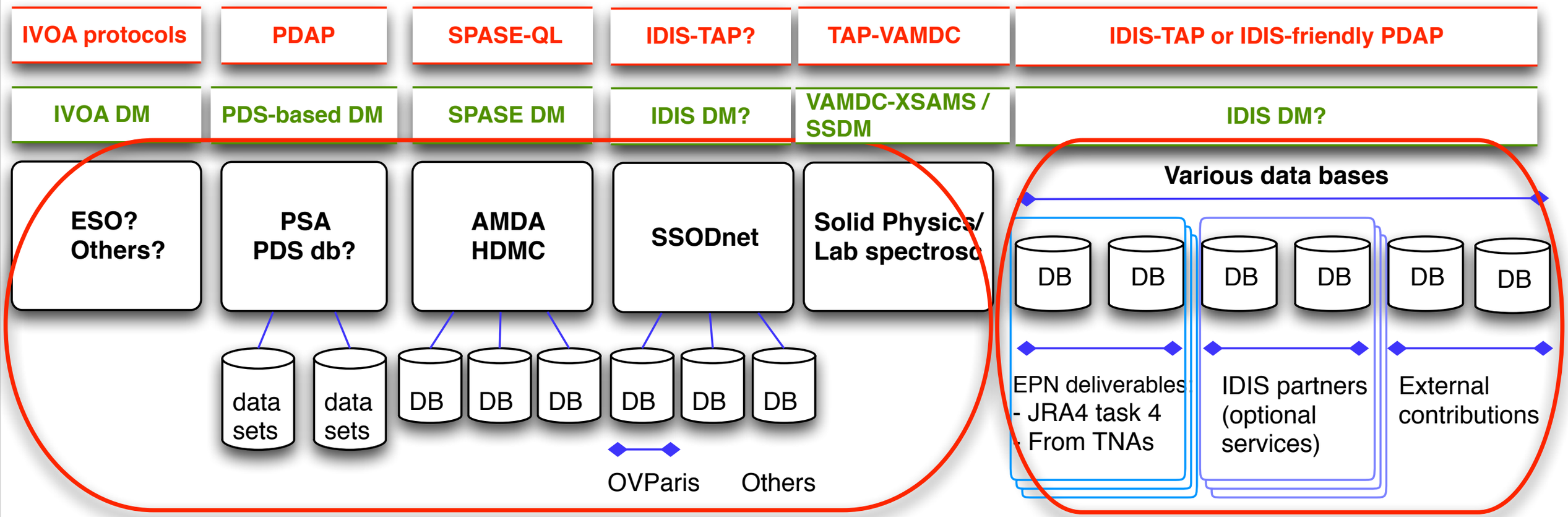
International context



Data scope / access



Data scope / access



Big data repositories

Individual data bases
+ collections related to EPN

→ *Big services: usually have interface layer, DM + protocol*
Smaller, topical services: specific DM + protocol required for IDIS

OV-Paris data services

Existing DB and DB in development:

- SSODnet (small bodies data service)
- Natural satellites data centre
- Comet ephemeris
- Extrasolar Planets Encyclopedia
- Natural Satellites Center

} currently support IVOA standards

- Atmospheric profiles of Mars & Titan
- Comet spectroscopy from Nançais
- Historical images cured in Meudon (IAU project)

} VO interface to be developed

Services:

- Skybot (inverted ephemeris)
- Miriade / SSO ephemeris
- Solar System name resolver

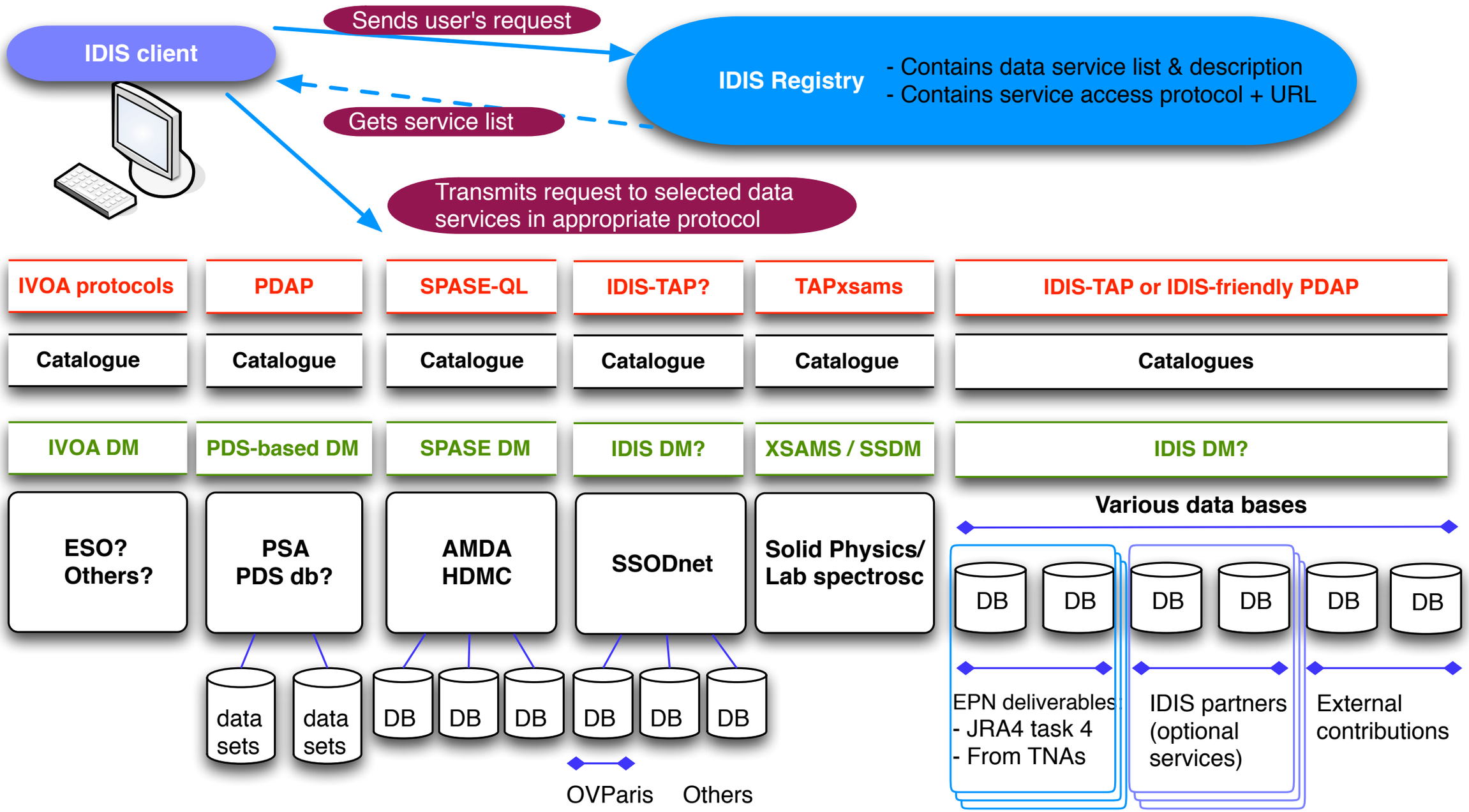
All DB are accessible from VO-Paris IDIS node

Collection of users feedback / requirements:

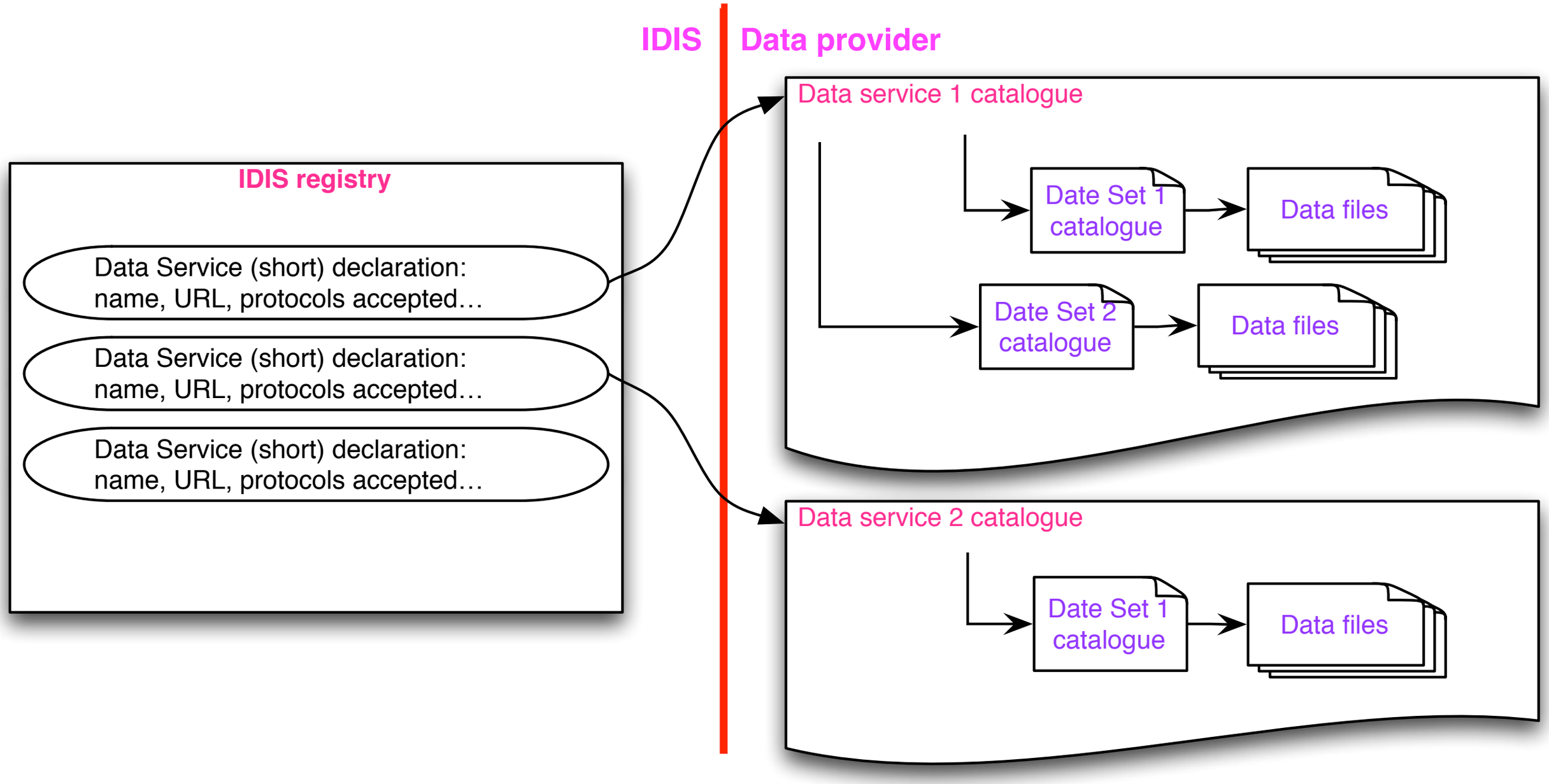
- French annual workshop → *Atelier VO-Planéto*
- (Europlanet users advisory board)

http://voparis-europlanet.obspm.fr/

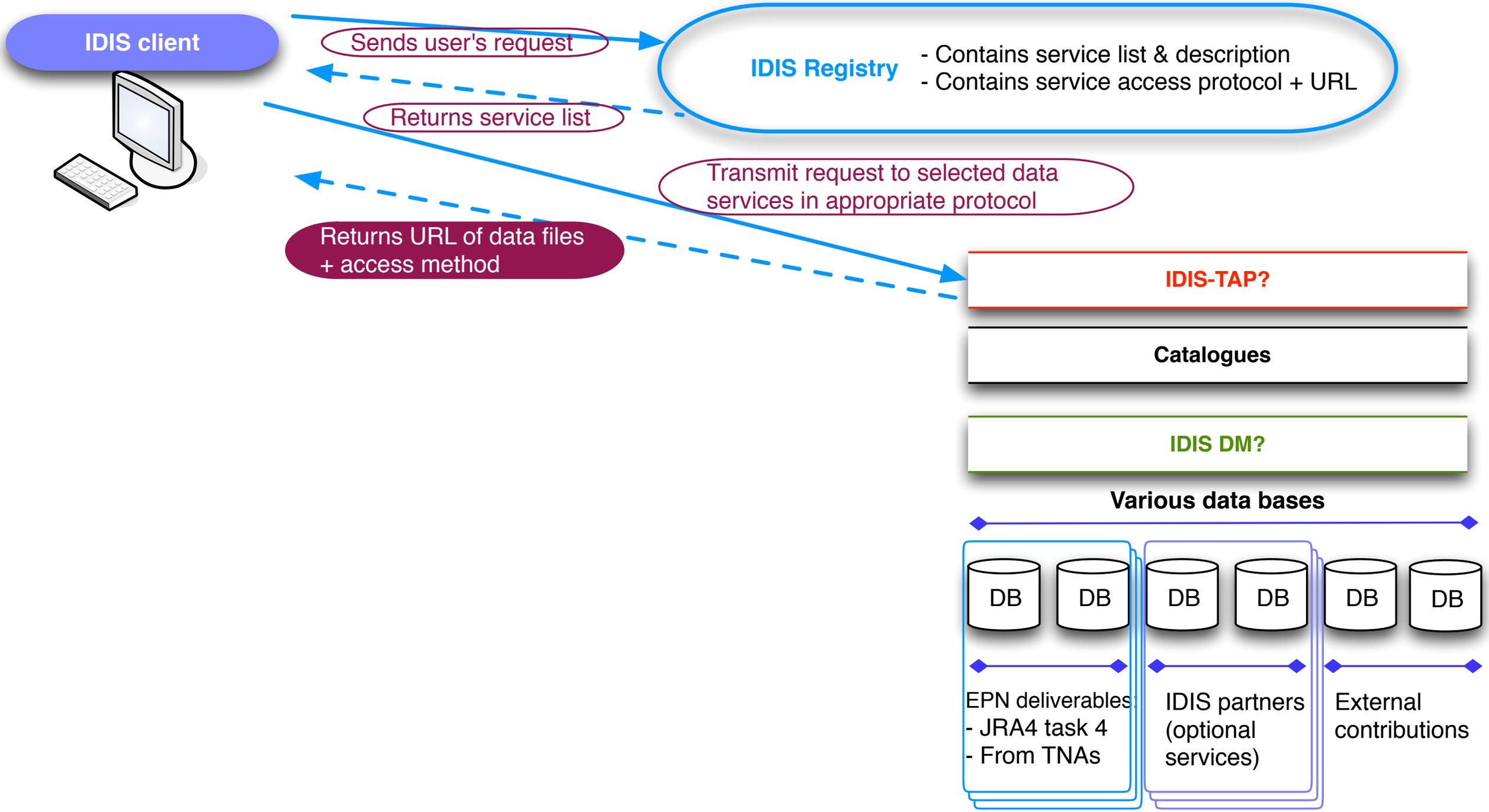
Registry / catalogue



Registry / catalogue



- Contains description of data services only
- IVOA compliant → *re-use IVOA registry at VO-Paris?*


IDIS client
Sends user's request
IDIS Registry
- Contains service list & description
- Contains service access protocol + URL
Returns service list
Transmit request to selected data services in appropriate protocol
Returns URL of data files + access method
IDIS-TAP?
Catalogues
IDIS DM?
Various data bases
DB
DB
DB
DB
DB
DB
EPN deliverables:
- JRA4 task 4
- From TNAs
IDIS partners (optional services)
External contributions

IDIS client

Sends user's request

Returns service list

IDIS Registry
- Contains service list & description
- Contains service access protocol + URL

Transmit request to selected data services in appropriate protocol

Returns URL of data files + access method

Answers formatted as VOTables

IDIS-TAP?

Catalogue

IDIS DM?

SSODnet

DB DB DB

OVParis Others?

IDIS-TAP?

Catalogues

IDIS DM?

Various data bases

DB DB DB DB DB DB

EPN deliverables:
- JRA4 task 4
- From TNAs

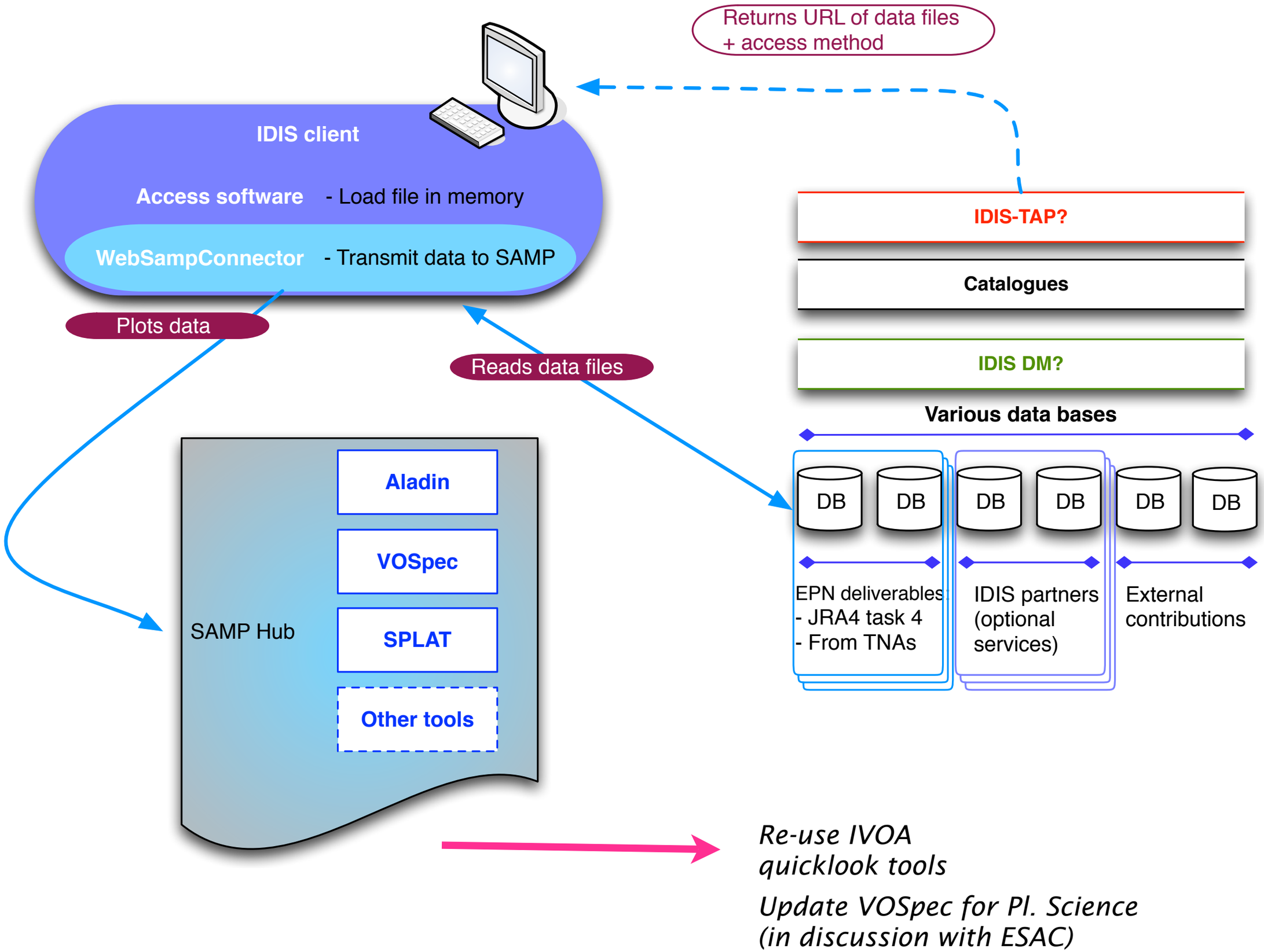
IDIS partners (optional services)

External contributions

SItools2 ?

- Provides data management services
- Helps mapping data in Data Model
- Provides catalogue search functions
- Implements basic VO protocols
- Implements WMS service (for Earth observation)

Visualization Services



Re-use IVOA quicklook tools

Update VOSpec for Pl. Science (in discussion with ESAC)

Looping the loop

Define IDIS DM
- DM working group (animated B. Cecconi)
- IVOA compliant (thanks to J. Berthier) ~ ObsCore
- Inputs from task-2 partners
- + users inputs, Atelier OV-Planéto 2010/2011

} Complete draft June 2012?

Define IDIS-TAP protocol
- Variation on TAP
- Complements inspired from PDAP

} Draft spring 2012

IDIS client
- VO-Paris web portal (many protocols)
- + WebSampConnector
- + PDS client (recycled from Virtis experiment)

} Demos on line

New resources
- SSODnet — Expected Nov 2012
- + Object name resolver + Ephemeris server
- AMDA complements

} On line

- GhoSST + DM — In progress
- VO-compliant data bases / computation services

Prospects

DM completion

First version will only cover selected fields

(images, spectro, small bodies properties, plasma…)

=> to be completed by other participants

Will only provide minimal description of data

=> to be completed after end of EPN pgr, if need be (new ucd…)

EPN sustainability

What will happen after end of program?

=> Importance of services to users (as opposed to completion of DM)

No further opportunity in EU FP (no possible founding for development)

=> Join IVOA WGs to handle Planetary Science?

Teams interested in pursuing VO activity:

VO-Paris / CDPP / IPAG (from EPN)

IDES? LPG? (non EPN)

Software engineers + astronomer services required in laboratories:

based on experiments/modeling/processing + activity extended to VO interfaces

Foreign groups?