

VESPA for PSWS

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EPN2020RI-DMP

- Please read it!
- All scientific data produced by EPN2020RI beneficiaries must be shared through VESPA.
- **All PSWS event catalogues will have to be shared through VESPA.**
- PSWS data collection are catalogues.
This is very easy to share with VESPA.

Sharing your PSWS catalogue in VESPA

- VESPA main data sharing interface is using the IVOA standard TAP (Table Access Protocol). The goal is to share metadata catalogues including “coverage”, “provenance” and “access” information for each shared data product. More info: <http://discussions.europlanet-vespa.eu>
- Each data provider is hosting his own data server, and is managing his own metadata catalogues (EPNcore tables).
TAP+EPNcore = EPN-TAP
- Each EPNcore table must contain a set of columns with predefined names and units. Additional columns may be added when necessary.

Overview of Europlanet/VESPA

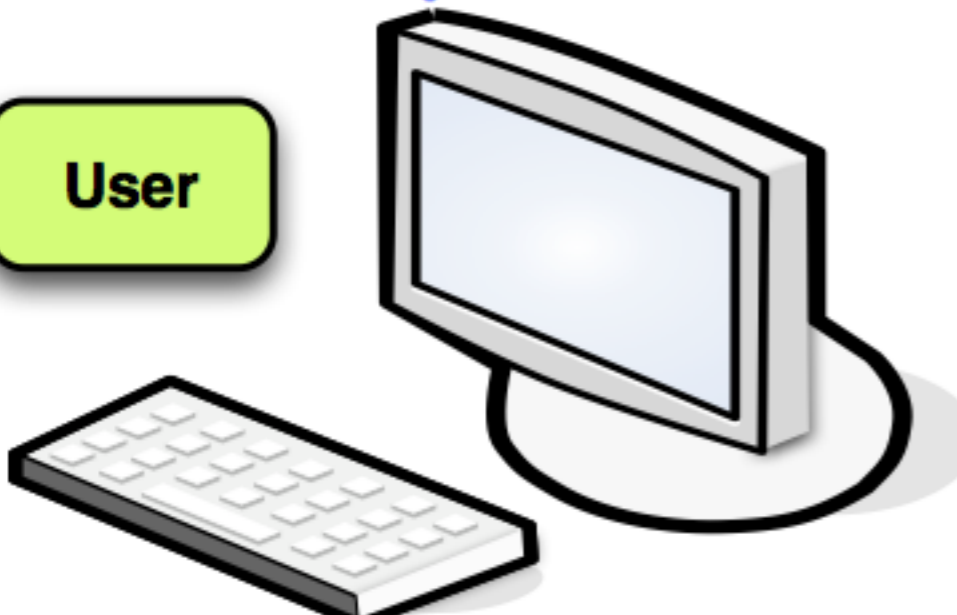
- VESPA is a “virtual research infrastructure”. It provides tools to share, access and work with data using standard protocols.
- VESPA is using existing standards developed by the astronomy community (IVOA). Hence the infrastructure is not maintained by VESPA.
- VESPA data services are hosted by science teams, and must be registered with the IVOA registry to be accessible from VO tools.
- NB: *Tools and libraries have been selected for their ease of operation.*

The Europlanet H2020 Research Infrastructure project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 654208.

User's experience

«classic»

User



Search Data
(many interfaces)

Get Data
(many formats)

SSODnet

GhoSST
KIDA

AMDA...

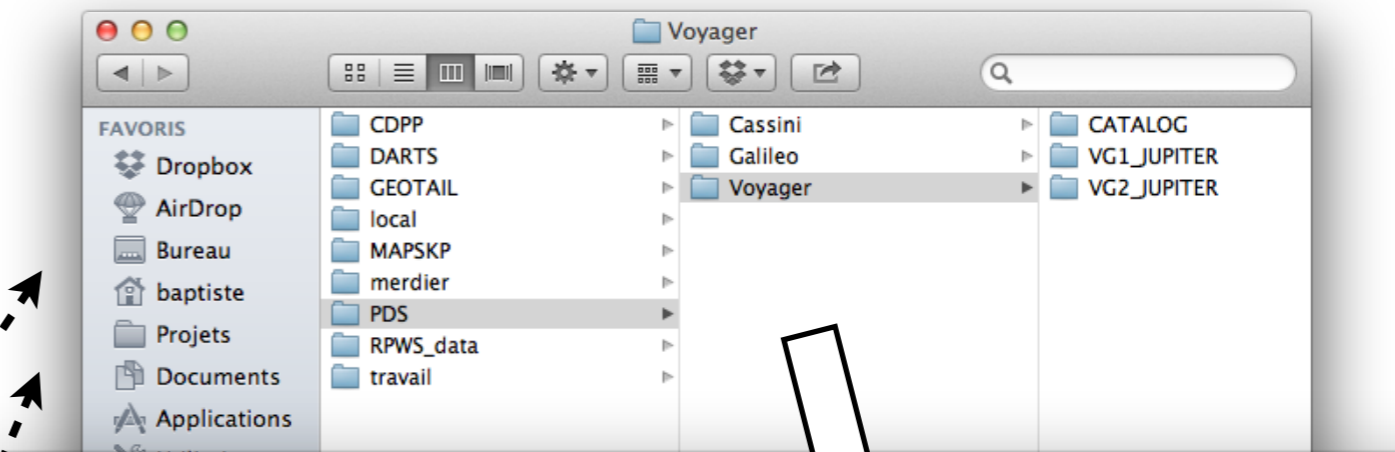
EPN

Data bases

PSA

PDS

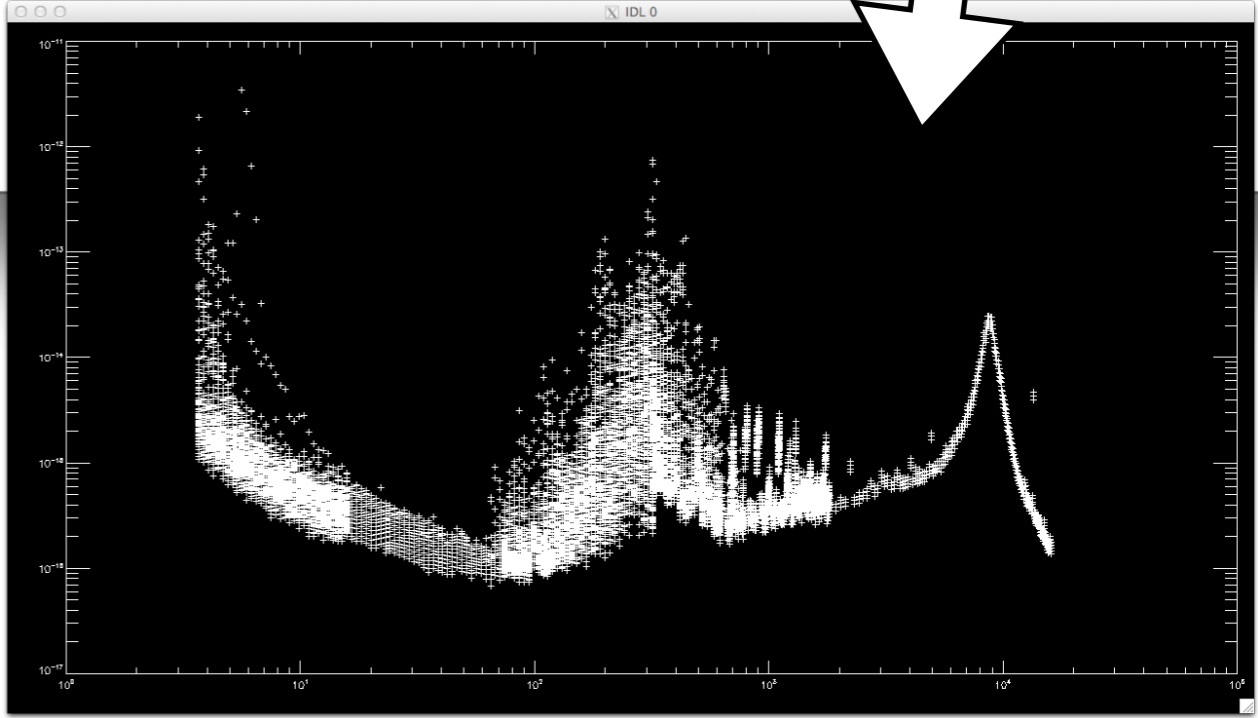
Space agency archives



```
Terminal — idl — 24
[macbookbc:~] baptiste% cd /Volumes/Data/CDPP/NEW_DATA/Cassini/.../RPWS/QTN
[macbookbc:Cassini/.../RPWS/QTN] baptiste% idl_rpws
IDL Version 7.0, Mac OS X (darwin i386 m32). (c) 2007, ITT Visual Information Solutions
Installation number: 35384.
Licensed for personal use by Baptiste Ceconi only.
All other use is strictly prohibited.

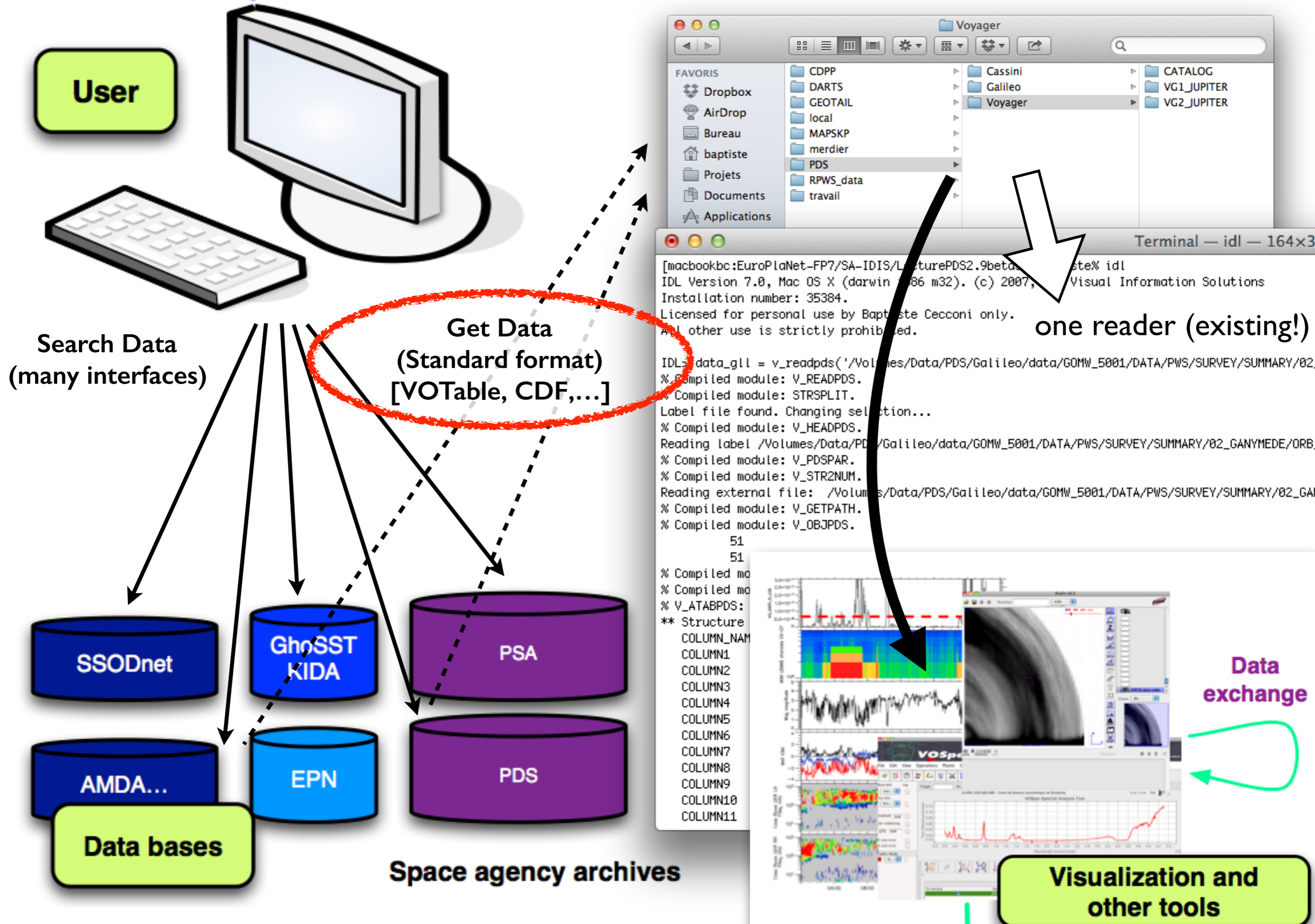
IDL> read_data_binary, '/Volumes/Data/RPWS_data/2005_181_270/n2/P2005234.08', n2, level='n2'
% Compiled module: READ_DATA_BINARY.
% Compiled module: DATA_N2__DEFINE.
IDL> data=read_qtn_cdpp_data( '/Volumes/Data/CDPP/NEW_DATA/Cassini/.../RPWS/QTN/RPWS_QTN.dat' )
% Compiled module: READ_QTN_CDPP_DATA.
% Compiled module: QTN_DATA__DEFINE.
% Compiled module: ASCII_AMJ.
% Compiled module: AMJ_AJ.
% Compiled module: AJ_T97.
IDL> plot_oo, n2.f, n2.autox, psym=3
% X windows protocol error: GLXBadContext.
IDL>
IDL>
IDL>
IDL>
IDL>
IDL>
```

many readers (to write!)



User's experience

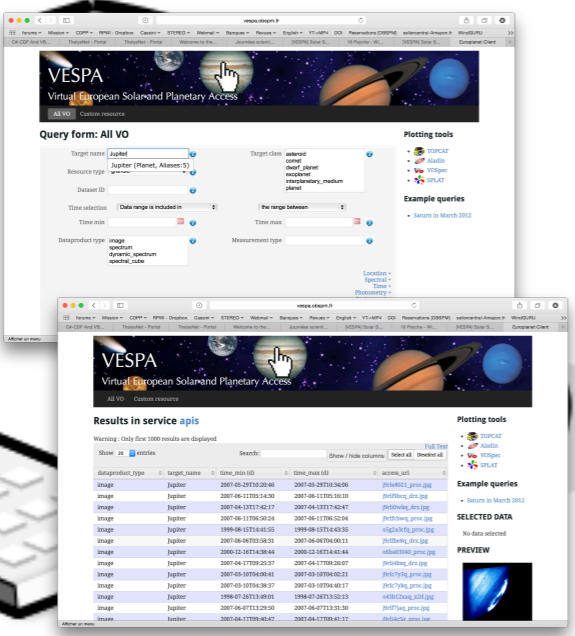
«enhanced»



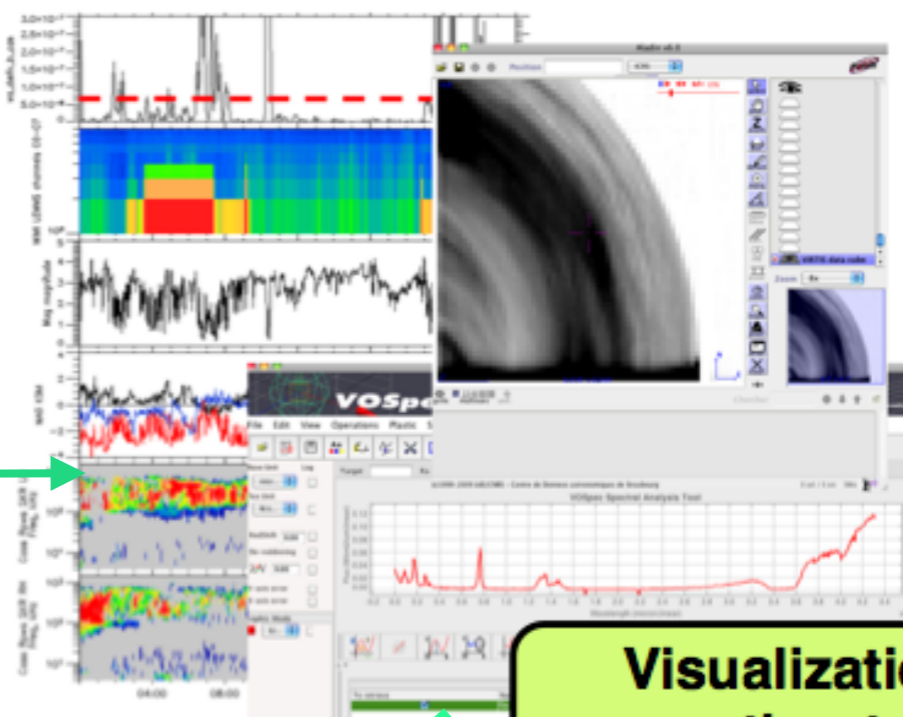
User's experience

«ultimate»

User



List of Result



Data exchange

Search Data (one simple interface)

form VESPA-client

Visualization and other tools

Standard Query

Standard Answer

Automated Data Access

Catalogue / Registry

SSODnet

GhoSST KIDA

PSA

AMDA...

EPN

PDS

Data bases

Space agency archives

```

[macbookbc:~/EuroPlanet-FP7/SA-IDIS/LecturePDS2.9beta3] baptiste% idl
IDL Version 7.0, Mac OS X (darwin i386 m32). (c) 2007, ITT Visual Information Solutions
Installation number: 35384.
License for personal use by Baptiste Ceconi only.
All other use is strictly prohibited.

IDL> data_gll = v_readpds('/Volumes/Data/PDS/Galileo/data/GOMW_5001/DATA/PWS/SURVEY/SUMMARY/
% Compiled module: V_READPDS.
% Compiled module: STRSPLIT.
Label file found. Changing selection...
% Compiled module: V_HEADPDS.
Reading label /Volumes/Data/PDS/Galileo/data/GOMW_5001/DATA/PWS/SURVEY/SUMMARY/82_GANYMEDE
% Compiled module: V_STR2NUM.
Reading external file: /Volumes/Data/PDS/Galileo/data/GOMW_5001/DATA/PWS/SURVEY/SUMMARY/
% Compiled module: V_GETPATH.
% Compiled module: V_OB3PDS.
51
51
% Compiled module: V_ATABPDS.
% Compiled module: V_POINTPDS.
% V_ATABPDS: Now reading table with 50 Columns and 1369 Rows
** Structure <44bca04>, 51 tags, length=553676, data length=553676, refs=1:
COLUMN_NAMES  STRING  Array[50]
COLUMN1       DOUBLE  Array[1369]
COLUMN2       DOUBLE  Array[1369]
COLUMN3       DOUBLE  Array[1369]
COLUMN4       DOUBLE  Array[1369]
COLUMN5       DOUBLE  Array[1369]
COLUMN6       DOUBLE  Array[1369]
COLUMN7       DOUBLE  Array[1369]
COLUMN8       DOUBLE  Array[1369]
COLUMN9       DOUBLE  Array[1369]
COLUMN10      DOUBLE  Array[1369]
COLUMN11      DOUBLE  Array[1369]
  
```

Click-click

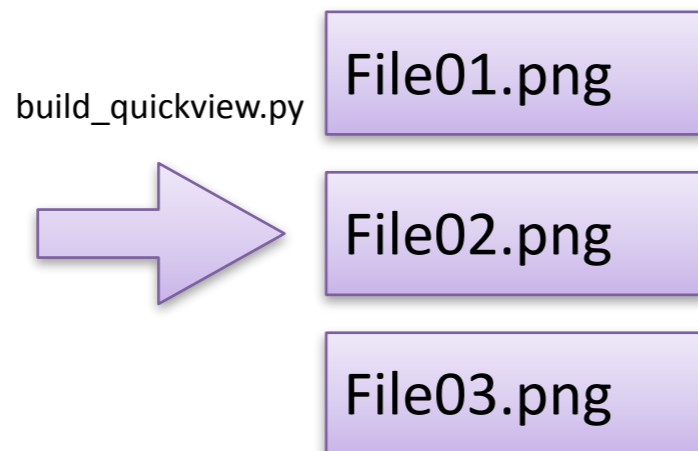
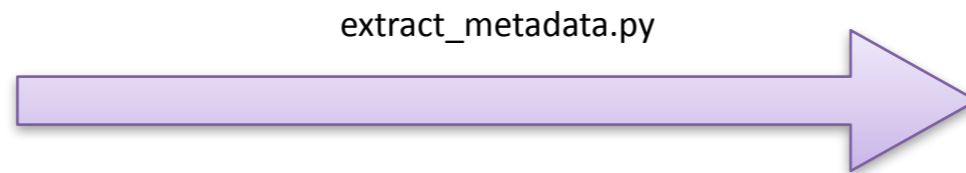
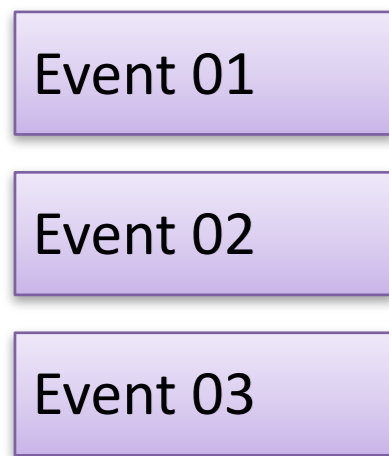
Stream

Specialized tools, GIS

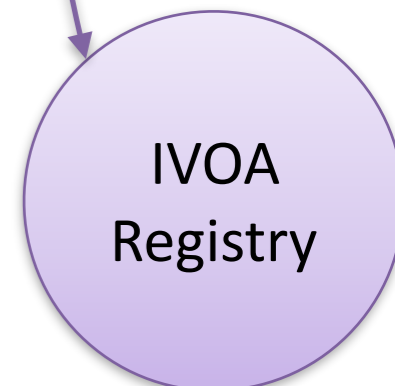
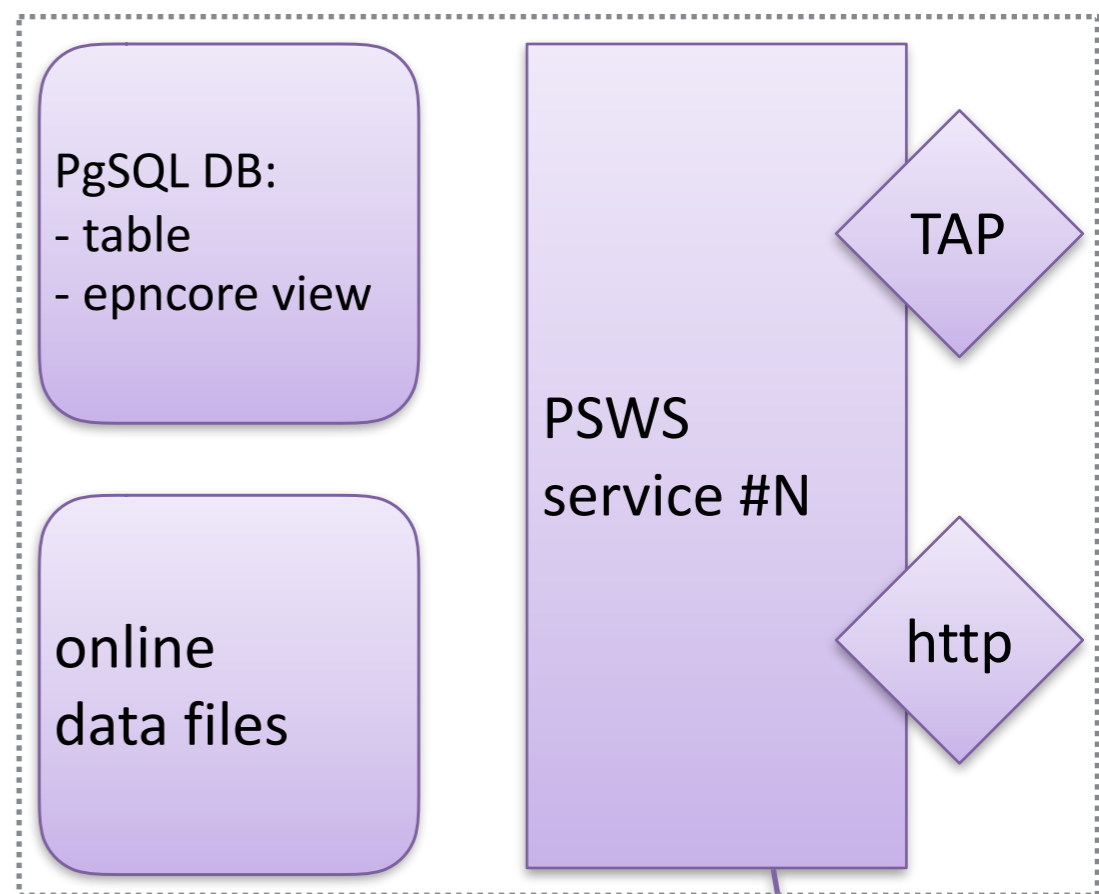
PSWS Catalogue

using VESPA infrastructure: on data provider side

Event Catalogue



Data Server



JUNO-Ground-Radio

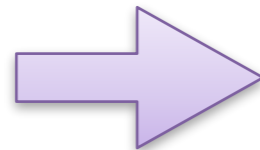
using VESPA infrastructure: on data provider side

Data Files

File01.bin

File02.bin

File03.bin



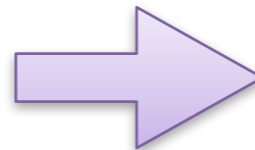
build_CDF.py

File01.cdf

File02.cdf

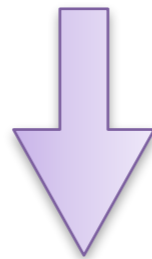
File03.cdf

extract_metadata.py



PgSQL DB:
- table
- epncore view

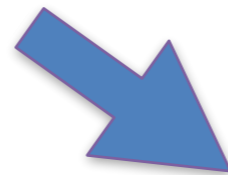
build_quickview.py
+ autoplot jython



File01.png

File02.png

File03.png



online
data files

Data Server

Juno
Ground
Radio
service #N

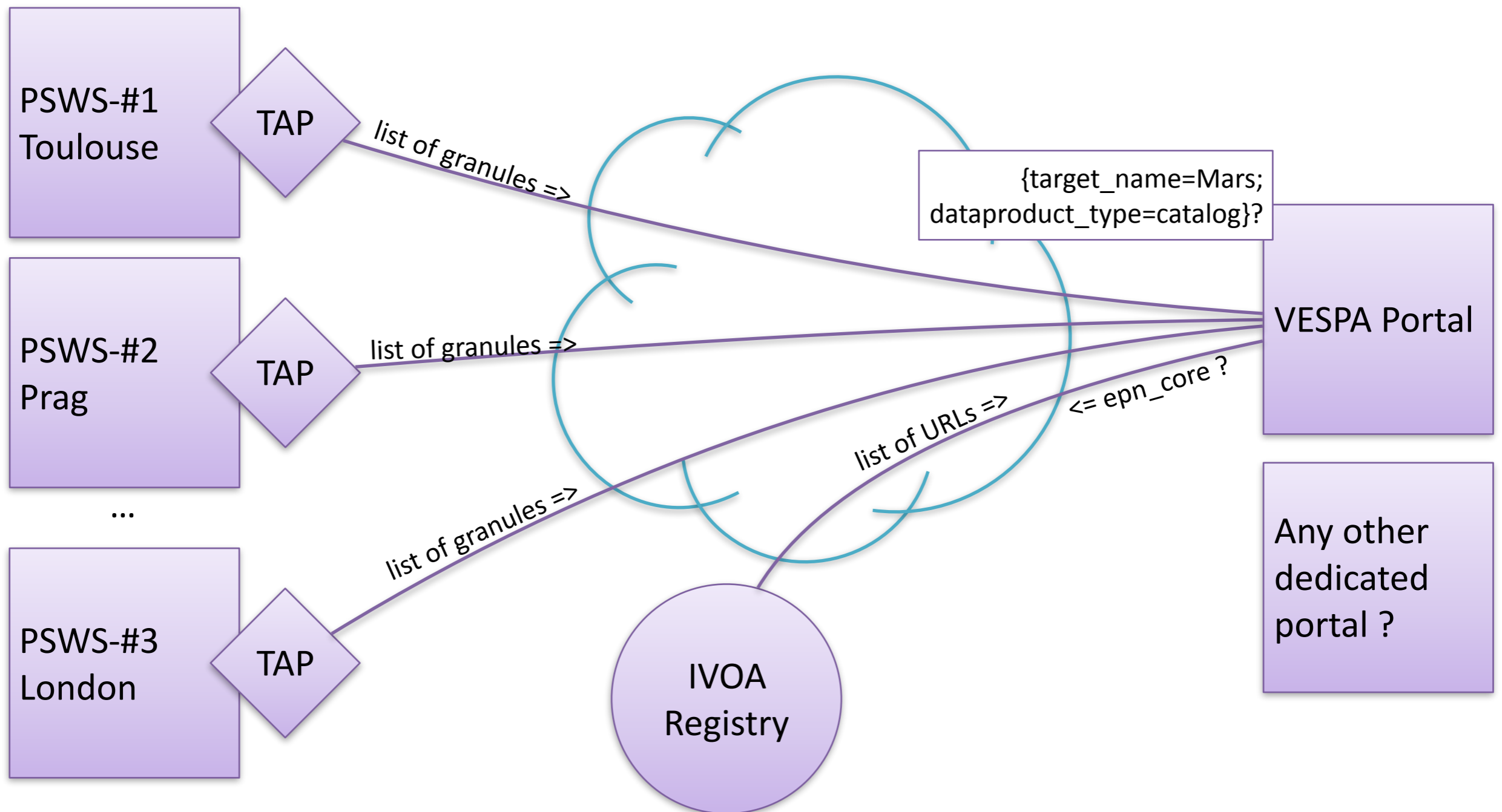


JUNO-Ground-Radio

using VESPA infrastructure

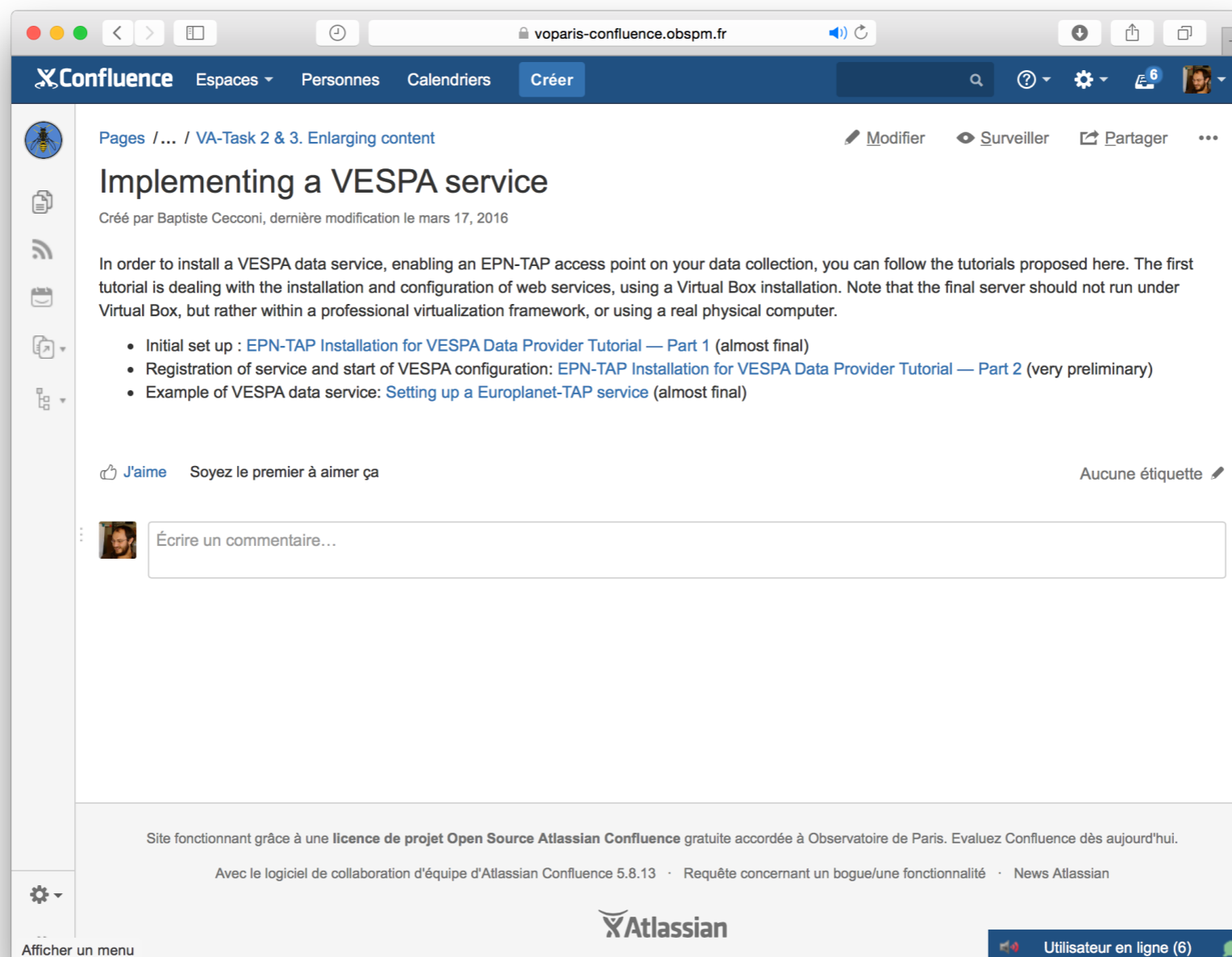
Data Providers

Users



Installing a VESPA server

- Tutorials available here:
<https://voparis-confluence.obspm.fr/display/VES/Implementing+a+VESPA+service>



The screenshot shows a web browser window displaying a Confluence page. The browser's address bar shows the URL `voparis-confluence.obspm.fr`. The page header includes the Confluence logo and navigation links: 'Espaces', 'Personnes', 'Calendriers', and 'Créer'. The main content area features a breadcrumb trail 'Pages / ... / VA-Task 2 & 3. Enlarging content', followed by the title 'Implementing a VESPA service' and the author 'Créé par Baptiste Cecconi, dernière modification le mars 17, 2016'. The page body contains a paragraph explaining the installation process and a bulleted list of three tutorial links. Below the text is a 'J'aime' button and a comment input field. The footer includes a notice about the Open Source license, the Atlassian logo, and a status bar indicating 'Utilisateur en ligne (6)'.

Pages / ... / VA-Task 2 & 3. Enlarging content

Implementing a VESPA service

Créé par Baptiste Cecconi, dernière modification le mars 17, 2016

In order to install a VESPA data service, enabling an EPN-TAP access point on your data collection, you can follow the tutorials proposed here. The first tutorial is dealing with the installation and configuration of web services, using a Virtual Box installation. Note that the final server should not run under Virtual Box, but rather within a professional virtualization framework, or using a real physical computer.

- Initial set up : [EPN-TAP Installation for VESPA Data Provider Tutorial — Part 1](#) (almost final)
- Registration of service and start of VESPA configuration: [EPN-TAP Installation for VESPA Data Provider Tutorial — Part 2](#) (very preliminary)
- Example of VESPA data service: [Setting up a Europlanet-TAP service](#) (almost final)

J'aime Soyez le premier à aimer ça

Aucune étiquette

Écrire un commentaire...

Site fonctionnant grâce à une licence de projet Open Source Atlassian Confluence gratuite accordée à Observatoire de Paris. Évaluez Confluence dès aujourd'hui.

Avec le logiciel de collaboration d'équipe d'Atlassian Confluence 5.8.13 · Requête concernant un bogue/une fonctionnalité · News Atlassian

Atlassian

Utilisateur en ligne (6)

Documentation on EPN-TAP

- List of mandatory keywords with allowed values and units:
<https://voparis-confluence.obspm.fr/display/VES/EPN-TAP+V2.0+parameters>
- Please comment if not clear!

8) Thematic extensions

Some science fields will require optional parameters, which need to be used consistently between services addressing the same field. Such extensions have to be designed by sub-groups involved in the corresponding data services, either as providers or users. This includes:

- Lab spectroscopy: parameters to describe mineralogical samples (and possibly other samples)
- Orbital/rotational parameters and physical properties of Solar System bodies (TBC, but requested by some)
- Results of planetary 3D modelling run
- Exoplanets / planetary systems properties
- Bibliographic entries? May be manageable otherwise, through bibcode / doi interpretation

9) Parameters which must be provided

are now clearly identified - those are not only mandatory, they also must provide a value.

They are mostly related to service description and granule identification.

+ See notes below the table.

Name, v2	Must be filled?	Name, v1	Type	Unit / Format	Description	UCD
EPNCore mandatory parameters (must be present, possibly empty)						
granule_uid	Y	index	Text		Internal table row index Unique ID in data service, also in v2. Can be alphanum.	meta.id
granule_gid	Y	-	Text		Common to granules of same type (e.g. same map projection, or geometry data products). Can be alphanum.	meta.id
obs_id	Y	-	Text		Associates granules derived from the same data (e.g. various representations / processing levels). Can be alphanum., may be the ID of original observation.	meta.id
-		resource type	Text		Can be dataset or granule	meta.code.class

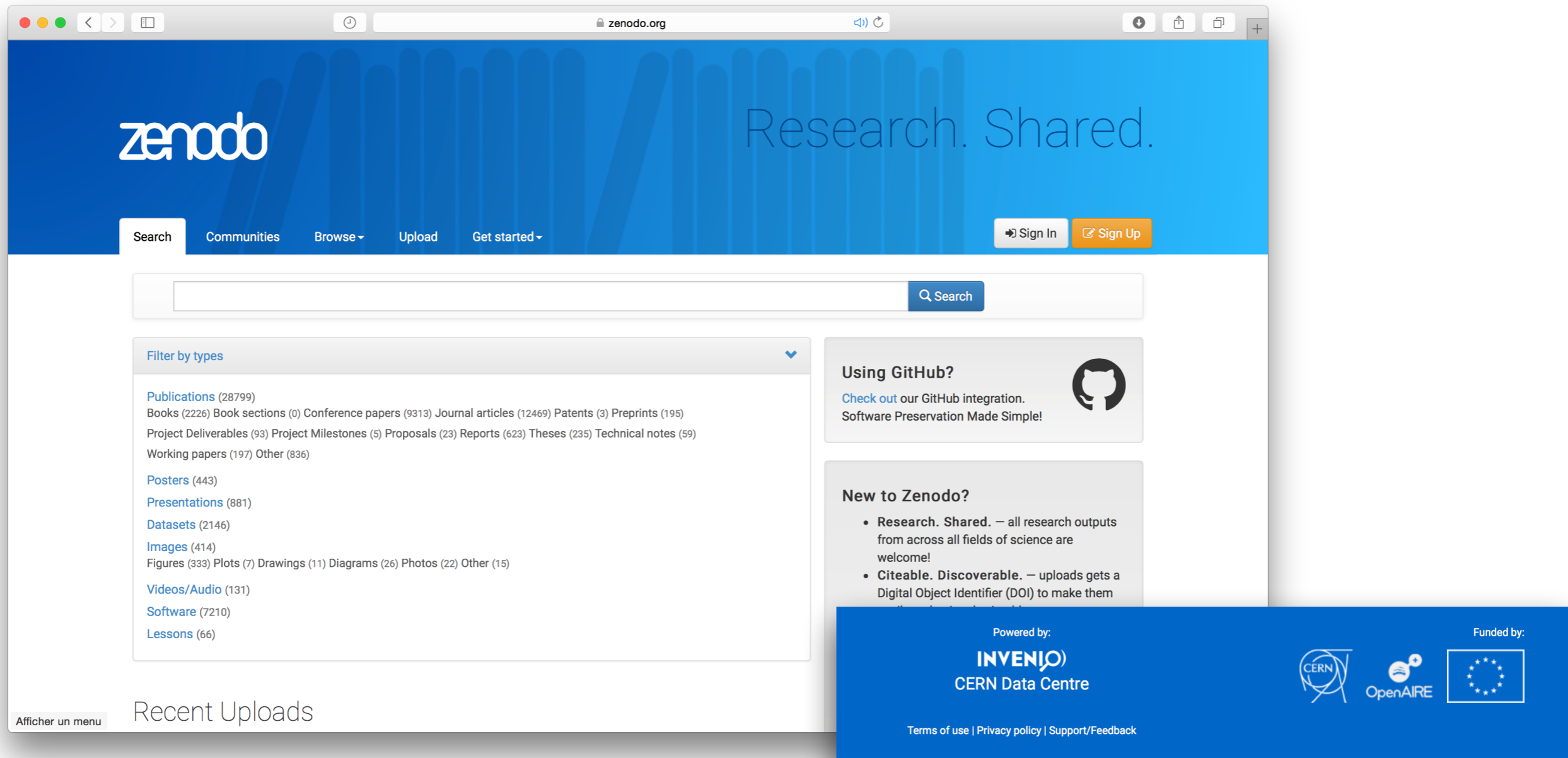
3 sur 26

Baptiste Cecconi

I'm running into a problem with this one. My Cassini/Kronos database is composed to hourly files, of various

Preservation ?

- VESPA is about distribution, not preservation.
- EU is proposing to use zenodo.org for long term preservation.



The screenshot shows the Zenodo website homepage. The header features the Zenodo logo and the tagline "Research. Shared." on a blue background. Navigation links include Search, Communities, Browse, Upload, and Get started. There are also Sign In and Sign Up buttons. A search bar is prominently displayed. Below the search bar, there is a "Filter by types" section with a dropdown arrow, listing various content types and their counts: Publications (28799), Books (2226), Book sections (0), Conference papers (9313), Journal articles (12469), Patents (3), Preprints (195), Project Deliverables (93), Project Milestones (5), Proposals (23), Reports (623), Theses (235), Technical notes (59), Working papers (197), Other (836), Posters (443), Presentations (881), Datasets (2146), Images (414), Figures (333), Plots (7), Drawings (11), Diagrams (26), Photos (22), Other (15), Videos/Audio (131), Software (7210), and Lessons (66). To the right of the filter section, there are two promotional boxes: "Using GitHub?" with a GitHub logo and text "Check out our GitHub integration. Software Preservation Made Simple!", and "New to Zenodo?" with bullet points: "Research. Shared. — all research outputs from across all fields of science are welcome!" and "Citeable. Discoverable. — uploads gets a Digital Object Identifier (DOI) to make them". At the bottom, a blue footer contains the text "Powered by: INVENIO CERN Data Centre" and "Funded by:" followed by logos for CERN, OpenAIRE, and the European Union. A small "Afficher un menu" button is visible in the bottom left corner.

Examples:

Propagation Tool

- 1 granule = 1 impact time on 1 target for a given event
- For each granule:
 - granule_uid = voevent-id
 - granule_gid = propagation method
 - obs_id = original event
 - time_min/time_max (at target)
 - target name/type
 - additional columns for interaction/model parameters
 - preview = propagation tool image for this event
 - coordinates c1/c2/c3 possibly used with:
 - spatial_frame_type = spherical and
 - spatial_coordinate_description = HEE (TBD)

Examples:

Modeling Tool (Transcar)

- 1 granule = 1 event-triggered simulation run
- For each granule:
 - granule_uid = voevent-id
 - granule_gid = model name (+ version?)
 - obs_id = run number
 - time_min/time_max (at target)
 - target name/type
 - additional columns for input file/parameters
 - access_url = simulation run file
 - preview = image for this event
 - coordinates c1/c2/c3 ranges + resolution with spatial_frame_type spatial_coordinate_description

Sharing PSWS data

- VESPA will provide support to any team for installation of tools and configuration of EPNcore tables.
- Other sharing infrastructure can be used additionally.
For instance: for “planetary plasma” simulation runs, the IMPEx infrastructure is well adapted. VESPA (and IMPEx teams within VESPA) can help interested teams.