

VOParis Europlanet

Pierre Le Sidaner, Stephane Erard et
toute l'équipe de VO-Paris
Observatoire de Paris

❑ VO Paris Data Centre

- Groupement de laboratoires de l'Observatoire de Paris et ses partenaires (IAP, IPSL, CEA)
- Noyau central d'ingénieurs
- CDD pour la promotion de données dans l'OV

❑ Projets Planétologie

- Petits corps et éphémérides
 - Skybot
 - SSODNet
- Planètes et atmosphère
 - Atmosphère de titan
 - Profils sur mars
 - VIRTIS (venus express, mars express, roseta)
 - Base d'images planétaires prises au Pic du midi

Présentation

Approche VO

Client PDS

Samplet

SSODNET

Registry

Conclusion



- o Comètes

- Données du radiotélescope de Nançay

- Compilation sur la physique des comètes

- o Simulation et Outils pour la planétologie

- Omega : Composition atmosphérique simulée

- Outils de lecture PDS

- o Physique atomique et moléculaire

- Basecol

L'approche VO

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❑ Interopérabilité

- Formats standards pour les données VOTable XML
- Formats standards d'accès SSA, SIA, TAP, SLAP,
- Annuaire – Registries
- Langage d'échange inter application SAMP

❑ Intérêt

- Gage de longévité car projet évolué et large communauté
- Standards et vocabulaire pré définis et évolutifs
- Chaine de validation de documents et standards

❑ Difficultés

- Besoin d'évolution pour la planétologie
- Chaine de validation longue

Client PDS (by R. Savalle)

VIRTIS=Visible and Infrared Thermal Imaging Spectrometer aboard Venus-Express, produces data cube (λ , x, y)

- **Storage format: PDS=Planetary Data System**
- **Use of PDS library by S. Erard, written for IDL**
- **Note: for planetary images used here, the WCS is arbitrary, the aim is only to superimpose a catalog**

Présentation

Approche VO

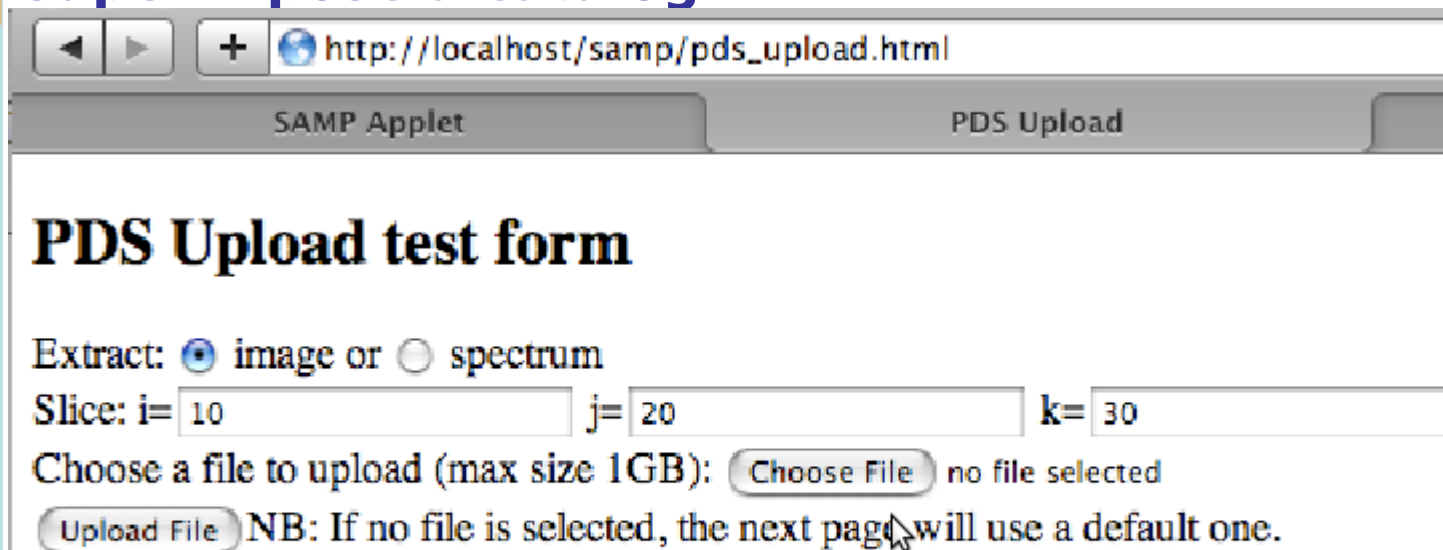
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◀ ▶ + http://localhost/samp/pds_upload.html

SAMP Applet PDS Upload

PDS Upload test form

Extract: image or spectrum

Slice: i= j= k=

Choose a file to upload (max size 1GB): no file selected

NB: If no file is selected, the next page will use a default one.

Client PDS (by R. Savalle)

A WCS for planetary usage? (Aladin has a solar referential that we have tried, does not work for tables/catalogs)

- **Data transfer directly via SAMP: (~image.load.data) ?**
- **Ability for SPLAT to load a spectrum in place of existing one (“overwrite”)**

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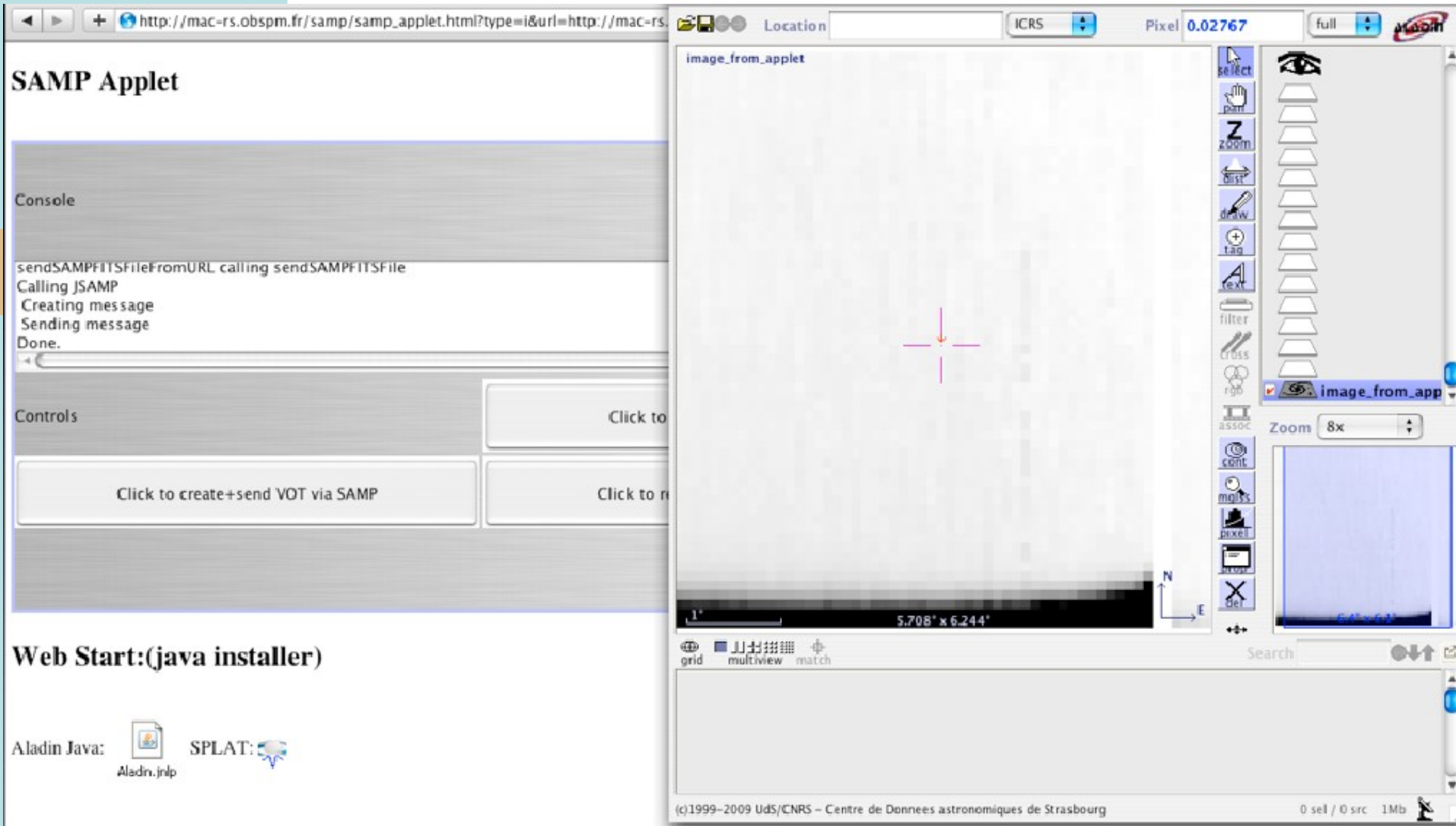
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Client PDS (by R. Savalle)



The screenshot displays a web browser window with the URL `http://mac-rs.obspm.fr/samp/samp_applet.html?type=i&url=http://mac-rs...`. The main content area is titled "SAMP Applet" and contains a console window with the following text:

```

sendSAMPFITFileFromURL calling sendSAMPFITFile
Calling JSAMP
Creating message
Sending message
Done.
  
```

Below the console are several control buttons, including "Click to create+send VOT via SAMP".

Overlaid on the right side of the browser is a Java Web Start window titled "Web Start:(java installer)". It shows two application icons: "Aladin Java: Aladrn.inp" and "SPLAT:". At the bottom of the Web Start window, it displays "(c)1999-2009 Uds/CNRS - Centre de Donnees astronomiques de Strasbourg" and "0 sel / 0 src 1Mb".

The background of the Web Start window shows a screenshot of the Aladin software interface. The Aladin window has a title bar with "Location" and "ICRS" selected. The main view shows a faint astronomical image with a red crosshair. The status bar at the bottom of the Aladin window indicates a resolution of "5,708' x 6,244'". The right sidebar contains various tool icons for selection, zooming, and image manipulation.

Client PDS (by R. Savalle)

http://mac-rs.obspm.fr/samp/samp_applet.html?type=i&url=http://mac-rs.

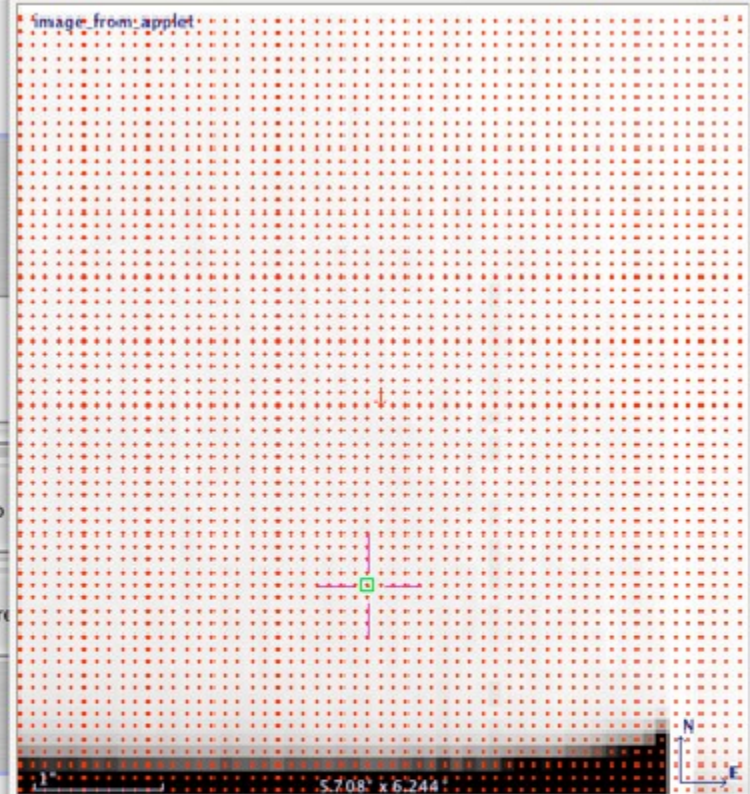
SAMP Applet

Console
 SAMPSelectRowsHandler.processCall called
 -table-id: grid0
 -url: null
 -rows selected:
 18:46, SAMPSelectRowsHandler.processCall called

Controls
 Click to ...
 Click to create+send VOT via SAMP
 Click to r...

Location ICRS Pixel 0.01866 full

image_from: applet



selectable
 pan
 zoom
 list
 draw
 tag
 text
 filter
 cross
 rgb
 assoc
 cont
 molss
 pixel
 raster
 del



votable from
 image from

Zoom 8x

Search

RA	DEC
179.90018	=1.3000008

1 sel / 3904 src 6Mb

Web Start:(java installer)
 Aladin Java:  Aladn.jar
 SPLAT: 

Client PDS (by R. Savalle)

http://localhost/samp/samp_applet.html

SAMP Applet

Console

```

sendSAMPFITSFileFromURL calling sendSAMPFITSFile
Calling JSAMP
Creating message
Sending message
Done.
  
```

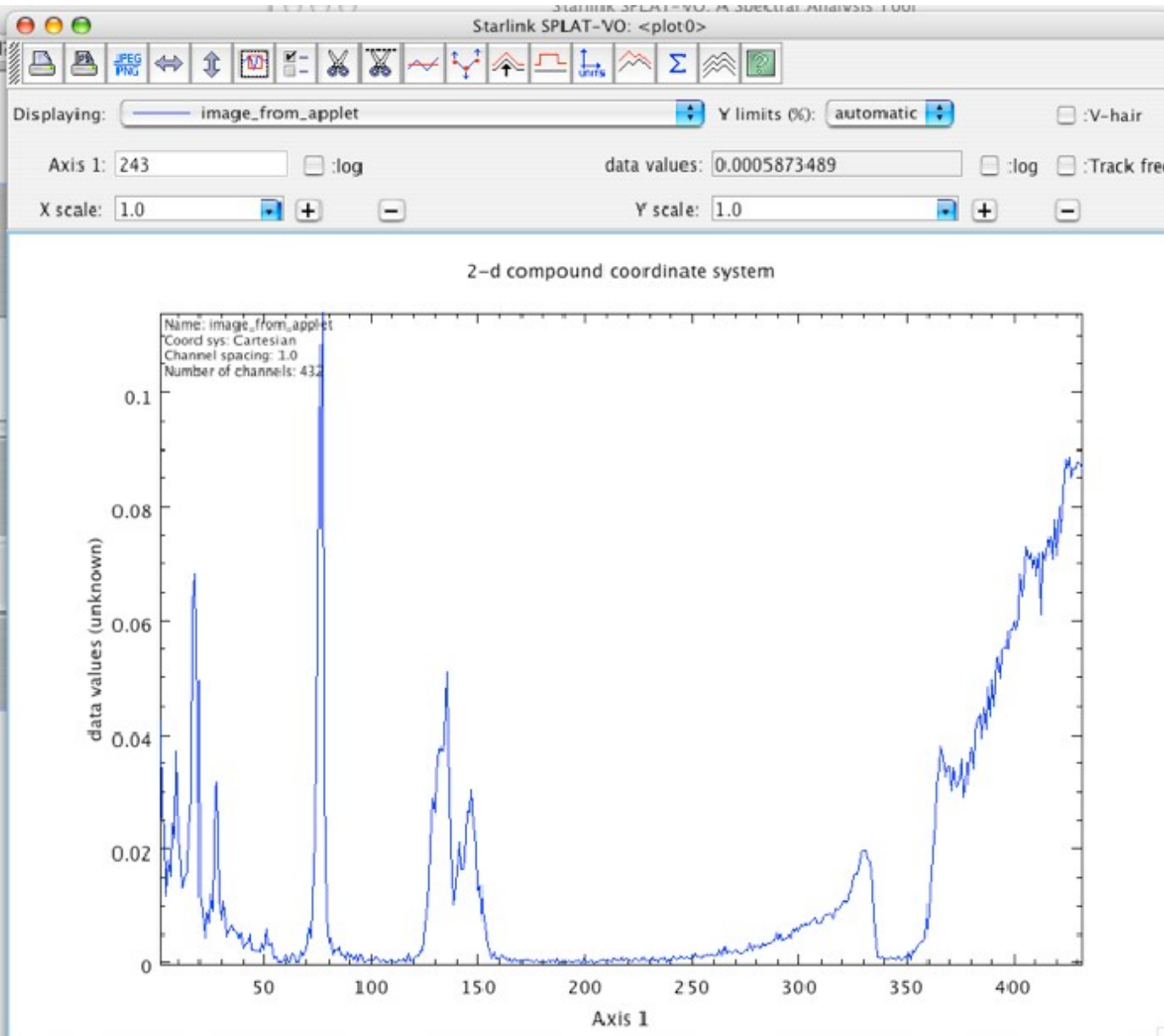
Controls

Click to create+send VOT via SAMP

Web Start:(java installer)

Aladin Java:  Aladin.jar

 SPLAT: 



Samplet (by R. Savalle – J. Berthier)

SAMP

- **Simple Application Messaging Protocol (IVOA Recommendation 21 April 2009 v1.11)**
 - **Application interoperability via XML/RPC + HUB**
 - **Support for Java, Perl, Python**
-
- **Use of SAMP Applet to make web vo-interactive.**
 - **All libraries (JSAMP, FITS) are embedded in**
 - **ONE signed jar file**
 - **Nothing to launch by the user. One popup**
 - **The applet can be made invisible to the user**

Will be soon available in the tool part of Voparis web site.

Présentation

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Client PDS

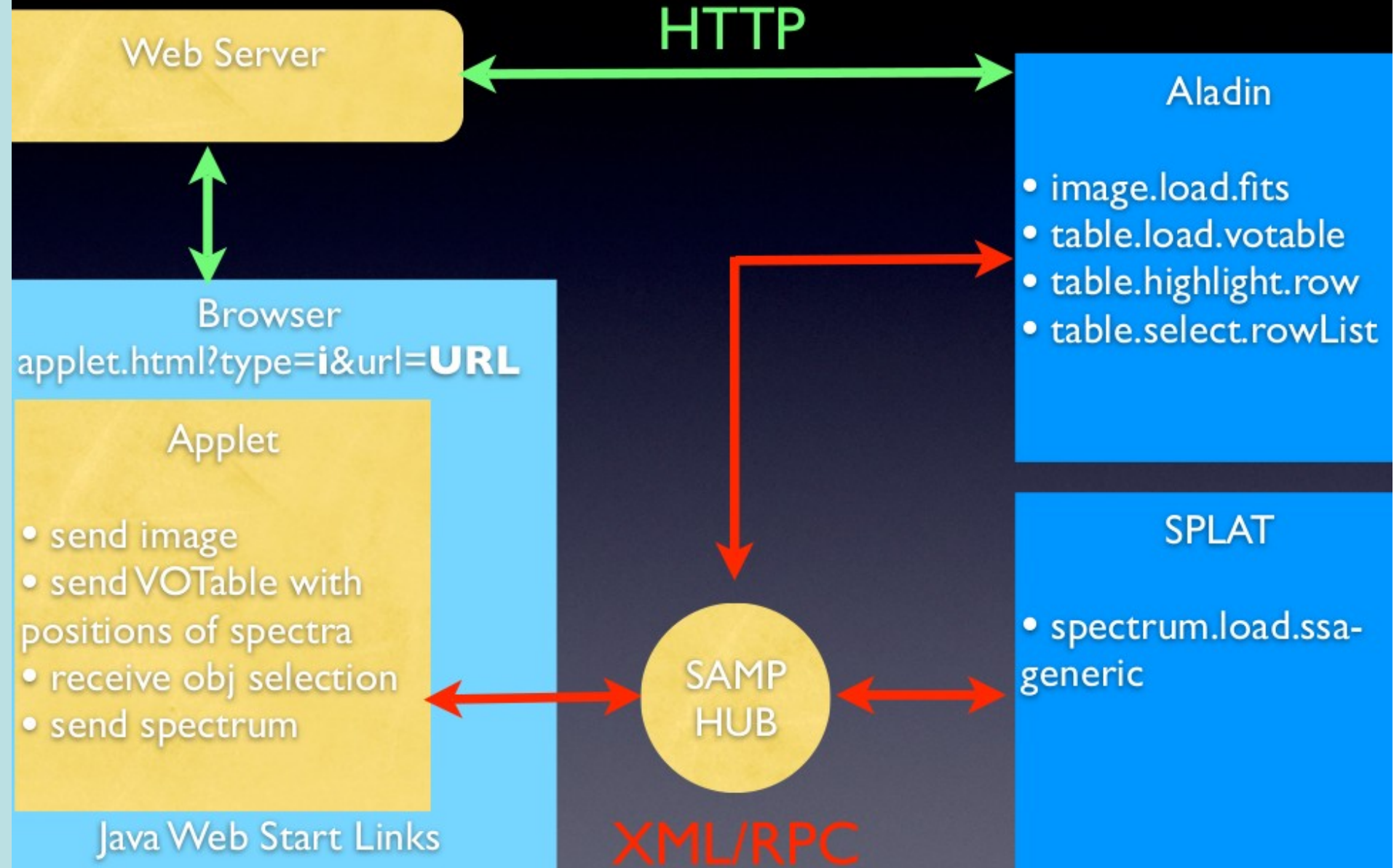
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Architecture



The Solar System Object Database Network project (J. Berthier)

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- **Goal:**
 - to set up a network of databases dedicated to the objects of the solar system within the Virtual Observatory framework
- **Nowadays:**
 - many databases concerning the solar system bodies exist but almost none are VO compliant
 - some existing databases can give access simultaneously to many parameters which define the solar system bodies

SSODNET

- **Examples of some existing databases:**

- JPL Small-Body Database Browser
<http://ssd.jpl.nasa.gov/sbdb.cgi>

- Small Bodies Node of the NASA PDS
<http://pdssbn.astro.umd.edu/>

- Small Bodies Node Data Ferret (in development)
<http://sbn.psi.edu/ferret/>

- **All these databases need a web browser to query and to display the data**

- **None of them can be used in the VO framework**

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SSODNet

the Solar System Object Database Network project

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Conclusion

- **Our ambition is:**
 - to develop the engine of an information system devoted to the solar system objects
 - to develop software bricks allowing a simple and fast integration of existing databases
 - to inter-connect the databases distributed among the European laboratories (first step) and all around the world (second step)

SSODNet

the Solar System Object Database Network project

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- **Currently, a prototype of search engine dedicated to the solar system is under development at IMCCE and some local and external databases have been connected**
 - Query form:
<http://www.imcce.fr/page.php?nav=fr/observateur/suppoc>
- **in 2010, we intend to continue our efforts of development and to finalize the search engine to provide to the community a name resolver of all the solar system bodies**

SSODNet

the Solar System Object Database Network project

Présentation

- **In particular we will inter-connect the name resolver of SSODNet with the SIMBAD database operated at CDS**

- Example:

- Name resolver -> Io

Approche VO

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- **And we will deploy and implement software bricks that will allow one to seek and collect data of the solar system objects from every databases connected to SSODNet**

SSODNET

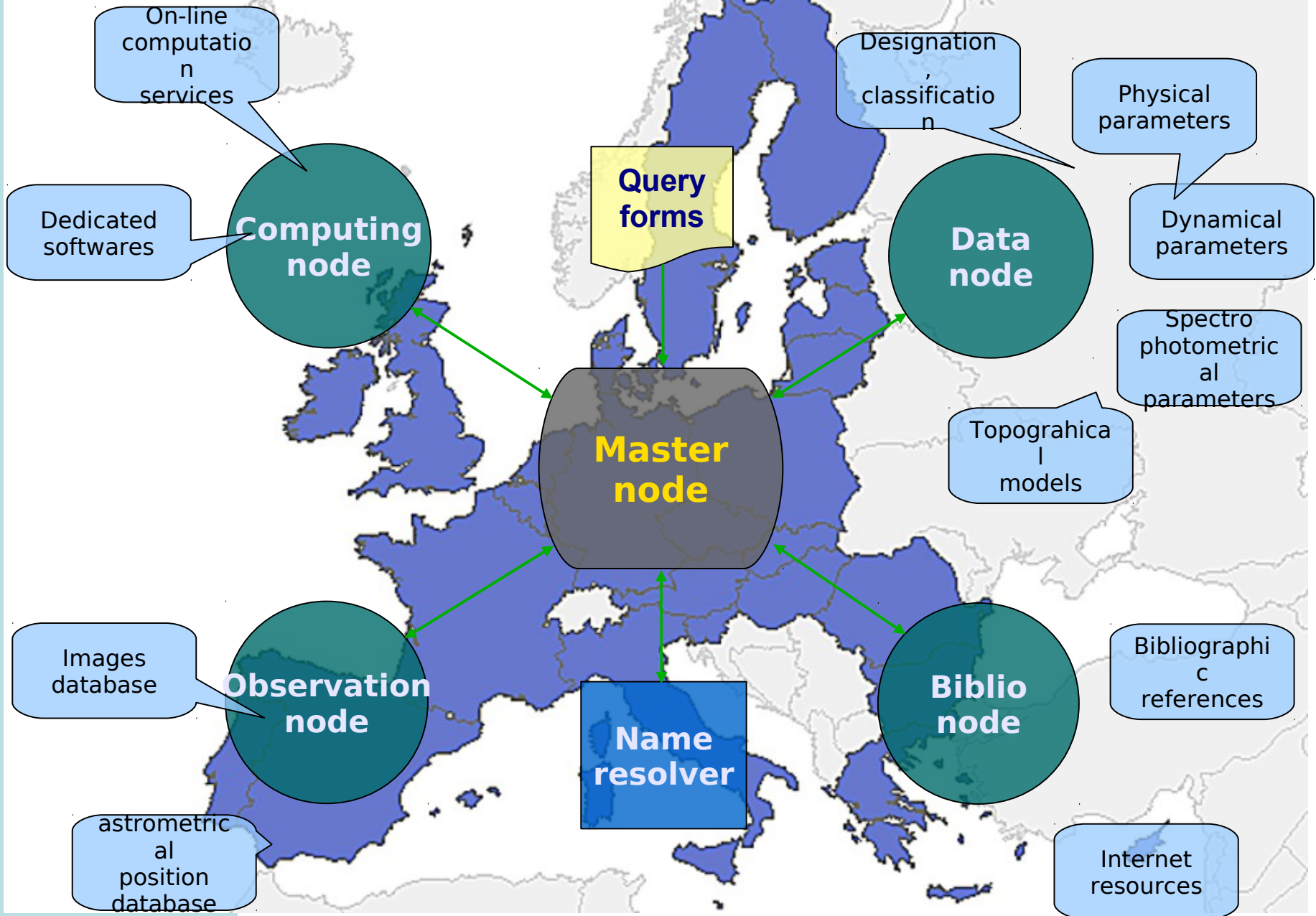
Registry

- Example:

- Collect data -> Ceres

Conclusion

SSODNet architecture



SSODNet

the Solar System Object Database Network project

Présentation

- **The network is rested on the technology and the standard of the Virtual Observatory**

Approche VO

- **The exchange format between the user and the nodes is the VOTable**

Client PDS

- **All the services proposed in SSODNet are VO-compliant and can be accessed as Web services**

Samplet

- **The nodes can be duplicated, distributed and shared on different web servers**

SSODNET

- **Query forms are provided to access and query the nodes**

Registry

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- **Query forms can be easily implemented in any web site**

SSODNET QUERY FORM

To search for solar system object data, please fill the form below and submit the query (button 'Identifier'). The identified bodies will then be displayed at the bottom of the page. Two cases arise:

- if only one object has been identified, a new window will be automatically open to display the object data (be careful to allow the popup from www.imcce.fr in the preferences of your web browser).
- if two or more objects are identified, click on the row corresponding to the object of your choice to display its data.

You might have to wait a while before you get a response depending on the resources you choose to seek. Go to the [SSODNET Home Page](#) for details about the service.

Read the [documentation](#) if you mind how to do, or just put your mouse above the [?] for quick help.

▶ Identifier: [?] Identifier

▶ Type: [?]

▶ Mime: Text HTML VOTable [?]

▶ Data: [?]

<input checked="" type="checkbox"/> identity	<input checked="" type="checkbox"/> satellites	<input checked="" type="checkbox"/> physic
<input checked="" type="checkbox"/> orbit	<input checked="" type="checkbox"/> orbit_c	<input checked="" type="checkbox"/> topography
<input checked="" type="checkbox"/> surface	<input checked="" type="checkbox"/> LAOSA1	<input checked="" type="checkbox"/> LAOSA2
<input checked="" type="checkbox"/> LAOSA3	<input checked="" type="checkbox"/> LAOSA4	<input checked="" type="checkbox"/> albedos
<input checked="" type="checkbox"/> taxonomy	<input checked="" type="checkbox"/> SMASS	<input checked="" type="checkbox"/> MBOSS
<input checked="" type="checkbox"/> CdRCdL	<input checked="" type="checkbox"/> biblioref	

[Basic search]

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Utiliser les registries IVOA pour enregistrer des services de Planétologie :

Resource Registry

Il s'agit de l'annuaire principal du VO.

Il y a un schéma XML qui décrit les centres de données, bases de données, services, les instruments.

Cette description sert aux clients informatiques pour connaître les services existants.

Les registres étant multiples un processus d'échange entre eux « Harvesting » est mis en place pour le partage d'informations. Basé sur *Open Archives Initiative's Protocol for Metadata Harvesting* Gestion d'un identifiant unique pour une ressource « ivoa:// »

L'une des questions d'infrastructure est la précision avec laquelle doit être décrit un service.

Le classement des services de données est fait par type de protocole auquel répond le service.

S'ajoutent des description par mot clefs et plein texte des ressources et/ou services.

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DÉFINITION D'UN PROTOCOLE :

xmlns:cs="http://www.ivoa.net/xml/ConeSearch/v1.0" ...

xmlns:spa="http://voplus.obspm.fr/schema/SPAv0.1"

xmlns:ssa="http://www.ivoa.net/xml/SSA/v0.4"

xsi:schemaLocation="http://www.ivoa.net/xml/RegistryInterface/v1.0
http://www.ivoa.net/xml/RegistryInterface/v1.0

http://www.ivoa.net/xml/VOResource/v1.0 <http://www.ivoa.net>

Puis description du service dans le registry

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Browser address bar: <http://voparis-astrogrid2.obspm.fr:8080/registry/browse.jsp?IvornPart=VOPARIS&button=List>

Browser tabs: Edit Registry Entry, Browse Registered Resources, Browse Registered Resources, http://www.iv.../xml/SIA/v1.0

Page title: AstroGrid Registry

Registry Browser

Find IVORNs including:

Title	Type	AuthorityID	ResourceKey	
registry-test	vg:Registry	voparis_obspm	org.astrogrid.registry.RegistryService	20
voparis registry2	vg:Registry	voparis.obspm	null?!	20
test_ressource	vr:Service	obspm.fr	voparis	20
test_ressource	vr:Service	voparis_obspm	voparis	20
vospace	vr:Service	voparis.obspm	vospace	20
The Titan Cassini Profile	vs:CatalogService	voparis.obspm	titan/spap	20
Test for Simple profile access protocol	vs:DataCollection	voparis.obspm	std/SPA	20
PegaseHR	va:Application	obspm.fr	pegasehr-voparis	20

Server

- Home
- Admin Home

Investigate

- IVORN Lookup
- Browse
- Keyword Query
- XQuery Search
- Tree view
- Harvests Status

Register

- Submit new resource
- Low Level(XML) Submit Resource
- Low Level(XML) Back Door Submit

Admin

- Harvest
- Harvest VOSI
- Get/Find New Registries
- Manage New Authority
- Remove Resource
- Edit Properties
- Resource(s) Status Change
- FingerPrint
- Admin Home (Other Tasks)

The Database

- DB client and WebDav

Documentation

- Installation
- Configure
- Cookbook
- eXist Ref
- Reg Reference
- Uninstallation
- Upgrading
- Resource Help

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DÉFINITION D'UN PROTOCOLE :

xmlns:cs="http://www.ivoa.net/xml/ConeSearch/v1.0" ...

xmlns:spa="http://voplus.obspm.fr/schema/SPAv0.1"

xmlns:ssa="http://www.ivoa.net/xml/SSA/v0.4"

xsi:schemaLocation="http://www.ivoa.net/xml/RegistryInterface/v1.0
http://www.ivoa.net/xml/RegistryInterface/v1.0

http://www.ivoa.net/xml/VOResource/v1.0 <http://www.ivoa.net>

Puis description du service dans le registry

Prés
 Appr
 Clie
 Sa
 SSC
 Reg
 Conc

VO Explorer - profile

File Edit View **Resource** Interop Window Help

Resource Lists

- Examples
 - Recent Changes
 - VO taster list
 - Cone search examples
 - Image access examples
 - Spectrum access example
 - Remote applications
 - Queryable database exar
 - IR redshift
 - Solar services
 - SWIFT follow up
 - Radio images
 - Vizier AGN tables
 - VOEvent services
- New Smartlist
- profile**

+ New Smart List

⚡ Actions

ℹ About

Selection: CatalogService

🔴 Further Info

👤 Email Curator

Filter results

Flag...	Title	Capability	Valida...	Date
	Test for Simple profile access protocol			2009-11-06
	The Titan Cassini Profile			2009-11-11

ℹ Information | 📅 Table Metadata

The Titan Cassini Profile

Short Name VOParis SPAP IVOA-ID ivo://voparis.obspm/titan/spap
 Resource Type CatalogService Created 2005-08-02 Updated 2009-11-11

Content Type archive Subject titan atmosphere profile by cassini Level research

This database displays the abundance vertical profiles of C₂H₂, C₂H₄, C₂H₆, C₃H₈, CH₃C₂H, C₄H₂, C₆H₆, HCN, HC₃N and CO₂ in Titan's atmosphere at nine different latitudes between 100 and 500 km. These profiles were retrieved from the infrared spectra acquired by the Composite Infrared Spectrometer (CIRS) aboard the Cassini spacecraft. The retrieval method and the description of the used dataset is detailed by Vinatier et al., 2009, Analysis of Cassini/CIRS limb spectra of Titan acquired during the nominal mission. I: Hydrocarbons, nitriles and CO₂ vertical mixing ratio profiles, Icarus, in press. doi:10.1016/j.icarus.2009.08.013. [Further Information...](#)

Annotate

Flag

Highlight

Alternative title

Notes

Tags

Conclusion (plutôt des questions)

- ❑ **Le protocole inter applications est un moyen peu coûteux pour profiter simplement des clients OV**
- ❑ **SSODNET un prototype OV pour la planetologie.**
 - **Un démonstrateur vo-planeto, integration dans IDISS ?**
 - **Un moyen de donner un accès aux ressources via des protocoles standardisés (PDAP....)**
- ❑ **Le registry IVOA serait il la solution pour référencer les services europlanet , quelle réponse propose PDAP ?**

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