



Quelles briques pour le développement d'un portail en interférométrie optique

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« publication des données dans l'OV et au protocole IVOA TAP »

Plan

Motivations

Cahier des charges

Architecture

Modèle de données

Retour d'expérience

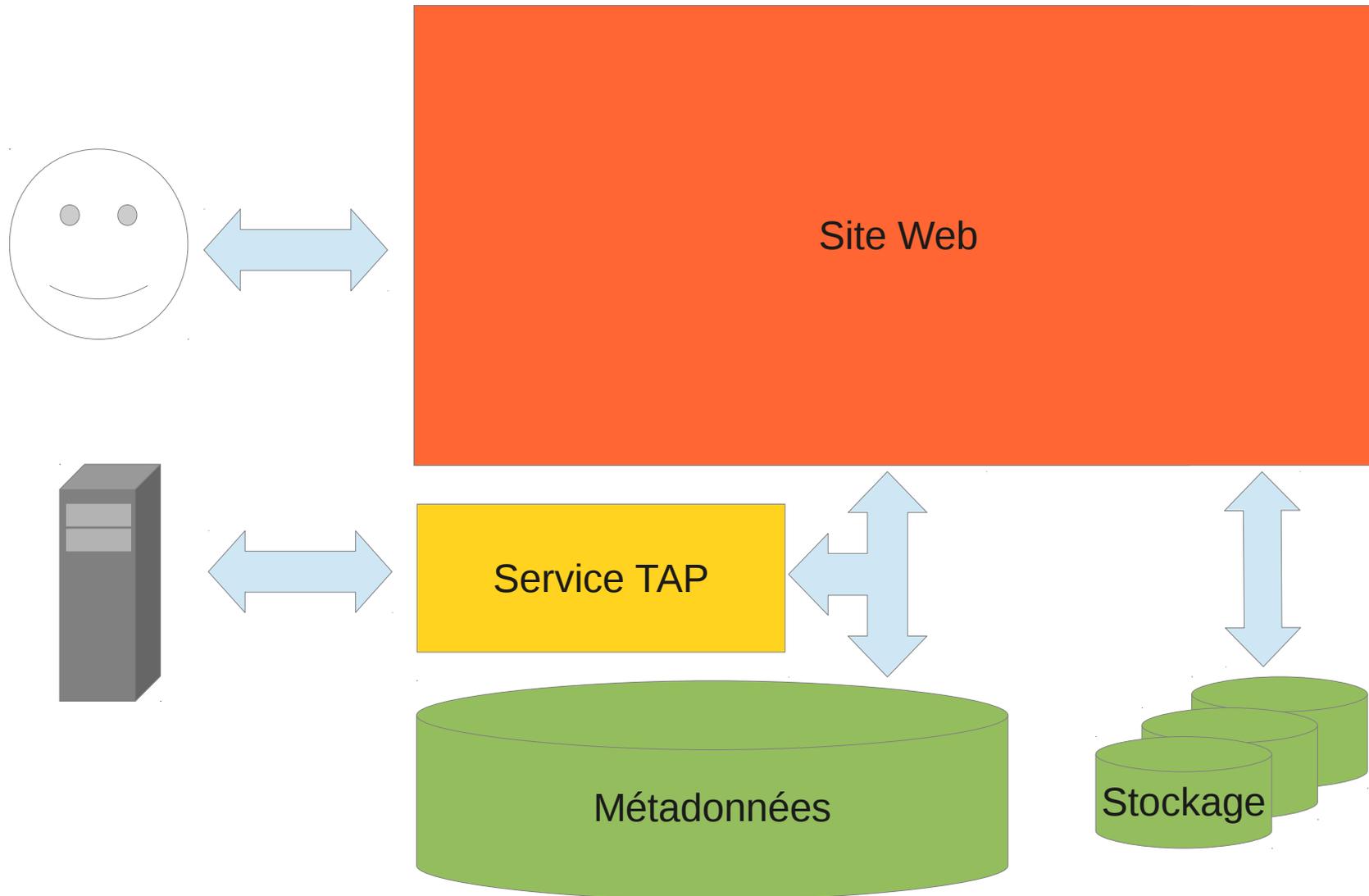
Introduction

- le JMMC développe des logiciels / catalogues pour l'observation par interférométrie optique : <http://www.jmmc.fr>
- aucune véritable archive n'est rattachée aux principaux interféromètres en dehors des données brutes d'instruments ESO. Quelques données publiées / pérennisées (VizieR & éditeurs), les autres dispersées.
- la communauté olbin/IAU-C54 supporte l'initiative de mise en place d'un portail de **promotion, préservation et diffusion de données**
→ démarrage du projet JMMC <http://oidb.jmmc.fr> mi-2013

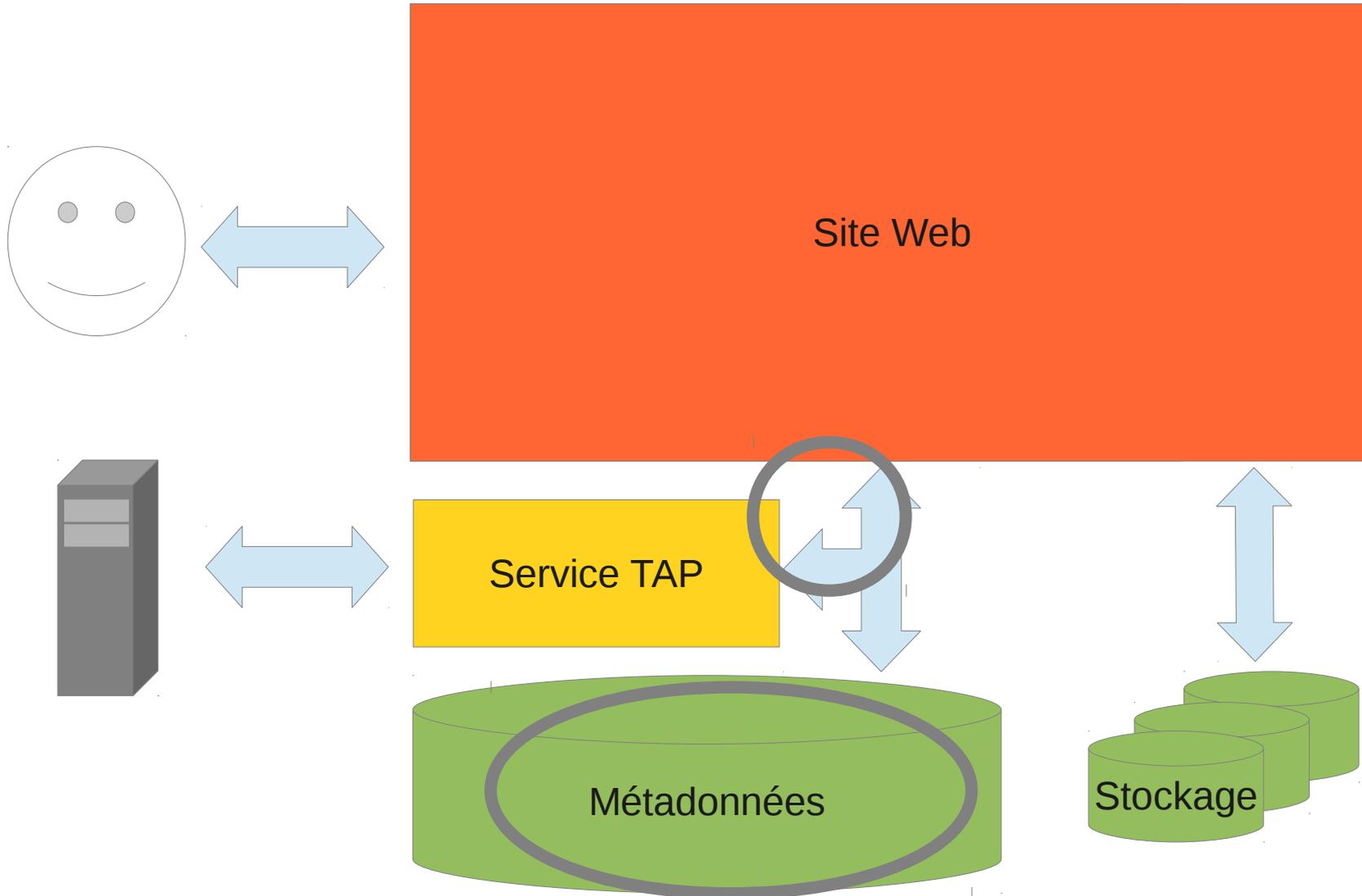
Cahier des charges

- mettre en ligne le maximum d'informations recueillies depuis des sources de données externes:
 - logs d'observations (L0)
 - archives réduction automatique (L2)
 - données publiées (L3)
- offrir une solution d'hébergement pour le stockage de données en interférométrie personnelles (L2)
 - favoriser les collaborations
 - préserver des données
- VO compatible (découverte + interoperabilité)

Notre proposition



Focus : interaction TAP / website & métadonnées



Architecture

Service TAP : *TAPLib* gmantele @ github

RDBMS : *Postgres* + *pgsphere* (tables obscure)

Appli Web : *exist-db*

- Base de données XML
- Framework pour applis web
 - Bootstrap, jquery, REST, templates HTML, webdav, ...
- Bibliothèques métier
 - java : oitools, coordonnées
 - modules xquery : dates, simbad, vizier (lecture readme), ads

Serveur J2EE commun :

- *Jetty* +mod_proxy apache

Samp : API javascript <http://voar.jmmc.fr>

Interface de requêtes :

Iceweasel OI Data portal
oidb-beta.jmmc.fr/search.html?calibLevel=1,2,3
JMMC OI DB Help
Prototype under development, do not use in production.

Filters

Position: Name or coordinates J2000 Radius: 2 arcmin

Date of observation: between YYYY-MM-DD and YYYY-MM-DD

Instrument: Any Instrument

Wavelength range: U B V R I J H K L M N Q
 Visible Near infrared Mid infrared

Collection: Any Collection

DataPI name: Any DataPI

Data reduction level: L0 L1 L2 L3

Availability: Public Restricted All

Sort by Instrument descending. Max rows per page: 25

Search
Reset

- 1/ formulation requete ADQL
- 2/ transmission au service TAP
- 3/ transformation VOTable -> resultat HTML

Panneau de résultats synthétique

Menu contextuel : détail, export, liens externes

Edition libre de la query ADQL

Iceweasel OIData portal

oidb-beta.jmmc.fr/search.html?calibLevel=1,2,3

Results

Meta-data will try to follow VO4OI proposal and Ivoa:ObsCore document (get metadata description in the associated doc)
1936 observations from 1731 oifits files (485 private)

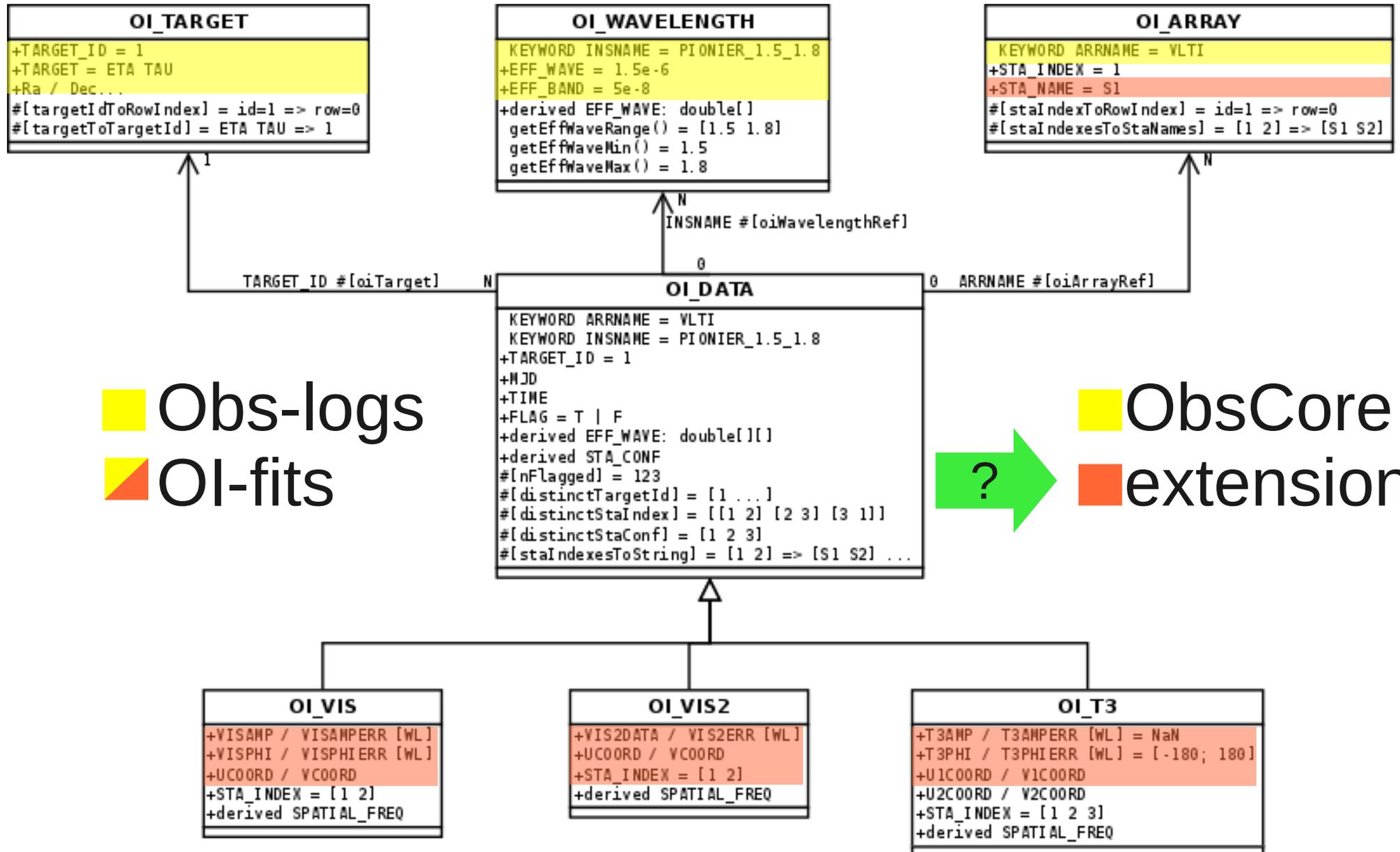
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Results for `SELECT ALL * FROM oidb AS t WHERE (t.calib_level=1 OR t.calib_level=2 OR t.calib_level=3)`
([Edit query](#))

 target_name <small>meta.id;src</small>	access_url <small>meta.ref.url</small>	t_min <small>time.start;obs.exposure</small>	instrument_name <small>meta.id;instr</small>	em_min <small>em.wl;stat.min</small>	em_max <small>em.wl;stat.max</small>	nb_channels	obs_creator_name <small>meta.id</small>
 DELTA_CAP	2010-10-26_SCI_DELTA_CAP_oiDataCalib.fits	2010-10-27T02:09:35	PIONIER_Pdown(1.5994200/1.7627500)	1.59942000	1.76275000	5	Jean-Baptiste Le Bouquin
 Details  View in SIMBAD  No SAMP connection	-10-26_SCI_MWC158_oiDataCalib.fits	2010-10-27T06:38:52	PIONIER_Pdown(1.5994200/1.7627500)	1.59942000	1.76275000	5	Jean-Baptiste Le Bouquin
	-10-27_SCI_SS_LEP_oiDataCalib.fits	2010-10-28T07:26:23	PIONIER_Pup(1.5994200/1.8035799)	1.59942000	1.80358000	6	Jean-Baptiste Le Bouquin
	-10-28_SCI_ALF_HY1_oiDataCalib.fits	2010-10-29T02:48:28	PIONIER_Pup(1.5994200/1.8035799)	1.59942000	1.80358000	6	Jean-Baptiste Le Bouquin
 DELTA_AQR	2010-10-28_SCI_DELTA_AQR_oiDataCalib.fits	2010-10-29T02:21:07	PIONIER_Pup(1.5994200/1.8035799)	1.59942000	1.80358000	6	Jean-Baptiste Le Bouquin
 KAP01_CET	2010-10-28_SCI_KAP01_CET_oiDataCalib.fits	2010-10-29T05:09:35	PIONIER_Pup(1.5994200/1.8035799)	1.59942000	1.80358000	6	Jean-Baptiste Le Bouquin
 LTT-9682	2010-10-28_SCI_LTT-9682_oiDataCalib.fits	2010-10-29T01:46:33	PIONIER_Pup(1.5994200/1.8035799)	1.59942000	1.80358000	6	Jean-Baptiste Le Bouquin
 HIP11231	2010-10-29_SCI_HIP11231_oiDataCalib.fits	2010-10-30T05:09:35	PIONIER_Pnat(1.5994200/1.8035799)	1.59942000	1.80358000	6	Jean-Baptiste Le Bouquin
 HIP114421	2010-10-29_SCI_HIP114421_oiDataCalib.fits	2010-10-30T04:04:47	PIONIER_Pup(1.5994200/1.8035799)	1.59942000	1.80358000	6	Jean-Baptiste Le Bouquin
 SS_LEP	2010-10-29_SCI_SS_LEP_oiDataCalib.fits	2010-10-30T07:46:33	PIONIER_Pnat(1.5994200/1.8035799)	1.59942000	1.80358000	6	Jean-Baptiste Le Bouquin
 CANOPUS	2010-10-30_SCI_CANOPUS_oiDataCalib.fits	2010-10-31T07:07:40	PIONIER_Pup(1.5994200/1.8035799)	1.59942000	1.80358000	6	Jean-Baptiste Le Bouquin
 FOMALHAUT	2010-10-30_SCI_FOMALHAUT_oiDataCalib.fits	2010-10-31T03:07:11	PIONIER_Pup(1.5994200/1.8035799)	1.59942000	1.80358000	6	Jean-Baptiste Le Bouquin

oidb-beta.jmmc.fr/search.html?calibLevel=1,2,3#

Modèle de données



Retour d'expérience :-)

- DataModel :
 - Pas évident de reprendre des concepts pour la mise en place d'extensions.
 - Toutes les informations ne sont pas exposées en TAP : choix à faire.
- TAPlib
 - Mode basique incompatible avec taphandle (/tables insuffisant : TAP_SCHEMA nécessaire ?)
 - Externaliser la configuration de la SERVLET (accès au SGBD, metadonnées)
 - Amélioration des logs
- TAP
 - Pas adapté aux traitements par lots
 - ex.simbad : récupérer les coordonnées de N étoiles et leurs identifiants
 - Limité à l'échange de données tabulaires très bas niveau
 - ex : comment véhiculer un complexe / un tableau ?
 - la logique est à porter dans les clients TAP. Lesquels ?

Retour d'expérience :-)

- TAPlib
 - démarrage simple
 - intégration sur serveur d'appli Java
- TAP
 - concept SQL like (+ fonctions astro) → sortie XML
 - exploitation simple avec outils XML (VOTable)
- ObsCore
 - très bon support pour démarrer

La suite ?

- mise en ligne du portail fin 2014
 - maj avec TAPlib 2.0 ?
- enregistrement du service TAP dans le registry
- préparation d'une V.2 (datalink, DOI, quicklook)

→ pour cet après-midi ?

- quelle recette « rapide » datalink ?

ex.: renvoie vers un service de validation / affichage de données liées

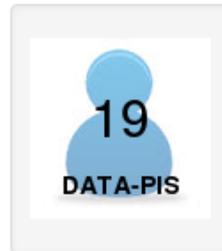
Optical Interferometry DataBase



10
FACILITIES



12
INSTRUMENTS



19
DATA-PIS



7
COLLECTIONS

1637
OIFITS

2021
GRANULES

2635
OBS. LOGS

Enter target name or [visit the advanced form](#)

Sept 2014 : A beta release is under preparation!

The JMMC OI DB working group is preparing the next version of the portal.
See you soon.

Javascript d'affichage des applications compatibles samp table.load.fits (voar.jmmc.fr)

Iceweasel | OIData portal

oidb-beta.jmmc.fr/search.html?caliblevel=1,2,3

Results

Meta-data will try to follow VO4OI proposal and Ivoa:ObsCore document (get 1936 observations from 1731 oifits files (485 private))

Results for **SEL** (calib_level=3)

target_name	access_url	em_min	em_max	nb_channels	obs_creator_name		
meta.id;src	meta.ref.url	em.wl;stat.max			meta.id		
DELTA_CAP	2010-10-26_SCI_DELTA_CAP_oiDataCalib.fits	1.76275000	1.76275000	5	Jean-Baptiste Le Bouquin		
MWC158	2010-10-26_SCI_MWC158_oiDataCalib.fits	1.76275000	1.76275000	5	Jean-Baptiste Le Bouquin		
SS_LEP	2010-10-27_SCI_SS_LEP_oiDataCalib.fits	1.80358000	1.80358000	6	Jean-Baptiste Le Bouquin		
ALF_HY1	2010-10-28_SCI_ALF_HY1_oiDataCalib.fits	1.80358000	1.80358000	6	Jean-Baptiste Le Bouquin		
DELTA_AQR	2010-10-28_SCI_DELTA_AQR_oiDataCalib.fits	1.80358000	1.80358000	6	Jean-Baptiste Le Bouquin		
KAP01_CET	2010-10-28_SCI_KAP01_CET_oiDataCalib.fits	1.80358000	1.80358000	6	Jean-Baptiste Le Bouquin		
LTT-9682	2010-10-28_SCI_LTT-9682_oiDataCalib.fits	1.80358000	1.80358000	6	Jean-Baptiste Le Bouquin		
HIP11231	2010-10-29_SCI_HIP11231_oiDataCalib.fits	1.80358000	1.80358000	6	Jean-Baptiste Le Bouquin		
HIP114421	2010-10-29_SCI_HIP114421_oiDataCalib.fits	2010-10-30T04:04:47	PIONIER_Pup(1.5994200/1.8035799)	1.59942000	1.80358000	6	Jean-Baptiste Le Bouquin
SS_LEP	2010-10-29_SCI_SS_LEP_oiDataCalib.fits	2010-10-30T07:46:33	PIONIER_Pnat(1.5994200/1.8035799)	1.59942000	1.80358000	6	Jean-Baptiste Le Bouquin
CANOPUS	2010-10-30_SCI_CANOPUS_oiDataCalib.fits	2010-10-31T07:07:40	PIONIER_Pup(1.5994200/1.8035799)	1.59942000	1.80358000	6	Jean-Baptiste Le Bouquin
FOMALHAUT	2010-10-30_SCI_FOMALHAUT_oiDataCalib.fits	2010-10-31T03:07:11	PIONIER_Pup(1.5994200/1.8035799)	1.59942000	1.80358000	6	Jean-Baptiste Le Bouquin

Sending data to an application

 **AppLauncher**, the **JMMC VO Dock** for Astronomers, is an application launcher that lets you choose and start **VO** tools.

Alternatively you may directly download and install any of the following relevant applications:

-  Aladin
-  Cassini
-  IRIS
-  LITpro
-  OIFitsExplorer
-  SAOImage DS9
-  VOspec
-  splat
-  topcat

Close

Exploitation par topcat / vo /tap

Window Deletion Columns Registry Interop Help



Select Service Enter Query Resume Job Running Jobs

Table Metadata
 Service: http://localhost:9090/exist/tap (1 table)
 Table: public.oidb

Name	Data Type	Indexed	Unit	Description	UCD	Utype	Flags
id	VARCHAR	<input type="checkbox"/>		Object ID			
dataproduuct_type	VARCHAR	<input type="checkbox"/>		High level scientific classification of the data product ta...	meta.id	obscure:obs.dataproducttype	
calib_level	VARCHAR	<input type="checkbox"/>		Amount of data processing that has been applied to th...	meta.code;obs.calib	obscure:obs.caliblevel	
target_name	VARCHAR	<input type="checkbox"/>		Object a targeted observation targeted	meta.id;src	obscure:target.name	
obs_id	VARCHAR	<input type="checkbox"/>		Unique identifier for an observation	meta.id	obscure:DataID.observationID	
obs_collection	VARCHAR	<input type="checkbox"/>		Name of a data collection (e.g., project name) this data...	meta.id	obscure:dataid.collection	
obs_creator_name	VARCHAR	<input type="checkbox"/>		Name of the creator of the data	meta.id	obscure:dataid.creator	
obs_release_date	VARCHAR	<input type="checkbox"/>		Observation release date	time.release	obscure:curation.releasedate	
obs_publisher_did	VARCHAR	<input type="checkbox"/>		Dataset identifier given by the publisher	meta.ref.url;meta.curation	obscure:curation.publisherid	
bib_reference	VARCHAR	<input type="checkbox"/>		Service bibliographic reference	meta.bib.bibcode	obscure:curation.reference	
data_rights	VARCHAR	<input type="checkbox"/>		Public/Secure/Proprietary	meta.code	obscure:curation.rights	
access_url	VARCHAR	<input type="checkbox"/>		The URL at which to obtain the data set.	meta.ref.url	obscure:access.reference	
access_format	VARCHAR	<input type="checkbox"/>		MIME type of the resource at access_url	meta.code.mime	obscure:access.format	
access_estsize	VARCHAR	<input type="checkbox"/>	kbyte	Estimated size of data product	phys.size;meta.file	obscure:access.size	
s_ra	VARCHAR	<input type="checkbox"/>	deg	Right ascension of (center of) observation, ICRS	pos.eq.ra;meta.main	obscure:char.spatialaxis.coverage.location.coord.positi...	
s_dec	VARCHAR	<input type="checkbox"/>	deg	Declination of (center of) observation, ICRS	pos.eq.dec;meta.main	obscure:char.spatialaxis.coverage.location.coord.positi...	
s_fov	VARCHAR	<input type="checkbox"/>	deg	Approximate spatial extent for the region covered by th...	phys.angSize;instr.fov	obscure:char.spatialaxis.coverage.bounds.extent.diame...	
s_region	VARCHAR	<input type="checkbox"/>		Region covered by the observation, as a polygon	phys.angArea;obs	obscure:char.spatialaxis.coverage.support.area	
s_resolution	VARCHAR	<input type="checkbox"/>	arcsec	Best spatial resolution within the data set	pos.angResolution	obscure:Char.SpatialAxis.Resolution.refval	
t_min	VARCHAR	<input type="checkbox"/>	d	Lower bound of times represented in the data set, as MJD	time.start;obs.exposure	obscure:char.timeaxis.coverage.bounds.limits.interval.st...	
t_max	VARCHAR	<input type="checkbox"/>	d	Upper bound of times represented in the data set, as MJD	time.end;obs.exposure	obscure:char.timeaxis.coverage.bounds.limits.interval.st...	
t_exptime	VARCHAR	<input type="checkbox"/>	s	Total exposure time	time.duration;obs.exposure	obscure:char.timeaxis.coverage.support.extent	

Foreign Keys:

Target Table	Links	Description	Utype

Service Capabilities
 Query Language: ADQL-2.0 Max Rows: Uploads: unavailable

ADQL Text
 Synchronous

OK

Développement existdb sous l'IDE en ligne eXide

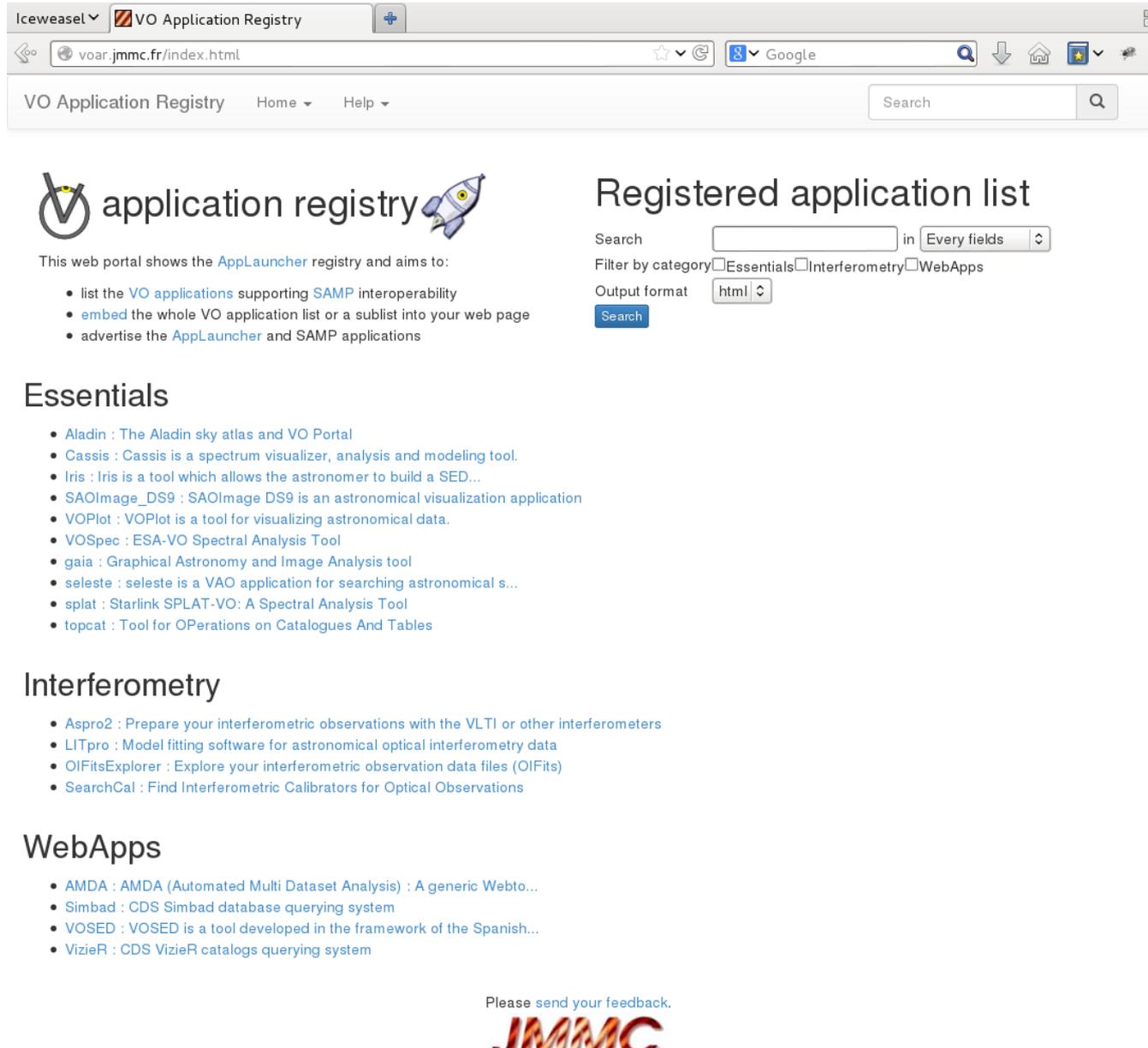
The screenshot displays the eXide web IDE interface. The main editor shows XQuery code for a function named `app:get-data()`. The code imports modules from `http://jmmc.fr/apps/umap/templates` and `http://jmmc.fr/apps/umap/config`, and uses `distinct-values` and `string-join` to process data from a log file. The right-hand pane shows the XML output of the query, which includes metadata like time and IP, and a detailed host record for `gag8174.obs.ujf-grenoble.fr` with various location and system codes.

```
1 xquery version "3.0";
2
3 module namespace app="http://jmmc.fr/apps/umap/templates";
4
5 import module namespace templates="http://exist-db.org/xquery/templates" ;
6 import module namespace config="http://jmmc.fr/apps/umap/config" at "config.xqm";
7
8 declare function app:get-data()
9 {
10     let $min-requests := 9
11
12     (: Load stats from log computation :)
13     let $doc := doc("http://jmmc.fr/statistics/updated_access_log.xml")
14
15     (: ::)
16     let $latlon := for $e in $doc//e
17                   group by $l := $e//latlon
18                   return
19                       let $c :=count($e)
20                       return
21                           if($c > $min-requests) then
22                               let $softs := string-join( for $a in distinct-values($e//app) return
23                               $a||":"||count($e//app[.=$a]) , "; ")
24                               return $l||",total requests:"||$c ||" ("|| $softs ||")"
25                               else ()
26     return string-join(("lat,lon,info",$latlon,""), "&#10;")
27 };
```

```
1 <e>
  <app>oival</app>
  <time>1219670323</time>
  <y>2008</y>
  <mm>08</mm>
  <m>Aug</m>
  <d>25</d>
  <ip>152.77.248.174</ip>
  <v>-</v>
  <v>301</v>
  <v>152.77.248.174</v>
  <v>Mozilla/5.0 (X11; U; Linux x86_64; en-US;
  rv:1.8.1.16) Gecko/20080703
  Mandriva/2.0.0.16-1.1mdv2008.1 (2008.1)
  Firefox/2.0.0.16</v>
  <v>356</v>
  <v>-</v>
  <v>-</v>
  <v>[25/Aug/2008:15:18:43 +0200]</v>
  <v>GET /oival HTTP/1.1</v>
  <host>
    <ip>152.77.248.174</ip>
    <hostname>gag8174.obs.ujf-
    grenoble.fr</hostname>
    <latlon>45.166698455811,5.7167000770569</
    <country_code>FR</country_code>
    <region>B9</region>
    <city>Grenoble</city>
    <postal_code/>
    <latitude>45.166698455811</latitude>
    <longitude>5.7167000770569</longitude>
    <dma_code>0</dma_code>
    <area_code>0</area_code>
  </host>
</e>
```

Registry Web de l'AppLauncher

http://voar.jmmc.fr



The screenshot shows a web browser window with the address bar displaying "voar.jmmc.fr/index.html". The page title is "VO Application Registry". The browser's search engine is set to Google. The website header includes a search bar and navigation links for "Home" and "Help".

application registry 

This web portal shows the [AppLauncher](#) registry and aims to:

- list the [VO applications](#) supporting [SAMP](#) interoperability
- [embed](#) the whole VO application list or a sublist into your web page
- advertise the [AppLauncher](#) and [SAMP](#) applications

Registered application list

Search in [Every fields](#)

Filter by category Essentials Interferometry WebApps

Output format [html](#)

[Search](#)

Essentials

- [Aladin](#) : The Aladin sky atlas and VO Portal
- [Cassio](#) : Cassio is a spectrum visualizer, analysis and modeling tool.
- [Iris](#) : Iris is a tool which allows the astronomer to build a SED...
- [SAOImage_DS9](#) : SAOImage DS9 is an astronomical visualization application
- [VOPlot](#) : VOPlot is a tool for visualizing astronomical data.
- [VOSpec](#) : ESA-VO Spectral Analysis Tool
- [gaia](#) : Graphical Astronomy and Image Analysis tool
- [seleste](#) : seleste is a VAO application for searching astronomical s...
- [splat](#) : Starlink SPLAT-VO: A Spectral Analysis Tool
- [topcat](#) : Tool for OPERations on Catalogues And Tables

Interferometry

- [Aspro2](#) : Prepare your interferometric observations with the VLTI or other interferometers
- [LITpro](#) : Model fitting software for astronomical optical interferometry data
- [OIFitsExplorer](#) : Explore your interferometric observation data files (OIFits)
- [SearchCal](#) : Find Interferometric Calibrators for Optical Observations

WebApps

- [AMDA](#) : AMDA (Automated Multi Dataset Analysis) : A generic Webto...
- [Simbad](#) : CDS Simbad database querying system
- [VOSED](#) : VOSED is a tool developed in the framework of the Spanish...
- [VizieR](#) : CDS VizieR catalogs querying system

Please [send your feedback](#).

