

Web application prototypes for CTA

framework, modularity and standards



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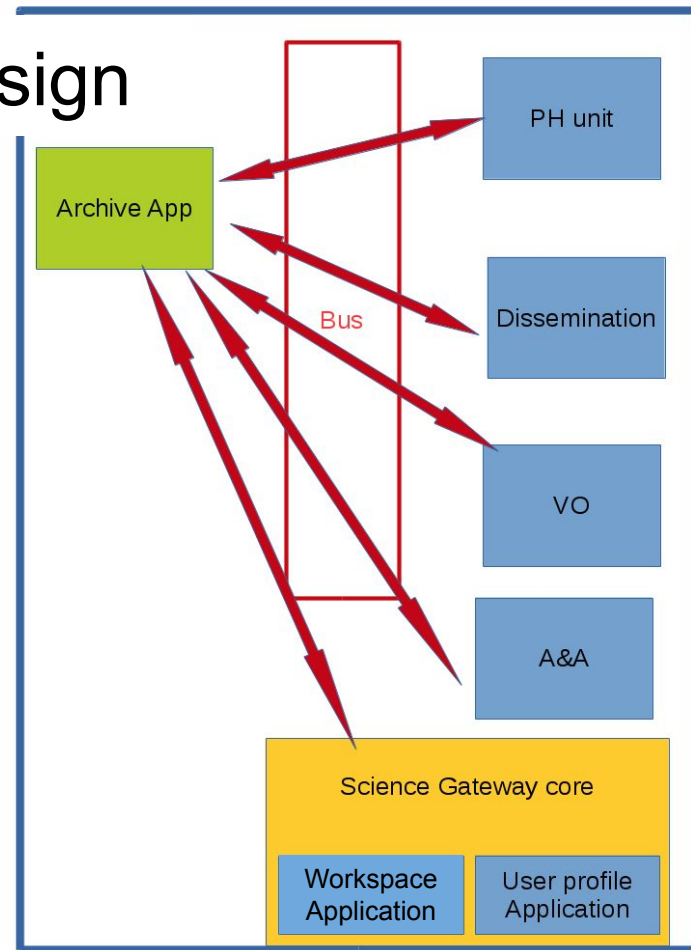


Laboratoire Univers et Théories



CTA science portal preliminary design

- Modular design
 - core + various application
- Top Menu Bar
 - Visual integration for each application
 - Common menu, A&A status
- Message bus
 - Bus (Message Queue, e.g. RabbitMQ, ZeroMQ)
 - Formatted Messages (e.g. Protobuf)
- Authentication and Authorization (A&A)
- **Web app developed at Obs Paris:**
 - **VO Data Access and Distiller**
 - **Proposal Handling Platform**



CTA Science Gateway

@ D. Sanchez

Development frameworks to do it fast and clean

- Django, Flask or Bottle
 - Python frameworks that follow the model–view–controller design pattern
 - Choice guided by the size and requirement of the application
 - Bottle: simple app with almost no user interface
 - Flask: small app
 - Django: advanced app (model part more advanced and linked to the database...)
- JQuery, Bootstrap3
 - simple javascript frameworks
 - reduce the work on the appearance of the web pages



CTA TAP Distiller <https://voparis-cta-test.obspm.fr>

Cone Search

Target Name:

Source RA (deg):

Source Dec (deg):

Search radius (deg):



istiller Search Form Results Job List Authentication: Sign out Mathieu Servillat

Results

```
SELECT * FROM hess_dr.vo_obscore as o WHERE 1 = intersects(o.s_region, circle('ICRS', 329.717000, -30.226000, 0.001000))
```

ADQL query

IVOA Standards

SAMP

Interop (SAMP)

- Send Result Table
- Send Selected Data

Analysis tools

- Count Map(s)
- Fit Spectrum

ObsCore fields

	dataprodect_type	obs_collection	obs_id	target_name	s_ra (deg)	s_dec (deg)
<input type="checkbox"/>	event	HESS-DR	33787	PKS 2155-304	329.717	-29.7256
<input checked="" type="checkbox"/>	event	HESS-DR	33788	PKS 2155-304		
<input type="checkbox"/>	event	HESS-DR	33789	PKS 2155-304		
<input type="checkbox"/>	event	HESS-DR	33790	PKS 2155-304	329.717	-30.7256
<input type="checkbox"/>	event	HESS-DR	33791	PKS 2155-304	329.717	-29.7256

UWS

OPUS <https://voparis-uws-test.obspm.fr>

Plotting tools

- Aladin
- VOSpec
- SPLAT

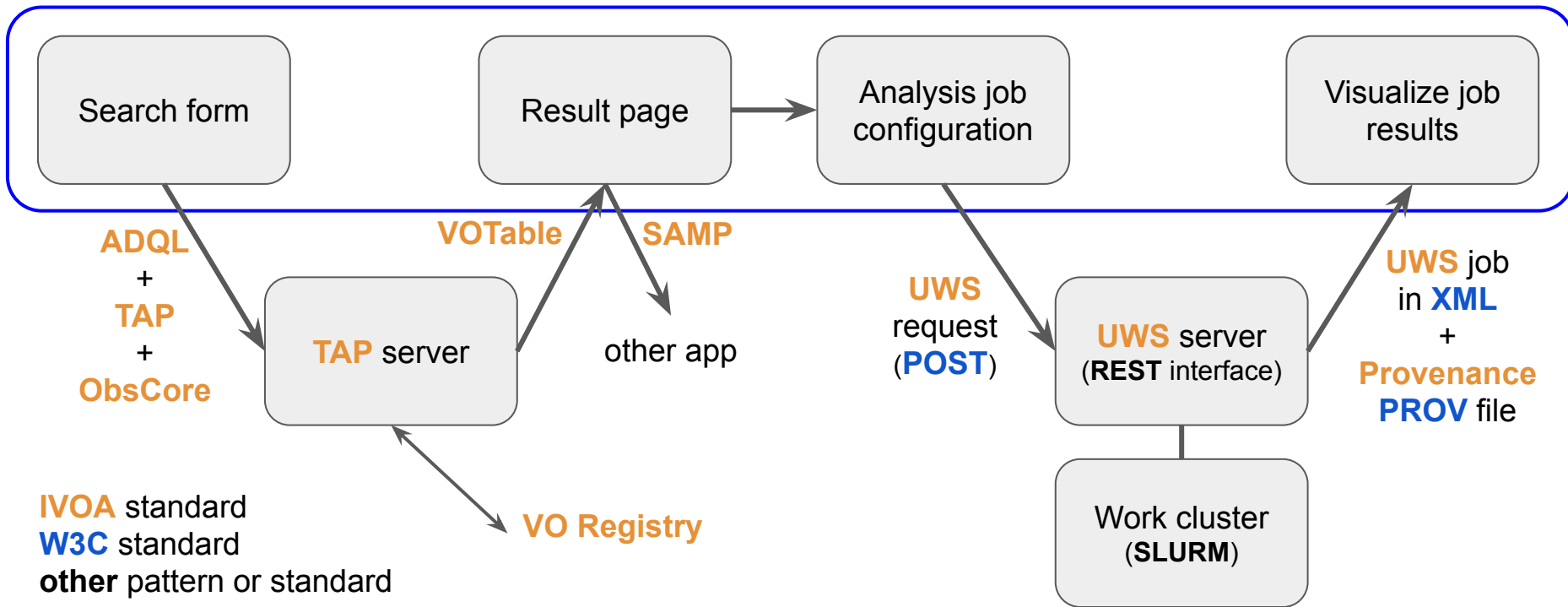
Showing 1 to 5 of 21 rows records per page

<< < 1 2 3 4 5 > >>

Use of standards and modularity to increase development speed

Web application

+ Authn&Authz (SAML, OpenID, SCIM, ...)



H.E.S.S. DL3 public DR1

- Service referenced in **VO Registry**
- DaCHS software behind
- **TAP** + **ObsCore** table
 - obs_id, s_ra, s_dec...
 - access_url
 - + H.E.S.S. metadata
- Enables blind discovery of the H.E.S.S. data

See: <https://hess-dr.obspm.fr/>



Help

Service info

Metadata

Identifier

ivo://vopdc.obspm/hess_dr

Cite this

[Advice on citing this resource](#)

Description

IVOA ObsCore description

Keywords

H.E.S.S.

Creator

H.E.S.S. collaboration

Created

2018-09-14T10:00:00Z

Data updated

2018-10-30

Copyright

H.E.S.S. collaboration, 2018
documentation is published

Reference URL

<https://www.mpi-hd.mpg.de>

[Try ADQL](#) to query our data.

[Privacy](#) | [Disclaimer](#)

Table information for 'hess_dr.vo_obscore'

General

Table Description: IVOA ObsCore description of event lists for observations in the H.E.S.S. DL3 public test data release 1

This table is available for [ADQL queries](#) and through the [TAP](#) endpoint.

Resource Description: The release consists of event lists and instrument response functions for observations of various well-known gamma-ray sources (the Crab nebula, PKS 2155-304, MSH 15-52, RX J1713.7-3946) as well as observations of empty fields for background modeling.

For a list of **all services and tables** belonging to this table's resource, see [Information on resource 'H.E.S.S. DL3 public test data release 1'](#)

Resource Reference URL: <https://www.mpi-hd.mpg.de/hfm/HESS/pages/dl3-dr1/>

Citing this table

To cite the **table as such**, we suggest the following BibTeX entry:

```
@MISC{vo:hess_dr_vo_obscore,  
  year=2018,  
  title={H.E.S.S. DL3 public test data release 1},  
  author={H.E.S.S. collaboration},  
  url={https://www.mpi-hd.mpg.de/hfm/HESS/pages/dl3-dr1/},  
  howpublished={VO} resource provided by the {PADC} {TAP}  
}
```

Fields

Sorted by DB column index. [\[Sort alphabetically\]](#)

Name	Table Head	Description	Unit	
------	------------	-------------	------	--

VO Data Access tools

VO standards become transparent once used through VO compliant tools such as

- Aladin
- TOPCAT
- a dedicated web service

The image shows the Aladin v10.0 interface. The main window displays a star field with several bright stars and a grid overlay. The title bar indicates 'Aladin v10.0' and 'Projection Aitoff'. The left sidebar shows a list of data sources, including 'Gaia catalog release 2', 'H.E.S.S. DL3 public test data', and 'PADC TAP Server on vopari'. The right sidebar contains various tool icons for selection, zooming, and data manipulation. A foreground window titled 'TAP access with vopdc.obspsm/luth/hess-dr' is open, showing a query interface. The interface includes a table selection dropdown set to 'hess_dr.vo_obscore', a 'Set ra, dec' button, and a 'Select' dropdown set to 'All'. The 'Constraints' section is empty. The 'Target' field is set to 'crab' and the 'Rayon' is set to '1'. The 'CIRCLE' button is highlighted. Below the form, the coordinates 'Ra= 83.63308 Dec= 22.0145 Radius= 0.01666' are displayed. The 'Refresh query' button is active. The SQL query is:

```
SELECT TOP 100 * FROM hess_dr.vo_obscore WHERE CONTAINS(POINT('ICRS', s_ra, s_dec), CIRCLE('ICRS', 83.63308, 22.0145, 0.01666)) = 1
```

Table List

- 4: hess_dl3_dr1_obs_id_020343.fits.gz-3
- 5: hess_dl3_dr1_obs_id_020343.fits.gz-4
- 6: hess_dl3_dr1_obs_id_020343.fits.gz-5
- 7: hess_dl3_dr1_obs_id_023523.fits.gz
- 8: hess_dl3_dr1_obs_id_023523.fits.gz-2
- 9: hess_dl3_dr1_obs_id_023523.fits.gz-3
- 10: hess_dl3_dr1_obs_id_023523.fits.gz-4
- 11: hess_dl3_dr1_obs_id_023523.fits.gz-5

Current Table Properties

Label: hess_dl3_dr1_obs_id_023523.fits.gz
 Location: https://hess-dr.obspm.fr/retrieve/hess-
 Name: EVENTS-1
 Rows: 7,613
 Columns: 5

SAMP
 Messages: Clients:

109 / 1821 M

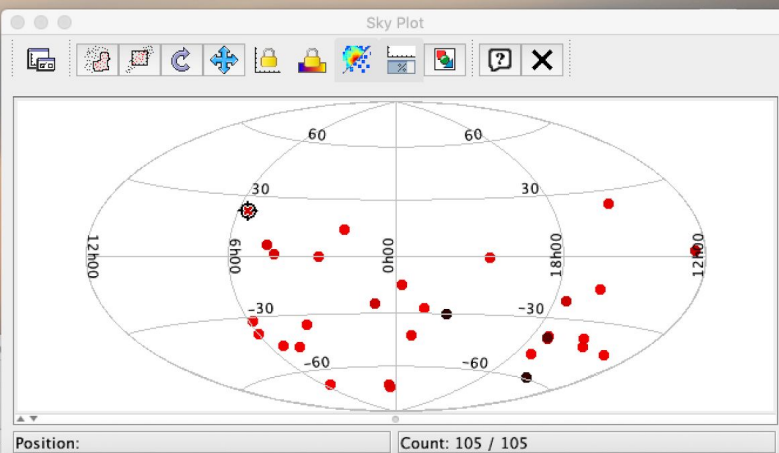


Table Access Prot...

TOPCAT(1): Tabl...

Select Service Use Service

Metadata

Find: hess

Name Descrip Or

- HESS DL3 DR1 (1/18)
 - hess_dr (1/1)
 - hess_dr.vo_obscore

Name: hess_dr
 Tables: 1
 Description: The releas response f for observ

Service Capabilities

Query Language: ADQL-2.0 Max Rows: 200

ADQL Text

Mode: Synchronous

SELECT TOP 1000 * FROM hess_dr.vo_obscore

Examples Basic 1/6: Full table

Run Query

