

# Authentication methods explored for CTA

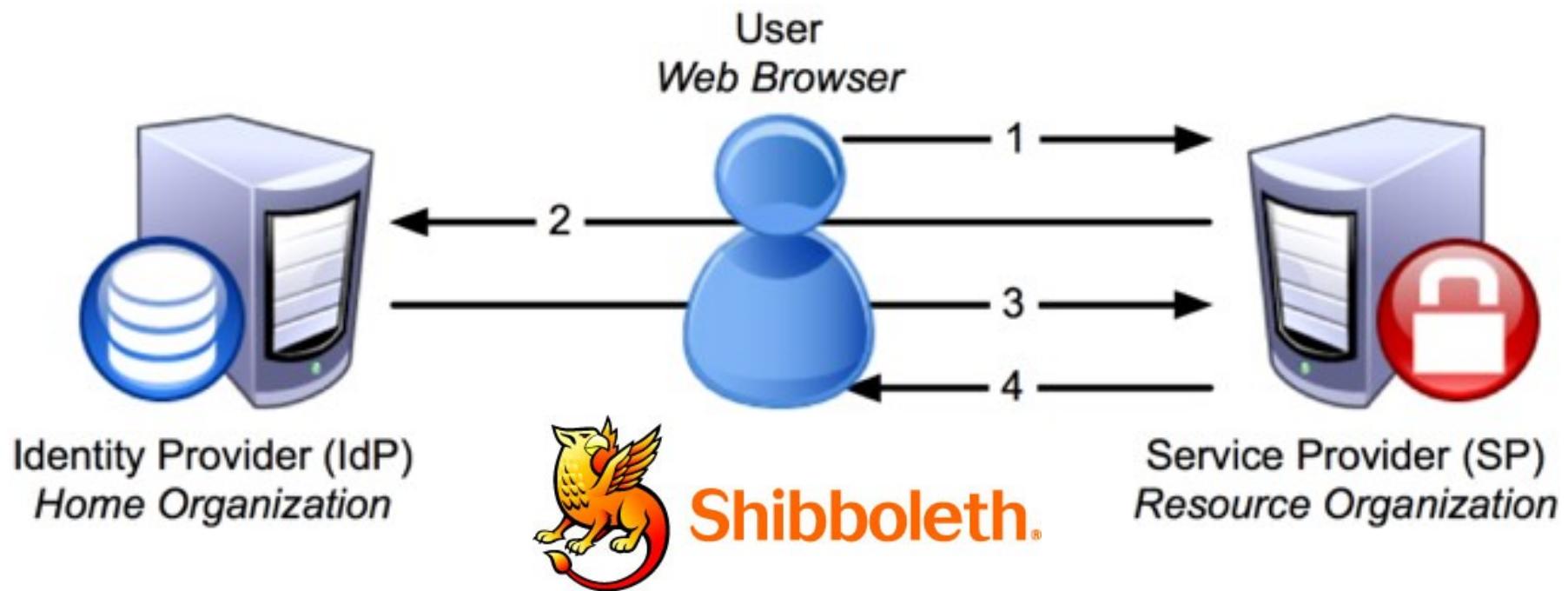
**Catherine Boisson**  
**pour**  
**Mathieu Servillat**



Laboratoire Univers et Théories



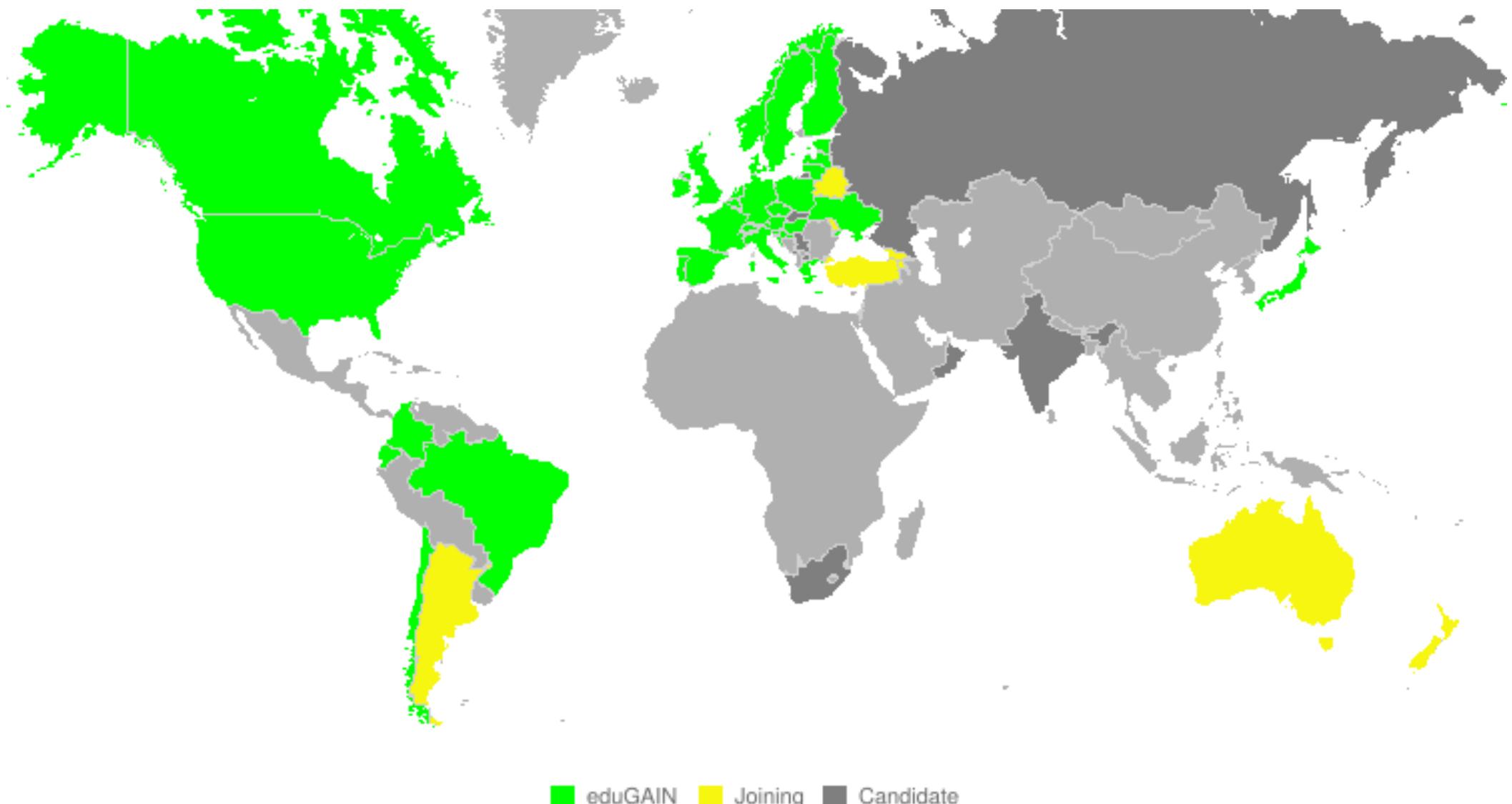
# Single Sign-On with Identity Federations



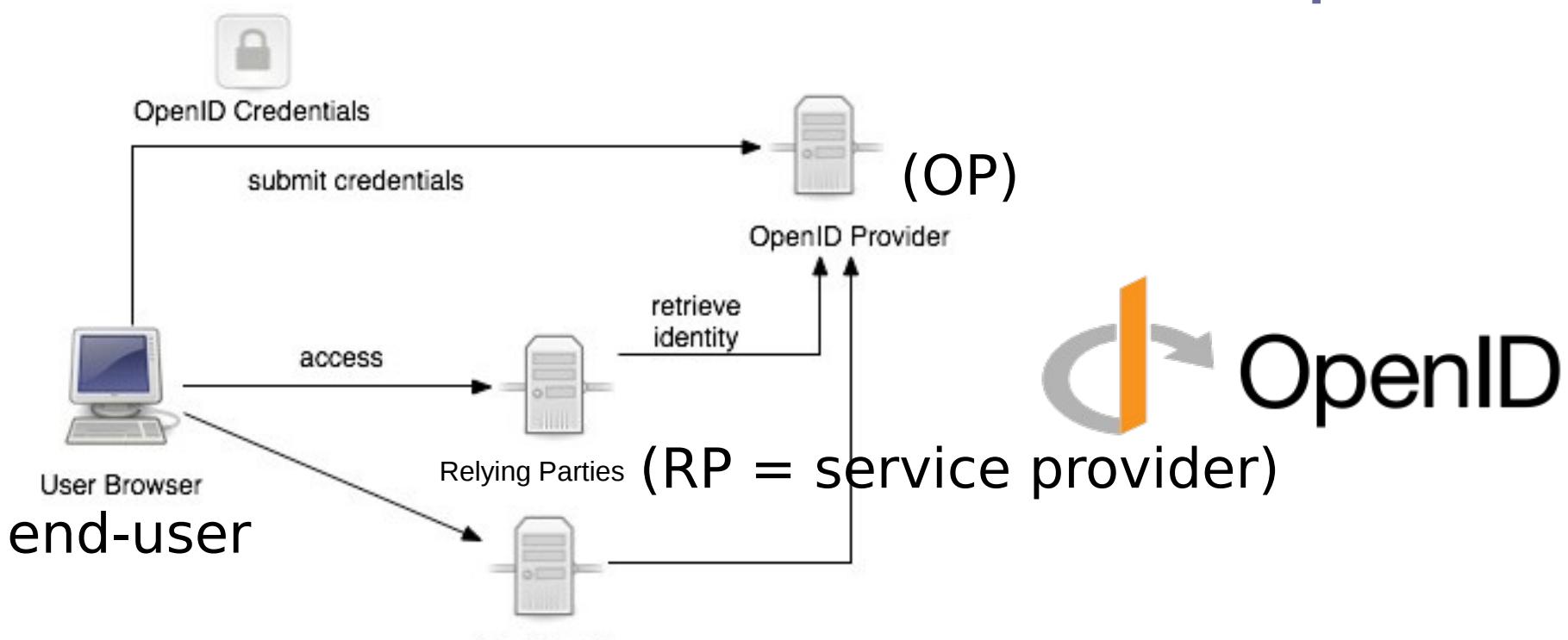
- ◆ **Shibboleth 2** = implementation of SAML2 for **SSO Authentication**
- ◆ **eduGAIN** : Identity Federation (RENATER, ...)
  - ◆ *Tested using Apache2 / mod\_shib + mod\_ssl + django-shibboleth-remoteuser*
  - ◆ Dedicated to **research community**
  - ◆ Dedicated to **web authentication**
  - ◆ **WAYF** (Where Are You From): additional step to locate your IdP
  - ◆ Need to **register** the service in eduGAIN (with a x509 certificate)

# eduGAIN status

<https://technical.edugain.org/status.php>



# Social Networks: OAuth and OpenID



- ◆ **OpenID** is a way to use a single set of user credentials to access multiple sites
  - ◆ *Tested using Django + django-openid-auth*
- ◆ **OAuth 2** is an **authorization** framework usable for **authentication**
  - ◆ *Tested using Django + python-social-auth*
  - ◆ Need to **register** the service at OP
- ◆ **OpenID Connect** (now replacing OpenID) sits on top of the OAuth 2.0 framework
  - ◆ **WebFinger** : automatically finds your OP

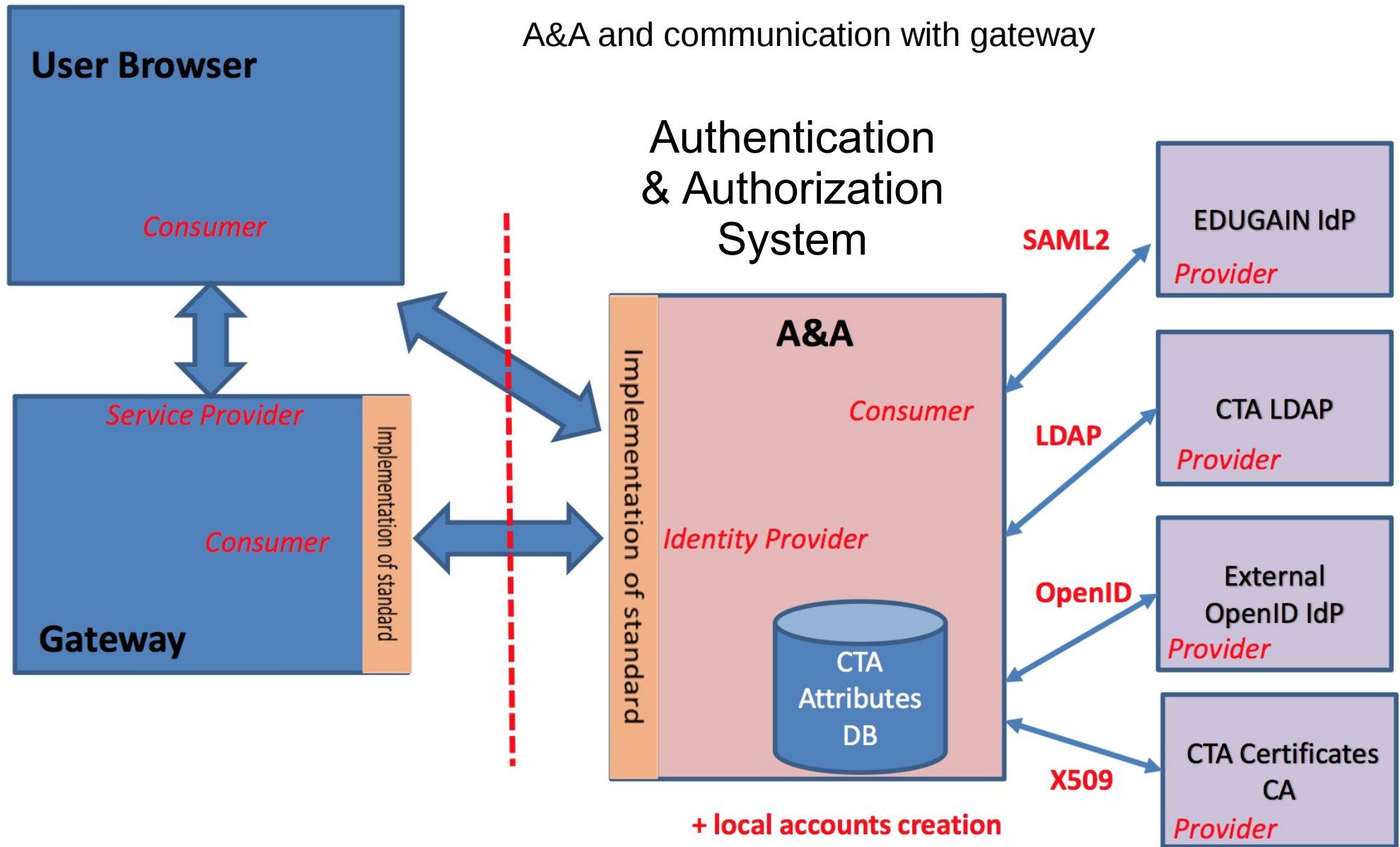
# Testing SSO for CTA VO Data Access

<http://voparis-cta-client.obspm.fr/>

The screenshot shows the login interface for the CTA Data Distiller. At the top left is the Paris Data Centre logo, and at the top right is the CTA Cherenkov Telescope Array logo. Below the header, there is a search bar labeled "Search Form". On the right side, there is a "Sign in" button. The main area contains three sections for authentication:

- A blue button labeled "Sign in through eduGAIN".
- A section labeled "OR" containing three sub-options:
  - OpenID: with a logo of a stylized orange "I".
  - OAuth: with a logo of a white bird on a blue background.
  - OAuth2: with logos for Google (multicolored "G") and GitHub (black octocat).
- A section labeled "OR" containing a form with fields for "Username" (containing "user") and "Password" (containing "..."). It includes "Submit" and "Reset" buttons.

# CTA Science Gateway A&A

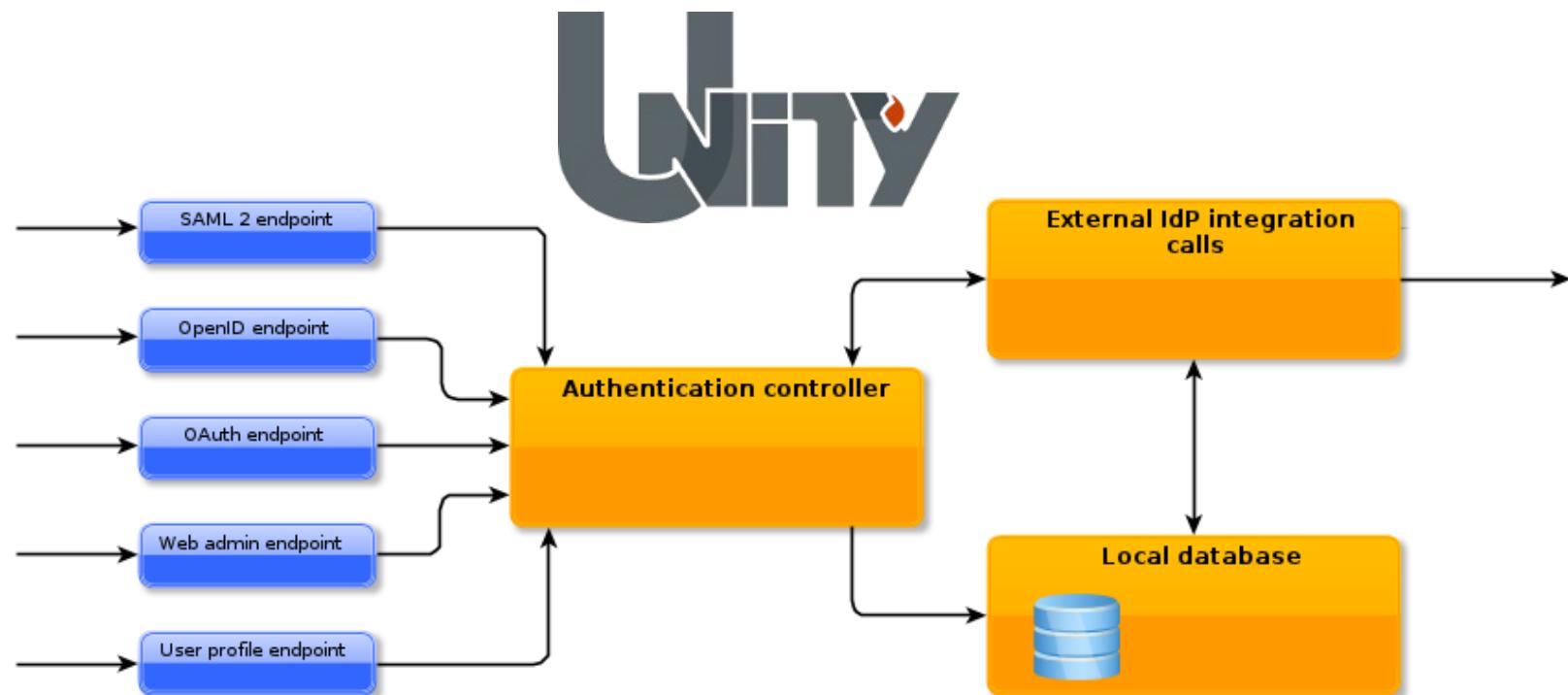


# Gateway common integration rules

- ◆ Top Menu Bar for all applications
  - ◆ A common HTML code should appear on all Gateway services, accessible through e.g. a single URL
  - ◆ A common style: Bootstrap3 fixed navbar, which is the library already used by the Distiller
  - ◆ *Tested for the Data Distiller*, but with its local login engine:  
<http://voparis-cta-client.obspm.fr/>
- ◆ Centralized Authentication Systems **prototypes**
  - ◆ Unity  
<http://www.unity-idm.eu/>
  - ◆ Grouper  
<http://www.internet2.edu/products-services/trust-identity-middleware/grouper/>
  - ◆ *Being tested with Django plugins*

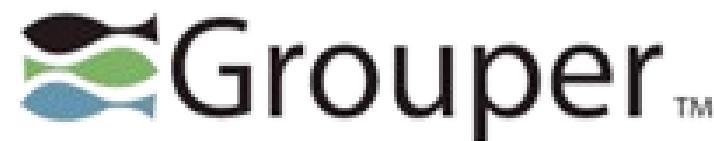
# A&A with Unity

- ◆ Solution for identity, federation and inter-federation management
- ◆ Lead by ICM (University of Warsaw)
- ◆ Open Source (permissive BSD licence)



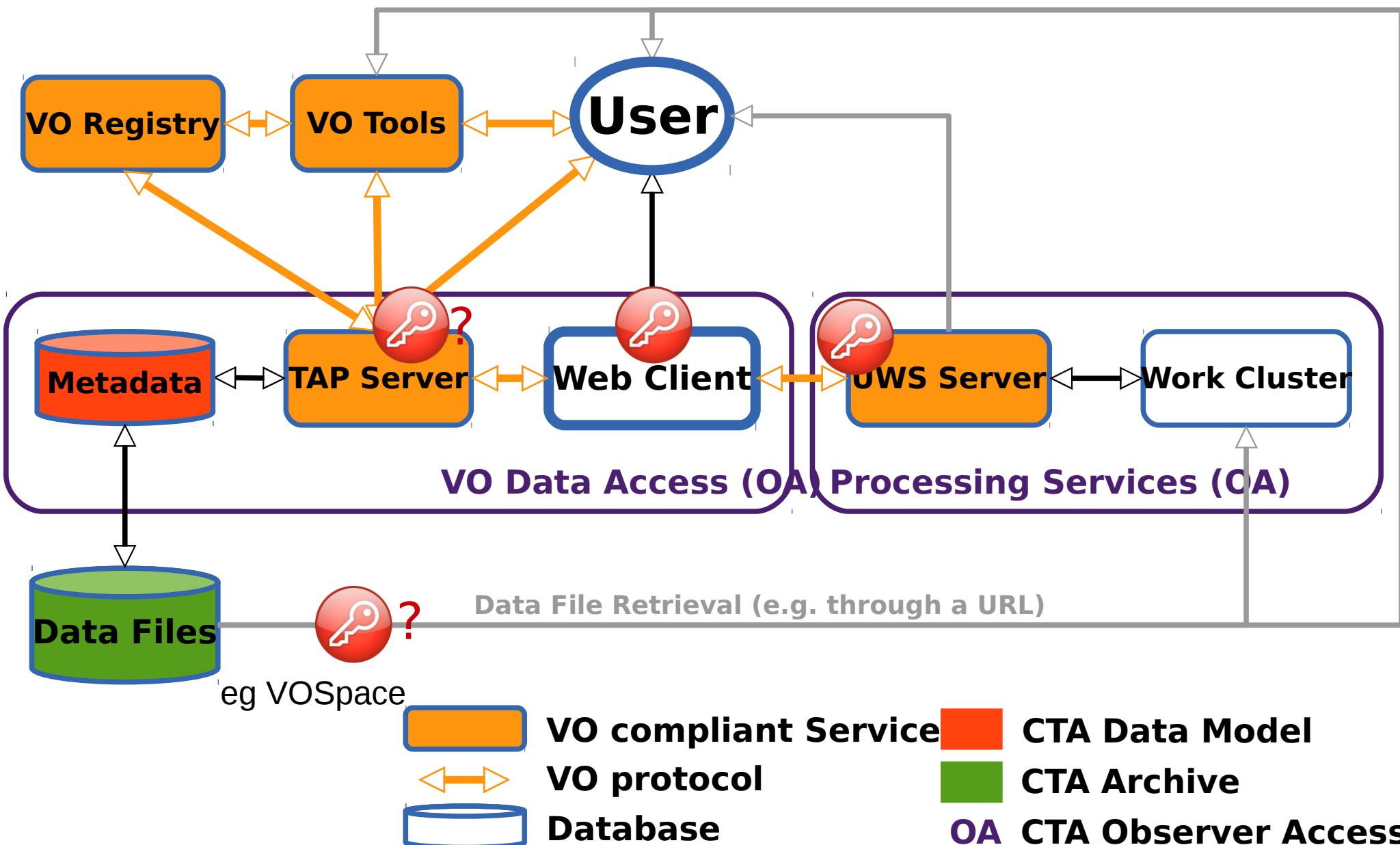
# A&A with Grouper

- ◆ Grouper is an **access management system**, used to create and manage institutional and personal groups, roles and permissions
- ◆ Developped by **internet2** (US research and education network)
- ◆ **Open-source** software (Apache 2.0 licence)
- ◆ Same « spirit » as for **eduGAIN** and **Shibboleth**
- ◆ Widely used for research and education (LIGO, LHC/Michigan...)





# Use Cases: VO Data Access for CTA



# Prototype client obsnm.fr

[http://voparis-cta-](http://voparis-cta-client.obsnm.fr)

The screenshot shows the CTA Data Distiller interface. At the top, there's a banner featuring the Paris Data Centre logo and the Cherenkov Telescope Array (CTA) logo. Below the banner, the page title is "CTA Data Distiller". There are three navigation links: "Search Form", "Job List", and "Sign out user". The main content area has a heading "Cone Search" with a checked checkbox. Below it, there are four input fields: "Target Name" (Crab Nebula), "Source RA (deg)" (83.633), "Source Dec (deg)" (22.514), and "Search radius (deg)" (0.001). To the right of the "Target Name" field is a note: "Used to query Simbad with Sesame and set RA/Dec.". Below the input fields are two buttons: "Submit" and "Reset". To the right of the search form, there is a bulleted list of features:

- ◆ Django, jQuery, BootStrap3
- ◆ **Name resolver**  
Simbad through Sesame
- ◆ Builds and Sends the **ADQL query**

### ObsCore Search

proposal\_id:  Proposal ID

dataproduct\_type:  Data product (file content) primary type

dataproduct\_level:  DL0-5

# Prototype client.obspm.fr

[http://voparis-cta-](http://voparis-cta-client.obspm.fr)

The screenshot shows the CTA Data Distiller interface with several key components:

- Header:** Includes the Paris Data Centre logo, a background image of the Cherenkov Telescope Array (CTA) in a desert, and the CTA logo.
- Navigation:** Features "Search Datasets", "Results", "Job List", "Selected Job", and "JS9".
- Authentication:** Includes "Authentication" and "Sign out user".
- Section Labels:** "Search", "Analyse", and "Visualisation" are labeled below the navigation bar.
- Results Section:** Contains an "ADQL query" input field with the following text:

```
SELECT * FROM cta.vo_obscore as o WHERE 1 = intersects(o.s_region, circle('ICRS', 83.63308333, 22.0145, 0.001))
```

 and a "Send" button.
- Data Table:** A table titled "ObsCore fields" displays the following data:

dataproduct_type	obs_collection	obs_id	target_name	s_ra (deg)	s_dec (deg)
eventlist	1	23592	Crab Nebula	82.01333618164062	22.01444435119629
eventlist	1	23559	Crab Nebula	85.25333404541016	22.01444435119629
eventlist	1	23526	Crab Nebula	83.63333129882812	22.51444435119629
eventlist	1	23523	Crab Nebula	83.63333129882812	21.51444435119629
eventlist	3	5003499	CrabNebula	83.28087615966797	21.784133911132812

Annotations highlight the "ObsCore fields" header and the "UWS" label next to the last column of the table.

On the right side, there are sections for "SAMP", "Interop (SAMP)", "Analysis tools", "Plotting tools", and "Other Tools".

At the bottom, there are pagination controls and a "records per page" dropdown.