



# IVOA Interoperability meeting

## Authentication, data access, computing interoperability of IVOA based cloud services S.Bertocco

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# FRAMEWORK

Joint project:

- Canadian Advanced Network for Astronomical Research (**CANFAR**)
- INAF-Osservatorio Astronomico di Trieste (**OATs**)



# Infrastructure

The screenshot shows the CANFAR website interface. At the top, there is a navigation bar with 'Nodes', 'Resources', and 'About' dropdown menus. A sidebar on the left lists 'Expertise', 'Services', and 'Open Source'. The main content area is divided into several service cards, each with a title, description, and links for documentation and service portals. The cards are: 'OpenStack Cloud' (blue border), 'Storage' (red border), 'Group Management' (green border), 'Digital Object Identifiers', 'Batch Processing' (blue border), and 'CADC Data Collections'. The browser address bar shows 'www.canfar.net/en/resources/services/'.





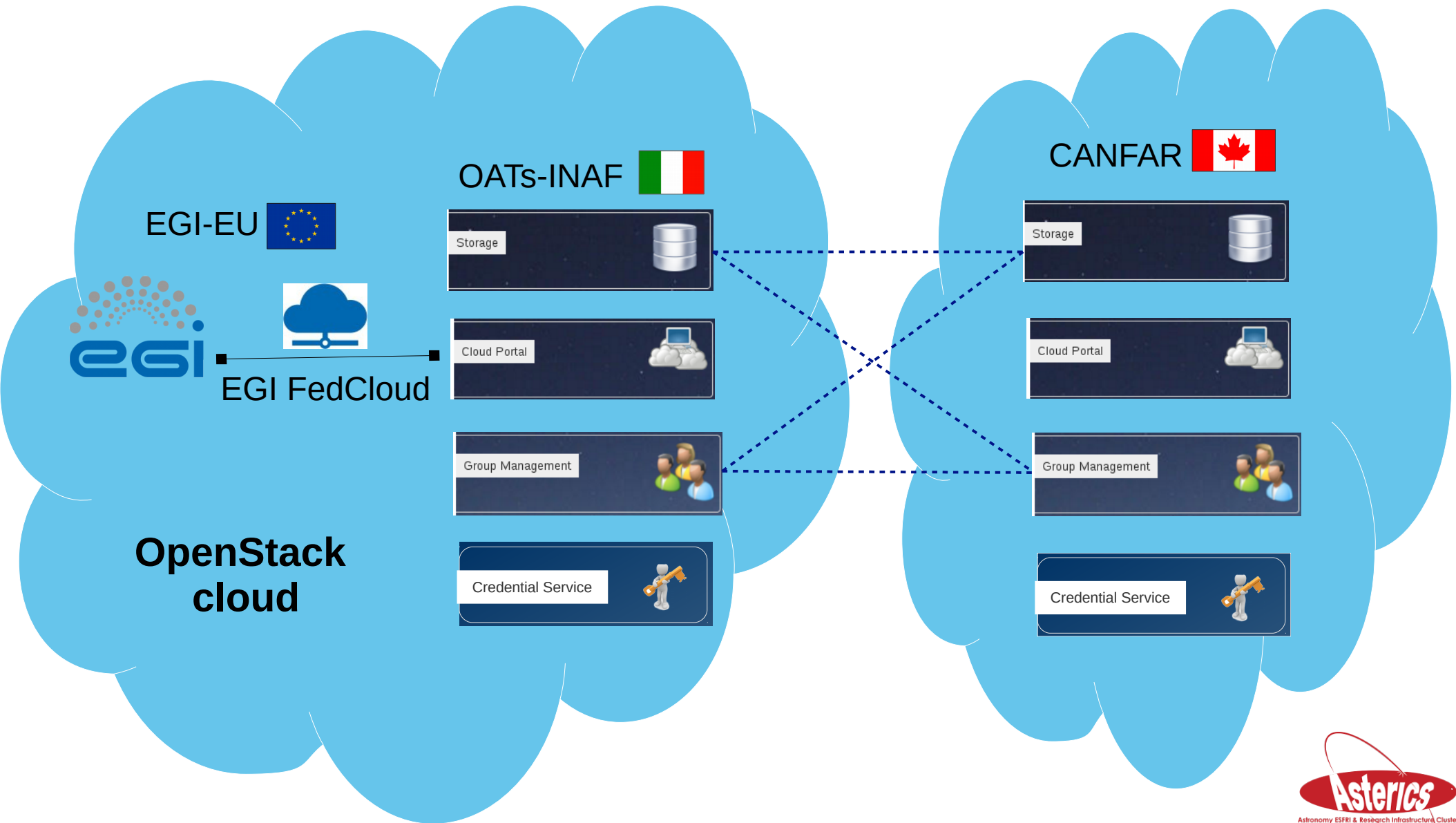
- <https://github.com/opencadc>

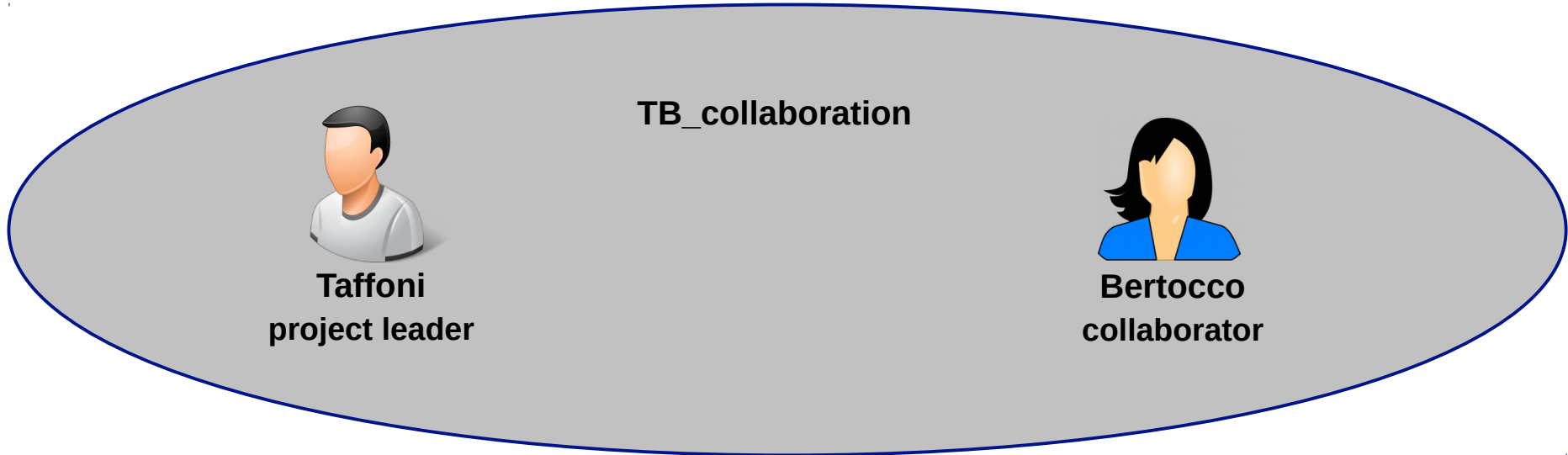
## Modules:

- ac            Access Control (including GMS)
- cdp            Credential Delegation Protocol implementation
- vos            VOSpace standard implementation
- reg            registry interface implementation
- uws            Universal Worker Service Pattern implementation
- core            core utilities and logging
- Virtual Observatory (VO) implementation
- IVOA Standards based (<http://ivoa.net/>)






# Integration status



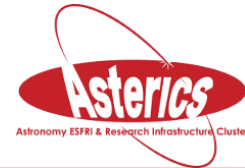


 **CANFAR User Access  
and  
Groups Management**

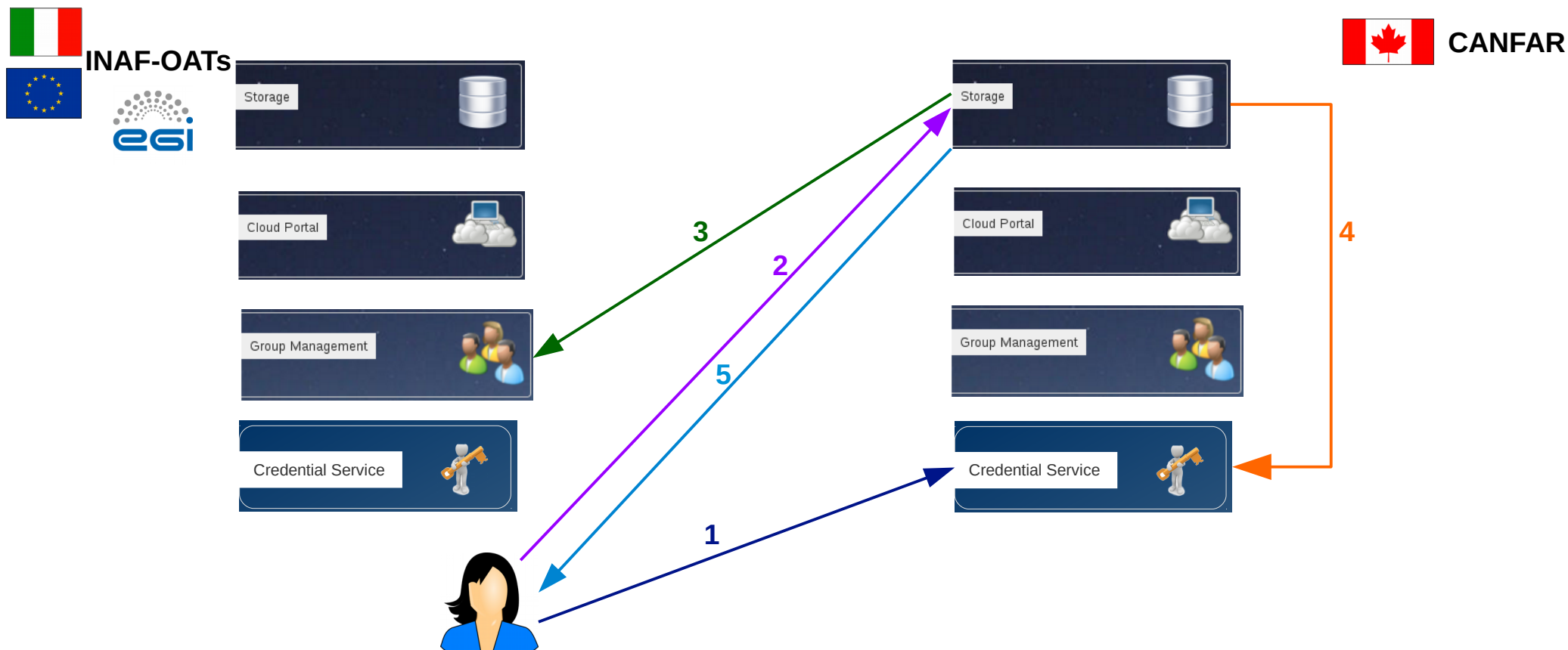
- Taffoni has access
- Taffoni creates a collaboration folder in his CANFAR vospace area
- Taffoni adds to the group `ivo://oats.inaf.it/gms#TB_collaboration` the group-write permissions to his CANFAR folder "collaboration"

 **INAF OATs User Access  
and  
Groups Management**  

- Bertocco has access
- Taffoni has access
- Taffoni creates TB\_collaboration group
- Taffoni adds Bertocco to TB\_collaboration group



# Description



- 1) INAF-OATs user Bertocco delegates her x509 credentials to CANFAR Credential Service
- 2) user Bertocco asks for data of her INAF-OATs group to CANFAR storage service
- 3) CANFAR storage service checks the group affiliation of the user in the INAF-OATs group management service
- 4) CANFAR storage service gets the user's delegated credentials from the CANFAR Credential Delegation Service to be able to make calls to each other service on behalf of the initial user
- 5) CANFAR storage service returns data to the INAF-OATs user Bertocco



- Java client
- Python client
- RestFul interface
- Web GUI



- Create a proxy

```
voms-proxy-init -voms planck --hours 2100 -rfc
```

- Delegate credentials

```
java ca.nrc.cadc.cred.client.Main --resourceID=ivo://cadnrc.ca/cred  
--delegate --daysValid=31 --cert=$X509_USER_PROXY -d
```

- Download data

```
java ca.nrc.cadc.vos.client.Main --copy  
--src=vos://cadnrc.ca\!vospace/taffoni/TB_share_folder/testfile.txt  
--dest=test1.txt --cert=$X509_USER_PROXY -d
```

- Upload data

```
java ca.nrc.cadc.vos.client.Main --copy  
--dest=vos://cadnrc.ca\  
vospace/taffoni/TB_share_folder/testfile1.txt --src=test1.txt  
--cert=$X509_USER_PROXY -d
```



# Computation interop

- Using a voms proxy

```
voms-proxy-init -voms planck --hours 2100 -rfc
```

- Get an authentication token

```
curl --cert $X509_USER_PROXY  
-d '{"auth":{"voms": true, "tenantName": "planck"}}'  
-H "Content-type: application/json" https://cloud.oats.inaf.it:5000/v2.0/tokens |  
python -m json.tool
```

- Connect to OpenStack console using the token


```
openstack --os-auth-type token --os-auth-url https://cloud.oats.inaf.it:5000/v2.0  
--os-project-name planck --os-token bf2428676db34a4c81c6dbdcbe36e61d
```

- Create a Virtual Machine

```
server create --flavor m1.medium --image "canfarprod" --nic net-id=4b7e33c7-  
af8a-48a9-9e2d-29225cc15f47 --security-group default --user-data mydata.cfg  
canfar-prod
```

# Computation interop

Login - OpenStack Dashboard - Mozilla Firefox  
 File Edit View History Bookmarks Tools Help  
 User S... | User Stor... | Log... x  
 https://cloud.oats.inaf.it/dashboa



**Log in**  
 Domain  
  
 User Name  
  
 Password

Mozilla Firefox  
 Bookmarks Tools Help  
 imbra: Inbox x | User Storage x | User Storage x | Login - Open... x  
 Storage/list | Search | ☆ | 📁 | 📄 | 🏠 | 😊 | ⌵ | ☰

## ROOT

Showing 1 to 5 of 5 entries

	Name	Size	Last Modified (UTC)	Read/Write	Read
<input type="checkbox"/>	adamian	--	2017-04-04 - 15:10:05	cadc-collab	Public
<input type="checkbox"/>	bertocco	--	2017-04-04 - 15:10:05	null	Public
<input type="checkbox"/>	majorb	--	2017-04-04 - 15:10:06	cadc-collab	Public
<input type="checkbox"/>	OATS_INAF_VOSPACE	--	2016-12-20 - 10:51:09	inaf-ops	Public
<input type="checkbox"/>	pdowler	--	2017-04-04 - 15:10:05	cadc-collab	Public



# Thanks!