Towards a Global Federated Framework For Open Science Cloud - EaP

Principal Investigators:

Hussein Sherief, Director AASCTC Khartoum, hussein.sherief@aasctc.com

Jianhui Li, Director of CSTCloud (CNIC-CAS), lijh@cnic.cn

Shepherds: Giuseppe La Rocca, EGI Foundation, giuseppe.larocca@egi.eu

Entry in the community requirement database: Towards a Global Federated Framework For Open Science Cloud

About the pilot

Description of supported work

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Objectives

1. Initial integration, federation and interoperability between CSTCloud and EOSC.
2. Testing the three pilots in the federated infrastructure
3. Forecasting Taiwan Typhoon using 1 km resolution, Doppler Radar and radiation satellite and high resolution satellite images.
4. Precision medicine using animal or plant Genomics.
5. SmartCity Storm surge and disaster assessment using satellite data.

General

The project aims to allow researchers from Africa and China to use EOSC services to analyse and publish datasets on a federated cloud infrastructure composed
by EGI and CNIC CAS resources.

Three different pilot use cases have been identified during this project:

- Disaster risk: CASEarth provides high resolution (8 m) satellite data and radiation satellite images for the simulation of tsunami, hurricane, earthquakes,
  typhoons, floods and extreme weather.
- Smart City: ESA and CSTCloud provide high resolution data and sensor data for the city of Shenzhen in Guangzhou province, China.
- Precision Medicine: Beijing Institute of Genomics (BIG) provides datasets for analysing genetic make up of diseases.

Team

Participant	Role	Name and Surname
Director AASCTC Khartoum	PI	Hussein Sherief
Director of CSTCloud (CNIC-CAS)	PI	Jianhui Li
EGI Foundation	Shepherd	Giuseppe La Rocca
LNEC	Technical support	Anabela Oliveira, André Fortunato, João Rogeiro and Alberto Azevedo
Academia Sinica Grid Computing (ASGC)	Technical support	Eric Yen
PSNC	Cloud Provider	Marcin Plociennik and Norbert Meyer

Technical Plan

The full technical plan can be found here:

https://docs.google.com/document/d/1r9mI1H7IvNCi2ePKc-Fv5GWbSROrGxKp/edit

Work planned for Q1	
Work planned for Q2	
Work planned for Q3	

EOSC services and providers

Providers

PSNC is contributing with cloud resources for supporting the three pilot use cases (3PMs).

Additional computing and storage resources will be complemented by the OCRE project.

Services

- EGI AAI Check-In service will be used to enable access to global cloud infrastructure.
    - For this integration no additional effort is allocated since a MoU between EGI and CSTCloud is already in place.
- Cloud Compute, online and long-term archiving storage.
- OPENCoasT service
    - 6PMs are allocated to LNEC to extend the framework and support the EaP application
- DMCC+ service
    - 3PMs are allocated to ACGC to support the EaP application
    - WRF 4DVAR
- AGROS (OpenAIRE)
    - No additional effort is requested from the service provider side