

# EMSO ERIC

A pan-European  
Distributed Research  
Infrastructure

*OBSERVING THE OCEAN TO SAVE THE EARTH*

## EMSO ERIC Data Services

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The EMSO-Link project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreements N° 731036.



# EMSO ERIC

DISTRIBUTED RESEARCH INFRASTRUCTURE

EMSO ERIC was constituted on September 29, 2016 (EU Official Journal L268/59 October 1<sup>st</sup>, 2016)

1 CENTRAL HUB AND 11 INTERLINKED  
FIXED POINT MULTI-SENSORS PLATFORMS

## EXCELLENCES

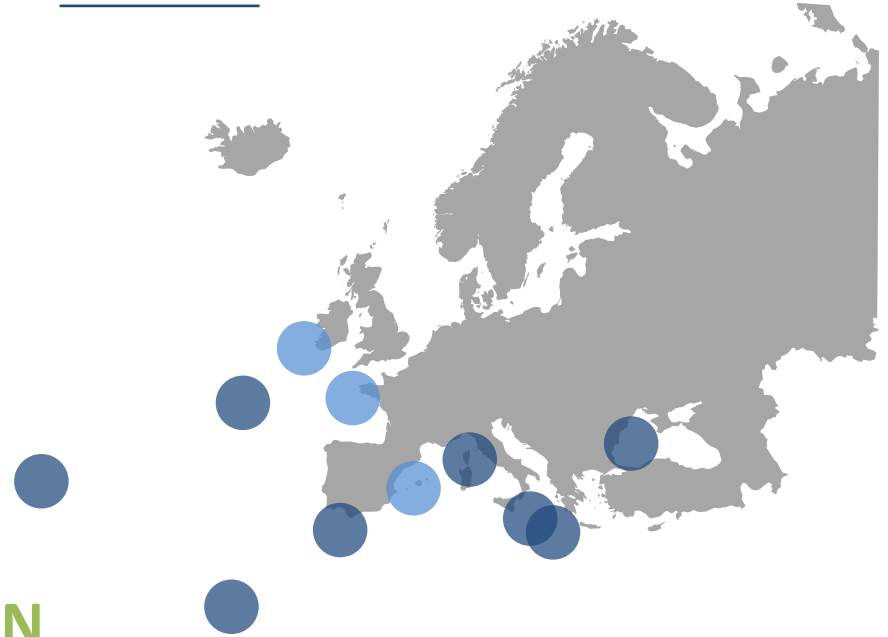
Delivering standardised: services, data process, scientific results.

High level of **INTEGRATION** among 11 multi-sensor platforms and 17 European institutions  
**Common access policy** and a single point of access for all users

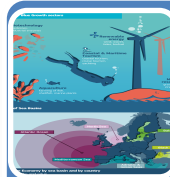
User programme designed to absorb capacity of the RI

**ADDED VALUE** compared to the value of a single research cooperation network

**JOINT INVESTMENT STRATEGY** to strengthening EMSO ERIC through its regional facilities/test sites and common and shared services

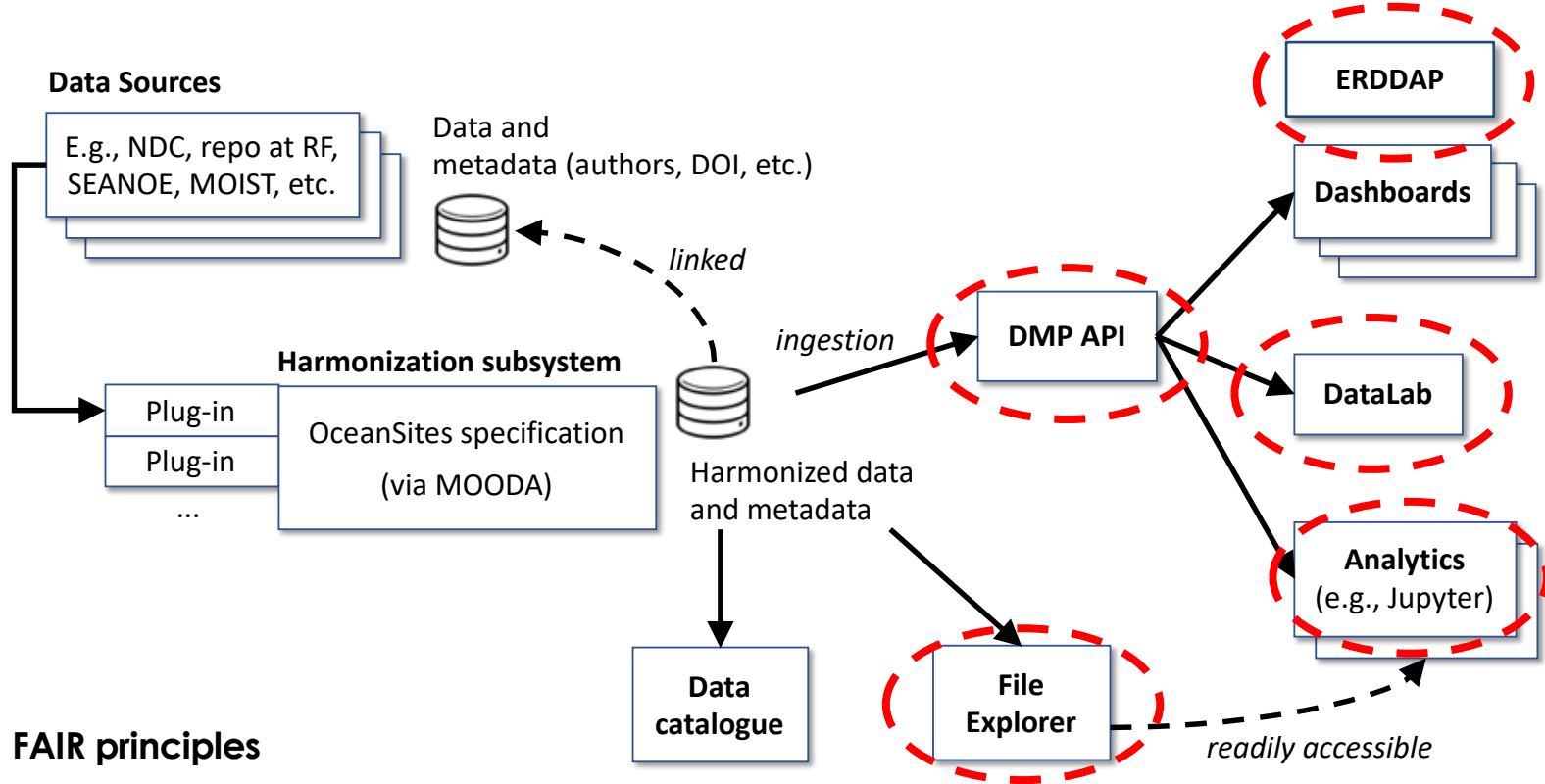


## MISSION



To establish a comprehensive and smart sensor system in water column, seafloor, and sub-seafloor environments as part of the integrated and sustainable organization EMSO ERIC

# Baseline Implementation of EMSO ERIC Data Services



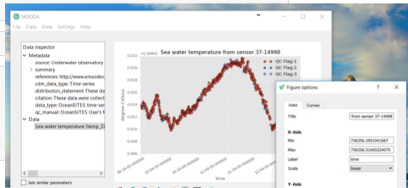
- FAIR principles
- EOSC guidelines (EOSC-Hub EAP)

# Harmonization and Cyberinfrastructure Deployment

## MOODA (Module of Ocean Observatory Data Analysis)

- Data harmonization (OceanSites standard), data management and transport

```
In [1]: from mooda.access import EGIM
In [2]: egim = EGIM("login", "password")
In [3]: code, observatories = egim.observatories()
if code == 2000:
    for i, observatory in enumerate(observatories):
        print(i, observatory)
else:
    print("Error code:", code)
```



The screenshot shows a Jupyter Notebook interface. On the left, there is a code editor with three input cells. The first cell imports the EGIM class from mooda.access. The second cell creates an EGIM instance with login and password credentials. The third cell calls the observatories method, which returns a code and a list of observatories. The output shows a list of observatories. On the right, there is a plot titled 'See water temperature from station 37-14900'. The plot shows a line graph of water temperature over time, with a peak around 0.000 and a trough around -0.000. The plot is displayed in a window titled 'Figure 1: water temperature from station 37-14900'.

MOODA as a library or with the Graphical User Interface (GUI)

## EOSC-Hub Early Adopter Programme

- EGI Cloud Compute service (Openstack services at CESGA and RECAS-BARI)
- EGI Online Storage
- Technical plan (targeting registration in the EOSC Portal Marketplace)

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# Work Plan Status

Quarter (2020)	Work Planned	Status and notes
Q1	<ul style="list-style-type: none"> <li>Identify the adequate capacity for implementing the project.</li> <li>Engage with the EOSC providers interested to support the project activities.</li> <li>Scale-up the compute and storage resources to move the DMP to preproduction. The platform will be replicated in two cloud providers for redundancy.</li> </ul>	<ul style="list-style-type: none"> <li>Defined resource requirements and basic services.</li> <li>Obtained resources from RECAS-BARI and CESGA</li> <li>Deployed core data services at RECAS-BARI</li> <li>Migration of services from OpenNebula to OpenStack</li> <li>Short training-oriented session on data services delivered using EGI resources at EMSO Conference (Athens, Feb 12)</li> </ul>
Q2	<ul style="list-style-type: none"> <li>Enable/integrate federated identity management in the EMSO-ERIC Data Management Platform using one of the available AAI solutions provided by EOSC-hub.</li> <li>Perform initial scalability tests of the EMSO-ERIC DMP in EOSC.</li> </ul>	<ul style="list-style-type: none"> <li>Prioritized data services: ERDDAP deployment</li> <li>Prioritized data services: DataLab</li> <li>Prioritized capabilities: Engagement with DOI provider</li> <li>Ongoing deployment of mirrored/distributed services in CESGA</li> </ul>
Q3	<ul style="list-style-type: none"> <li>Enabling the EOSC-hub monitoring in the DMP.</li> <li>Enabling the EOSC-hub accounting in the DMP.</li> <li>Increase the scale of the tests of the platform in EOSC.</li> </ul>	<ul style="list-style-type: none"> <li>Working on AAI integration (EGI Check-in service)</li> <li>Enhancements in the DMP monitoring system to enable scalability/stress tests</li> <li>Potential OLAs through INFRAEOSC-07 proposal</li> </ul>
Q4	<ul style="list-style-type: none"> <li>Agreed OLAs with the EOSC providers.</li> <li>Registration of the EMSO-ERIC Data Management Platform in the EOSC Portal.</li> </ul>	<ul style="list-style-type: none"> <li>Extension agreed with resources providers through Mar 2021</li> <li>INFRAEOSC-07 proposal accepted (sustaining resources through EGI)</li> <li>Working on AAI integration (EGI Check-in service)</li> <li>AAI solution (EGI Check-in service) completed. Transitioning to production.</li> <li>Registration in the EOSC Portal by early 2021</li> </ul>

# EMSO ERIC Data Services @EGI (RECAS-BARI)

Production (Internal/External Access)	Testing/Staging (Internal/External Access)	Development (Internal/External Access)
DMP Back-end (E)	DMP Back-end Test (I)	DMP Back-end Dev (I)
Data Portal Front-End (E)	Data Portal Front-End Test (I)	Data Portal Front-End Dev (I)
EMSO ERIC API (E)	EMSO ERIC API Test (I)	
DataLab (E)	DataLab Test (E)	DataLab Dev (I)
Virtual Research Environment – VRE (E)	<i>Training VRE (E) – on demand only</i>	
	EMSO ERIC ERDDAP Test (E)	
ERDDAP-OBSEA (E)		
GitLab (E)		

Publicly accessible services (since Q1 2020):

- ~100% uptime
- 2 incidents (networking issues) - no incidents since last meeting

# Current Steps (1)

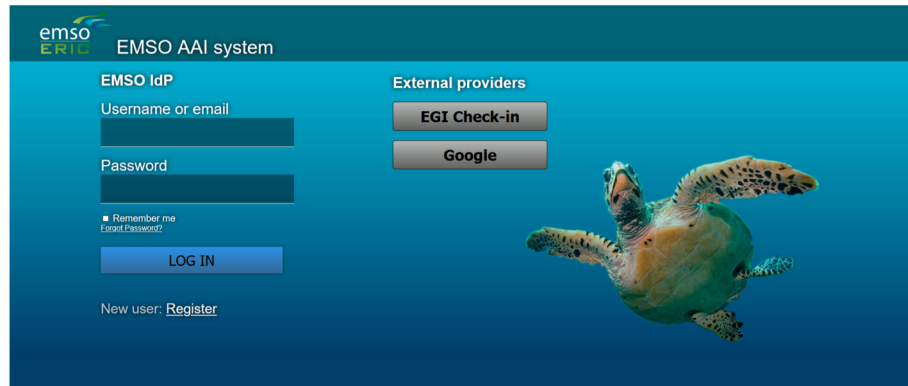
## Federated identity management implementation

- Engaged with EGI on the implementation of AAI based on the EGI Check-in service.

*EGI Check-in is a proxy service that operates as a central hub to connect federated Identity Providers (IdPs) with EGI service providers.*

*Check-in allows users to select their preferred IdP so that they can access and use EGI services in a uniform and easy way.*

- Developed an AAI solution (SSO, EMSO ERIC IdP, EGI-Check-in)



emso  
ERIC EMSO AAI system

EMSO IdP

Username or email

Password

Remember me  
Forgot Password?

LOG IN

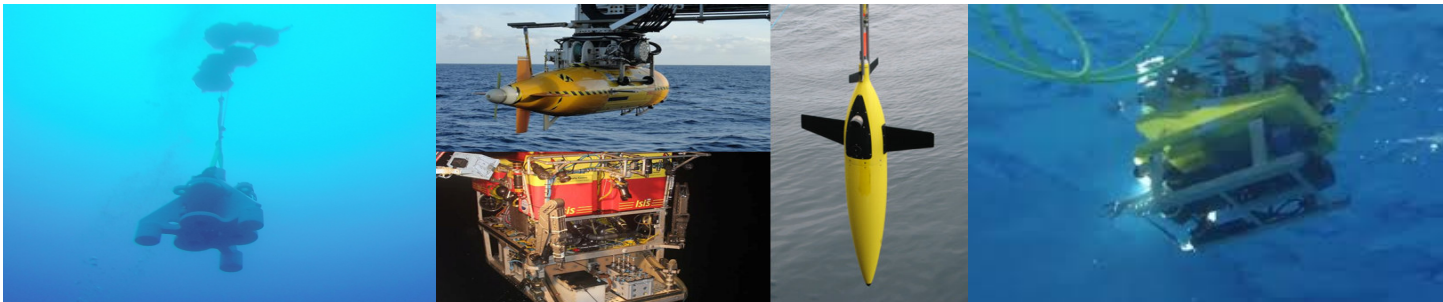
New user: [Register](#)

External providers

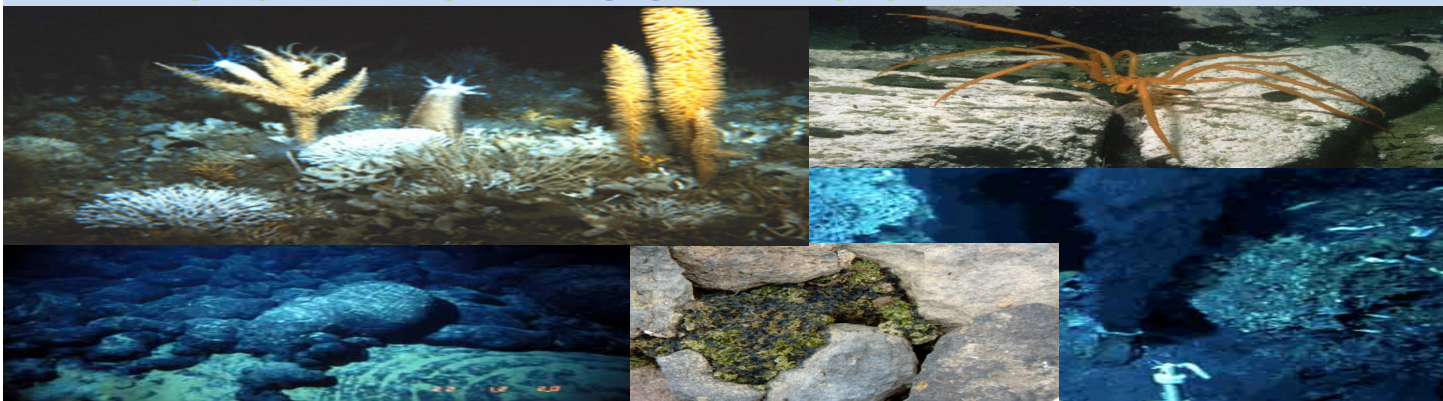
EGI Check-in

Google





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Thank you for your attention

[www.emso-eu.org](http://www.emso-eu.org)



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