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Building the EPOS-ORFEUS Competence Center in EOSC-hub

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The EOSC-hub project (https://eosc-hub.eu/) brings together multiple service providers to create the Hub – an integration and management system of the future European Open Science Cloud (EOSC). The Hub can be seen as an access and delivery channel for services, software and data provided by e-Infrastructures and research communities across Europe.

In the context of the EOSC-hub project the seismological community of the European Plate Observing System (EPOS), represented by ORFEUS, has the task to build the EPOS-ORFEUS Competence Centre (CC).

The EPOS-ORFEUS CC empowers users by establishing an enhanced service platform for seismological research. Data centres can define and share data management policies. Secure access to data and compute resources underpins users' services. Researchers can discover data from seismological repositories and initiate staging onto computational platforms. They can encode analysis methods into components, deploy and execute them close to data.

The platform integrates services from the EOSC-hub catalogue (www.eosc-hub.eu/catalogue) with community services (*e.g.* FDSN Dataselect, FDSN Station, EIDA WFCatalog).

The EPOS-ORFEUS CC focuses on four main use cases and aims to:

- Establish a federated Authentication Authorisation Infrastructure – this activity has already produced a system to manage authentication and authorisation of ORFEUS-EIDA users and it is integrated in the operational data services (*e.g.* FDSN Dataselect).
- Offer effective ways to stage data conveniently onto compute facilities – it relies on persistent identifiers (PIDs) and domain-specific metadata catalogues (EIDA WFCatalog).
- Enable user-defined data analysis in the cloud – *e.g.* by means of Jupyter Notebooks deployed in proximity of data.
- Promote and support shared policies for data management – it provides mechanisms to define and share best practices and data management policies.

In this contribution we will present the current status of the developments and our plans for integrating them into the EPOS operational infrastructure