# EIDA Next Generation: ongoing and future developments

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The European Integrated Data Archive (EIDA; http://www.orfeus-eu.org/eida/eida.html) is the distributed Data Centre system within ORFEUS, providing transparent access and services to high quality, seismic data across (currently) 9 large data archives in Europe. EIDA is growing, in terms of the number of participating data centres, the size of the archives, the variability of the data in the archives, the number of users, and the volume of downloads. The on-going success of EIDA is thus providing challenges that are the driving force behind the design of the next generation (NG) of EIDA, which is expected to be implemented within EPOS IP. EIDA ORFEUS must cope with further expansion of the system and more complex user requirements by developing new techniques and extended services. The EIDA NG is being designed to work on standard FDSN web services and two additional new web services: Routing Service and QC (quality controlled) service. This presentation highlights the challenges EIDA needs to address during the EPOS IP and focuses on these 2 new services.

The Routing Service can be considered as the core of EIDA NG. It was designed to assist users and clients to locate data within a federated, decentralized data centre (e.g. EIDA). A detailed, FDSN-compliant specification of the service has been developed. Our implementation of this service will run at every EIDA node, but is also capable of running on a user's computer, allowing anyone to define virtual or integrate existing data centres. This (meta)service needs to be queried in order to locate the data. Some smart clients (in a beta status) have been also provided to offer the user an integrated view of the whole EIDA, hiding the complexity of its internal structure. The service is open and able to be queried by anyone without the need of credentials or authentication.

The QC Service is developed to cope with user requirements to query for relevant data only. The web service provides detailed information on the contents of the waveform data in an archive and in particular the following features and quality parameters are provided: gaps, statistical values, availability, overlaps, quality flags and more. It is a tool to be used for quickly exploring the contents of the waveform files before downloading them, or by clients to fulfill user specific requirements. The API reflects almost identically the FDSN dataselect service with some additional features. The characteristics are computed on fixed daily intervals (day boundaries) and in case of gaps the service can additionally provide the above features for each continuous data segment in the day interval.

The newly developed services and the mediator service being designed and implemented in the near future, will facilitate interoperability and sustainability of the EIDA system and ensure a smooth integration with other Thematic (TCS) and Integrated (ICS) Core Services within EPOS.