

## WP 19: Federated infrastructure services for seismic waveform data in Europe

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Figure

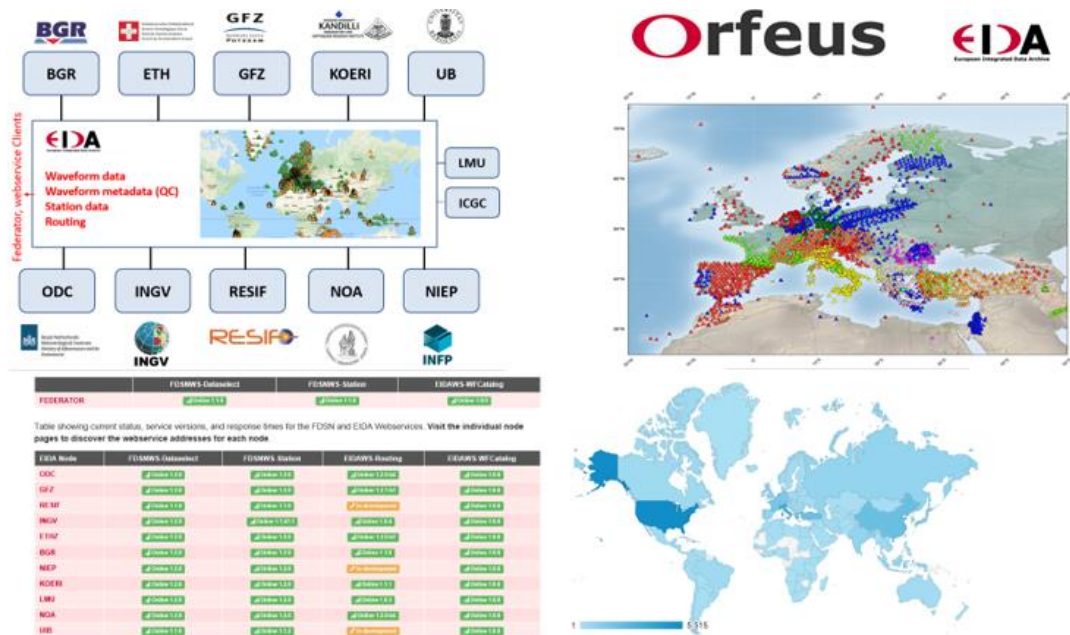


Figure 1. Overview of service provisioning through VA2. *Top-left:* Federation of European Data Archives (EIDA) providing transparent, standardized access to seismological waveform data collected and curated by (currently) 12 large European archives; *Top-right:* snapshot of seismic stations in Europe accessible through EIDA; *Bottom-left:* access to and status of all web services in EIDA, including the recently launched Federator; *Bottom-right:* global impact of services provided by VA2 for ORFEUS EIDA.

### Main Results

The ORFEUS infrastructure is one of the biggest infrastructures in the world that provides seismological data. Furthermore, it derives products to the scientific research community in strong collaboration with European seismological observatories. The infrastructure is organized as a networked system of observatory infrastructures, waveform data archives and services. A key component is the federated, distributed European Integrated waveform Data Archive (EIDA) that transparently connects a number of large data centers in Europe, including the ORFEUS Data Center.

This unique, federated archive serves seismological waveform data from permanent and temporary networks of broad-band sensors and strong motion sensors deployed in Europe and beyond through dedicated, standardized webservices. Currently, EIDA holds beyond 400 TB of data of 107 permanent networks and 190 temporary networks, with more than 11'000 seismic stations in total. ORFEUS EIDA is technically compatible with the EPOS infrastructure and therefore ready to accommodate other types of data to serve a broader solid Earth user community (e.g. earthquake engineering).

The following services are offered to the (seismological) research community to provide (virtual) access to raw waveform data and related metadata:

- a) ORFEUS website
- b) interactive EIDA data portal (GUI)
- c) EIDA standardized webservices
- d) RRSM (Rapid Raw Strong Motion database)
- e) StationBook

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