



ORFEUS Portfolio: the Gateway to High-Quality Seismic Data in Europe

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ORFEUS (Observatories and Research Facilities for European Seismology; <https://www.orfeus-eu.org/>) is a collaborative non-profit foundation that promotes seismology in the Euro-Mediterranean area through the collection, archival and distribution of digital seismic waveform data, metadata and derived products. ORFEUS is one of the three pillars of the Thematic Core Service for Seismology within the European Plate Observing System (EPOS Seismology). Hence, all ORFEUS services are developed in coordination with EPOS and are EPOS compliant. Among the goals of ORFEUS are: (a) the development and coordination of waveform data products; (b) the coordination of a European data distribution system, and the support for seismic networks in archiving and exchanging digital seismic waveform data; (c) the encouragement of the adoption of best practices for seismic network operation, data quality control and data management; (d) the promotion of open access to seismic waveform data, products and services for the broader Earth science community. These goals are achieved through the development and maintenance of services targeted to a broad community of seismological data users. Two Service Management Committees (SMCs) are established within ORFEUS devoted to managing, operating and developing (with the support of one or more Infrastructure Development Groups): (i) the European Integrated waveform Data Archive (EIDA; <https://www.orfeus-eu.org/data/eida/>); and (ii) the European Strong-Motion databases (SM; <https://www.orfeus-eu.org/data/strong/>). The establishment of two additional SMCs is being considered to represent the computational seismology and mobile pools communities within ORFEUS. Access to ORFEUS EIDA and SM products is ensured through state-of-the-art information and communications technologies, with strong emphasis on federated web services that considerably improve seamless user access to data gathered and/or distributed by ORFEUS institutions. The web services also facilitate the automation of downstream products. Particular attention is paid to adopting clear data policies and licences, and to acknowledging the crucial role played by data providers / owners, who are part of the ORFEUS community. The products and services delivered by ORFEUS are assessed and improved through the technical and scientific feedback of a User Advisory Group, comprised of European Earth scientists with expertise encompassing a broad range of disciplines. This contribution presents the products and services of ORFEUS and introduces the planned key future developments. We welcome community feedback about the ORFEUS strategies aimed at the continuous optimisation of data quality, access, dissemination and use.