

The Next-Generation Strong-Motion Data Dissemination in the European-Mediterranean Region

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During the last years significant efforts have been undertaken to successfully develop strategies for strong-motion waveform data and event metadata dissemination in the European-Mediterranean region.

Supported by the EC-funded project NERA and building upon previous FP6 and FP7 experiences, two new databases have been designed that are a) interoperable with the European Infrastructure for Seismological Waveforms ORFEUS EIDA (European Integrated Waveform Data Archive) and b) provide innovative web interfaces for data access by the communities of engineers and seismologists.

The European Rapid Raw Strong-Motion database (RRSM; www.orfeus-eu.org/rtrsm) uses all on-scale recordings openly available through EIDA (www.orfeus-eu.org/eida/eida.html) to provide parameterised earthquake ground-motion information, as well as access to waveform data, within minutes after an earthquake with $M \geq 3.5$ occurring in the European–Mediterranean region. The RRSM does not rely on manual waveform processing but instead is populated using the waveform processing module scwffparam, which is integrated in the open-source software SeisComp3 (www.seiscomp3.org/doc/jakarta/current/apps/scwffparam.html).

Processing is triggered using earthquake parameters provided by the European–Mediterranean Seismological Centre (EMSC; www.emsc-csem.org).

The European Engineering Strong-Motion database (ESM; <http://esm.mi.ingv.it>) was specifically designed to disseminate only quality-checked, uniformly processed strong-motion data and relevant station and event metadata. The ESM database structure and waveform processing strategy are based on ITACA, the Italian Accelerometric Archive (<http://itaca.mi.ingv.it>). The ESM is designed to automatically extract data from EIDA, or through FDSN webservices, but also to host offline records from providers that do not distribute data through international organizations and preserve the existing patrimony of “historical” data, mainly recorded by analogue instruments operating before 2000.

The RRSM and the ESM target seismologists and strong-motion data analysts, earthquake and geotechnical engineers, international earthquake response agencies, and the educated general public. We present in this contribution the key features of, and frontends to the two databases and discuss our strategy for their future maintenance and further development. We welcome community input on how our strategy can be optimised based on user needs.