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EMSC Earthquake Information Services: Remote Access to Earthquake Parametric Data and Products – a NERA service activity

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The European-Mediterranean Seismological Centre (EMSC) provides access to real time earthquake information, parametric data, and earthquake products including the reference seismological bulletin for the Euro-Med region, rapid loss estimates, and in-situ information on the effects of earthquakes derived from online macroseismic questionnaires in more than 30 languages, felt maps, and database of pictures, etc.

Seismological data are collated from approximately 1600 seismic stations from about 100 different institutes from Iceland to Oman and from Russia to Morocco. In-situ information on earthquake impact is collected directly from the public. The EMSC also plays a key role in integrating and informing the seismological community through its Newsletter, email, and social network postings, and has a unique outreach beyond the extents of Europe into Northern Africa and the Middle East. The international nature of the EMSC allows it to provide improved earthquake information in border and offshore regions, as well as being a unique source of information for international organizations.

Rapid earthquake information is provided on the EMSC web site, which receives roughly one million visits per month from more than 150 countries. The reference Euro-Med Seismological bulletin, collating the final analysis of seismicity by the 80 contributing network operators representing more than 2500 stations, has been produced since 1998. The EMSC also provides rapid impact estimate services, providing automatic level 0 impact assessments, felt maps produced within the first 5 minutes after the earthquake occurrence, macroseismic maps, and pictures of earthquake damage collected from eyewitnesses. By collecting data from an international audience, the EMSC can offer macroseismic maps unconstrained by political boundaries.

The EMSC also supports web-services to distribute a unique earthquake identifier to link information about a specific earthquake across different databases, and several services in development for seismic and accelerometric station metadata, and geographic coordinate regionalization (i.e. standardized names for geographical regions). A messaging system named QWIDS has been also implemented for real time exchange and standing orders for products. The EMSC is expanding its data catalogue services with all low-magnitude events from participating networks in the Euro-Med bulletin, which will more than double the number of reported earthquakes, making these previously unavailable data available through the online data services

The EC-project NERA (www.nera-eu.org; EC-project 262330) aims to integrate the seismological and the acceleration observational research infrastructure, thus coordinating RI activities relevant for the seismological and earthquake engineering communities in Europe. The NERA project supports access to the EMSC services through a Service Activity. The means of access supported through this initiative include a variety of internet techniques, from emails, autoDRM, ftp, http and web access and distribution mechanisms, a messaging system, to web services, in order to meet the needs of a diverse community of users (network operators, academic researchers) and diverse type of use (operational, research).

By providing data access through internet web services, researchers are able to access the parametric databases directly, at their convenience, and from within their own research institutions, and can build data access directly in to their research programs. The EMSC will provide support to researchers in accessing online data services by providing technical assistance and a “toolbox” of utility codes in different programming languages with which the researcher can build data service access in to their own research activities.