



## **The European Virtual Broadband Seismic Network (VEBSN) and ORFEUS**

Torild van Eck, Reinoud Sleeman, Gert-Jan Hazel van den, and Contributing Networks  
ORFEUS, c/o KNMI, Seismology Division, De Bilt, Netherlands (vaneck@knmi.nl)

Since 2002 ORFEUS has been coordinating the VEBSN concept, in which (near) real-time data is exchanged between Seismological observatory networks and the Orfeus Data Center (ODC). Seismological observatories in and around Europe have usually as primary objective the monitoring and analysis of current local and regional seismicity and seismic hazard. The data gathered by the observatories is, however, also valuable for fundamental research within global and European scale seismology; and therefore a primary data source for Academic seismological research.

Within the VEBSN concept, the ODC provides and improves Quality control procedures for the observatories and the observatories provide real-time data for long-term secure waveform data archives at the ODC accessible for seismological research.

In this concept the data remains ownership of the contributing network, while the ODC provides a secure back-up archive of waveform data. By facilitating a few data exchange mechanism with emphasis on SeedLink, the VEBSN strategy also enables observatories to exchange data between each other, thus enhancing the capabilities of the local or regional network and improving its performance for their monitoring and hazard objectives

More recently, the ODC has been enlarged into the European Distributed waveform Data Archive (EIDA) in which currently GFZ/GEOFON, INGV and RESIF participate in an effort to extend the accessible waveform archive beyond only the VEBSN data.

Currently the VEBSN consists of more then 450 3-component stations, each channel well defined with a full up-to-date SEED volume, providing all relevant metadata for a full reconstruction of the true ground motion. This encompasses only about 45% of the operational BB stations in the European-Mediterranean area and our goal is to enlarge this.