Acquiring, archiving, analyzing and exchanging seismic data in real time at the Seismological Research Center of the OGS in Italy

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The Centro di Ricerche Sismologiche (CRS, Seismological Research Center) of the Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (OGS, Italian National Institute for Oceanography and Experimental Geophysics) in Udine (Italy) after the strong earthquake (magnitude M=6.4) occurred in 1976 in the Italian Friuli-Venezia Giulia region, started to operate the North-east Italy (NI) seismic network: it currently consists of 11 very sensitive broad band and 23 more simple short period seismic stations, all telemetered to and acquired in real time at the OGS-CRS data center in Udine.

Real time data exchange agreements in place with other Italian, Slovenian, Austrian and Swiss seismological institutes lead to a total number of 89 seismic stations acquired in real time, which makes the OGS the reference institute for seismic monitoring of Northeastern Italy.

Since 2002 OGS-CRS is using the Antelope software suite as the main tool for collecting, analyzing, archiving and exchanging seismic data in the framework of the EU Interreg IIIA project "Trans-national seismological networks in the South-Eastern Alps". SeisComP is also used as a real time data exchange server tool. At OGS-CRS we then adapted existing programs and created new ones like: a customized web-accessible server to manually relocate earthquakes, a script for automatic moment tensor determination, scripts for web publishing of earthquake parametric data, waveforms, state of health parameters and shaking maps, noise characterization by means of automatic spectra analysis, plus scripts for email/SMS/fax alerting. A new OGS-CRS real time web site has also been recently designed and made operative in the framework of the DPC-INGV S3 Project.