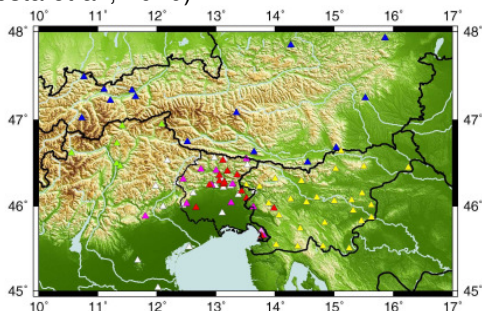


## Comparison of various very recent accelerometric instrumentations and data transmission systems, with a study of the best installation conditions for new accelerometric stations in NE Italy

In the framework of their intense collaboration and of new European projects, the “Alpe Adria” seismological institutions planned to supplement the transfrontier network with new accelerometric stations. The high professionalism and experience of the ZAMG researchers on seismic instrumentation and site preparation and the infrastructure available at the Conrad Observatory, permitted us to acquire the necessary information about the newest accelerometric instruments and to study optimal solutions regarding data transmission technologies and instrument installation.

The Geoscience Department (DiG) of the University of Trieste manages about 30 accelerometric stations and some broadband stations in the Friuli-Venezia-Giulia area (Costa et al., 2010).



**Figure 1:** The Southeastern Alps transfrontier network.

In the year 2001 the DiG, the FVG-DPC, the Zentralanstalt für Meteorologie und Geodynamik (ZAMG) in Austria, the Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (OGS) in Italy and the Agencija Republike Slovenije za Okolje (ARSO) in Slovenia signed an agreement for the real-time seismic data exchange in the South-eastern Alps region. Soon after the Italy-Austria Interreg IIIa project *Transnational Seismological Networks in the South-Eastern Alps* started (Figure 1).

In the framework of the European InterregIV Italy/Austria project: “HAREIA – Historical and Recent Earthquakes in Italy and Austria”, these seismological institutions supplement the network with new accelerometric stations.

During my stay at the Conrad Observatory the APSystems-GPRS-modem has been extensively tested thanks to the experience of the ZAMG researchers. The data transmission

between a Kinemetrics Etna accelerometer, normally used in the RAF, and the Antelope software (Boulder Real Time Technology, BRTT), utilized for real-time data transmission in the transfrontier network data centers, has been analyzed. This modem permits the direct connection of the accelerometer to Internet networks solving the problem of multiple modems actually necessary at the data center for a rapid, multiple data transfer.

The new Kinemetrics Basalt strong motion instrument has been tested at the Conrad Observatory and its new features and improvements have been compared with the characteristics of the instruments currently used in the RAF network.

During my visit of the Observatory the best solutions regarding instrument installation in the new HAREIA stations have been extensively discussed. The Austrian experts illustrated the characteristics of the new “green” box designed by ZAMG for a correct and reliable Basalt installation in the field. In fact, the box permits a rational and protected installation of the accelerometers, the necessary power supply and electric devices.

My visit of the Conrad Observatory has been very useful for future upgrades of the RAF-RAN network. The acquired expertise will be used in the project HAREIA and in all the future improvements of the seismological stations managed by the DiG.

### References:

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