# ISTP Network, Instituto Superior Tecnico, Lisbon (IST)

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**VIGIL Network for volcanic monitoring in the Cape Verde Islands**

This permanent network is composed of seven seismographic stations, two of which broadband, all with real-time telemetry to a central laboratory in the capital (Praia, Santiago Island). The broadband stations are part of the ISTP Network, and are equipped with Guralp Systems (GSL) CMG-40T 3-component sensors (30s-50Hz) and CMG-DM24 digitizers (24 bits). Telemetry is achieved with FreeWave spread-spectrum transceivers in the 900MHz band, with two repeaters per link due to the rugged topography. The 100 km long inter-island link is achieved with a radiated power of 1W. The auxiliary channels of the digitizer are used to acquire additional data for the monitoring routine, such as surface tilt or $CO_2$ concentration (jointly with Nicolas d'Oreye, from ECGS, Luxembourg). The operation of the VIGIL Network is a joint effort of IST and two local partners, the Laboratory for Engineering of Cape Verde and the Instituto for Meteorology and Geophysics of Cape Verde (Fonseca et al., in press).

**TAGUSNET Network for the seismotectonic study of the Lower Tagus Valley, SW Portugal**

More recently, the instrumentation effort at IST was directed towards the research of the seismotectonics of the Lower Tagus Valley near Lisbon. For this purpose, a permanent network of six broadband stations was deployed within 50 km from Lisbon, to allow accurate epicentral locations and focal mechanism inversions for small events. The deployment started in the summer of 2002, and one of the stations is still pending installation due to permission delays. Stations PMST and PACT have real-time telemetry to the central lab at IST, and are therefore part of the Network ISTP.

**Real-time access issues**

From the start of broad-band station deployments by IST in 1999, it was decided to make the waveform data available in real-time through ORFEUS. However, technical problems have prevented so far its satisfactory implementation. Guralp's acquisition software SCREAM! can broadcast the incoming data to a remote client (indeed data are currently transmitted in this way to ORFEUS in gcf format for testing purposes). However, a SEEDLINK plug-in for SCREAM! is still unavailable. Efforts in this direction were initiated in 2000 with Reinoud Sleeman of ORFEUS, and are currently in progress through the colaboration of ORFEUS and GSL (Murray McGowan). The LECV lab is already equipped with a linux PC dedicated to data communication, and as soon as the SEEDLINK plug-in is available real-time transmission of seismic data to ORFEUS can start.

The TAGUSNET data acquisition at IST is also based on SCREAM!, partly because in this way the solutions for the Cape Verde lab can be tested more conveniently in Lisbon before being exported. Until a linux version of SCREAM! is available, this forces the acquisition pc to run Windows, which in the TAGUSNET case is not regarded as a

desirable situation. Alternative solutions are also being tested, such as GCFTools, a package written for GSL by ISTI that runs on linux and allows the acquisition of remotely telemetred data. Also in the TAGUSNET central lab, a SEEDLINK plug-in for SCREAM! (and a linux version of the latter) are the current targets for the configuration of the acquisition lab.