



## **New geophysical instrumentation realized at SMRS laboratory (INGV, sezione di Napoli, Osservatorio Vesuviano)**

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The “Sviluppo e Manutenzione Rete Sismica” (Development and Maintenance Seismic Network) or SMRS laboratory of the Istituto Nazionale di Geofisica e Vulcanologia, sezione di Napoli, Osservatorio Vesuviano, is devoted to design and develop geophysical instrumentation and to perform the maintenance of the permanent seismic instruments installed in the volcanic areas of Mt. Vesuvius, Campi Flegrei, Ischia Island and Stromboli Island (Southern Italy).

In the last years the SMRS laboratory has developed a seismic array based on a modular design able to acquire up to 48 channels. From this first system the laboratory has carried out a seismic 3 channel, 24 bit datalogger oriented to continuously transmit data from the remote station to a recording centre.

A more sophisticated project for seismic data acquisition is the data logger named GILDA (for Geophysics Instrument for Low Power Data Acquisition) that can be flexibly applied for generic high rate geophysical data acquisition. The design of this data logger has been focused on the application in difficult logistics areas. The principal characteristics are low power supply requirement, low noise level and a high dynamic range.

At the SMRS laboratory also infrasound instrumentation has been developed dedicated to integrate the seismic monitoring system of the Neapolitan volcanoes. In fact,

the usage of infrasound instrumentation is increasing in the field of volcanoes monitoring to better sampling the wavefield generated by the seismogenic processes and to easily discriminate the external sources from the internal ones. Actually 3 infrasound microphones are being used on Italian active volcanoes and collect signals of seismic, events and other natural and artificial phenomena.