



## **Recent results regarding the development of an Infrasound Monitoring Array at Plostina-Vrancea**

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The paper depicts the structure of an infrasound monitoring array deployed near Plostina site, Romania - PLOR. Plostina is located at 45.8512 N latitude and 26.6499 E longitude and is one of the seismic stations under the administration of the *National Institute for Earth Physics (NIEP)*, Romania. PLOR is one of the three corners of the infrasound array.

Starting with October 2005, *NIEP and AZEL - Designing Group S.R.L.* made a research consortium who's project "Methods and models to detect natural and artificial events using infrasounds emissions monitoring systems" was financed by the Romanian Ministry of Research and Education, through the Programme "SECURITY". The Project was continued through the Programme "Space Research" in 2006 and is still running. The partners within the consortium, have studied the main sources, models and propagation mechanisms of infrasounds through atmosphere and earth.

The infrasounds monitoring stations developed by AZEL by following the International Monitoring System's (IMS) specifications regarding the requirements to be fulfilled by such a station, were installed in three new locations, especially built in this purpose. Using a high quality and yet not expensive differential pressure transducer and a self-designed, 24 bits, GPS synchronized embedded system, AZEL succeeded to accomplish all the requirements and to present an web-accessed infrasounds monitoring station which operates at frequencies between 0.002 and 15 Hz, 126dB dynamic range and a noise (at 1Hz) of -38dB, relative to 5mPa. The paper presents the actual

structure of the array, the auxiliary equipments and data communication protocol and format, some attempts in automatically recognizing of the coherent signals using advanced signal processing tools, as well as the next steps the partners will take toward a reliable and high quality infrasound monitoring array in Romania.