Güralp recommendations for the installation of high-performance, observatory-grade seismic stations

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In order to monitor nuclear tests on a global scale, it is one of the IMS's fundamental tasks to maintain a network of seismic stations with high data reliability. Installation is often the most critical aspect of a successful seismic station. A poorly designed layout leads to the introduction of noise that can hugely impact data quality, therefore rendering expensive, high performance equipment inadequate.

To facilitate quality installations and encourage better practices in the global seismic monitoring community, Güralp has developed a system that will allow for observatory-grade data.

The system is a classic seismic station composed of an ultra-low noise broadband seismometer: a Güralp 3T (120s or 360s), a high-performance digitizer-datalogger: the Güralp Affinity, a sensor cable and an atmospheric pressure enclosure.

The custom-built pressure enclosure enhances performance in vault installations, protecting the sensor from minuscule fluctuations in temperature and pressure, hence considerably reducing noise levels.

Güralp also provide best practice guidelines to assist researchers in designing their station, from site selection, installation and training to data retrieval and analysis.

Since 2001, Güralp have been managing the Eskdalemuir seismic array (EKA), the United Kingdom's auxiliary station for the International Monitoring System. These years of experience with CTBT related monitoring have taught us that good results do not come from the instrument alone. This is why Güralp endeavors to accompany operators through every step of the process with a team of specialist engineers, applying 35 years of expertise from project conception to data retrieval.