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Support and Maintenance of the International Monitoring System network

Jose Pereira, Sergelen Bazarragchaa, Owen Kilgour, Jacques Pretorius, Robert Werzi, Guillaume Beziat, Wacel Hamani, Walid Mohammad, and Natalie Brely

Austria (jose.pereira@ctbto.org)

The Monitoring Facilities Support Section of the Provisional Technical Secretariat (PTS) has as its main task to ensure optimal support and maintenance of an array of 321 monitoring stations and 16 radionuclide laboratories distributed worldwide. Raw seismic, infrasonic, hydroacoustic and radionuclide data from these facilities constitutes the basic product delivered by the International Monitoring System (IMS).

In the process of maintaining such a wide array of stations of different technologies, the Support Section contributes to ensuring station mission capability. Mission capable data availability according to the IMS requirements should be at least 98% annually (no more than 7 days down time per year per waveform stations – 14 continuous for radionuclide stations) for continuous data sending stations.

In this presentation, we will present our case regarding our intervention at stations to address equipment supportability and maintainability, as these are particularly large activities requiring the removal of a substantial part of the station equipment and installation of new equipment. The objective is always to plan these activities while minimizing downtime and continuing to meet all IMS requirements, including those of data availability mentioned above.

We postulate that these objectives are better achieved by planning and making use of preventive maintenance, as opposed to "run-to-failure" with associated corrective maintenance.

We use two recently upgraded Infrasound Stations (IS39 Palau and IS52 BIOT) as a case study and establish a comparison between these results and several other stations where corrective maintenance was performed, to demonstrate our hypothesis.