

Hydroacoustic component of the IMS: Status and applications with emphasis on hydroacoustic detections pertinent to the case of the Argentine submarine ARA San Juan

The International Monitoring System (IMS) of the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) comprises eleven hydroacoustic stations to monitor the world's oceans for nuclear explosions. Five of these are T-phase seismometer stations while six use water-column hydrophones cabled to shore providing real-time data to Vienna. The hydroacoustic network is the only of the four CTBT technologies that is fully certified. Nonetheless, significant effort is put into repairing and sustaining the IMS hydroacoustic network. This presentation has two parts: a) it provides an overview of the hydroacoustic component of the IMS and summarizes major projects in hydroacoustics and b) provides highlights of recent civil and scientific applications based on hydroacoustic data with emphasis on detections pertinent to the Argentine submarine ARA San Juan that went missing offshore the San Jorge Gulf, Argentina, on 15th November 2017. CTBTO analysed data acquired by the hydroacoustic stations HA10 in the Atlantic Ocean and HA04 in the southern Indian Ocean with the intent to contribute information relevant to the search for the missing submarine. The night between the 16th and 17th November 2018, the ARA San Juan was found on the seabed at 900 metres depth, very close to the location indicated by CTBTO.

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