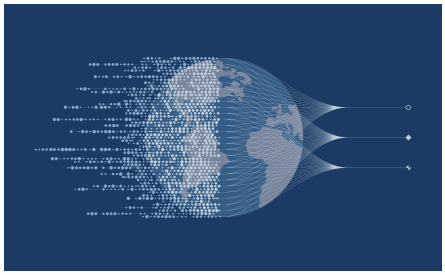

ID: **P4.4-717** Type: **E-poster**

Modelling IMS seismic and infrasound networks sustainment needs: data-driven approach for IMS sustainment Planning

Thursday 11 September 2025 09:00 (1 hour)

The need for a clear and transparent approach for sustaining the International Monitoring System (IMS) network has grown since the early days of the Provisional Technical Secretariat (PTS), when activities primarily focused on the installation and certification of IMS facilities. Today, as much of the network is ageing, efforts have shifted towards modelling and anticipating future needs for the mid to long term, particularly in terms of financial resources. To address this challenge, a data-driven methodology was developed by the PTS for the seismic and infrasound technologies, using available data and expert insights to model IMS stations composed of subsystems and derive technical sustainment needs through risk analysis. Preliminary results from this approach have demonstrated its effectiveness, enabling better identification of future technical requirements through an informal paper presented at Working Group B. This approach, along with its assumptions, findings, and potential integration into PTS decision making, will be presented. Additionally, we have identified potential enhancements to the data-driven methodology, such as investments in enhanced state of health monitoring, quality assurance, and failure analysis, which could further refine the approach and improve its accuracy in informing decision makers and engineers about future needs for the IMS facilities.

E-mail

benoit.doury@ctbto.org

In-person or online preference

Primary authors: Mr KRAMER, Alfred (CTBTO Preparatory Commission); Mr DOURY, Benoit (CTBTO Preparatory Commission); Ms KETATA, Ichrak (CTBTO Preparatory Commission)

Presenter: Mr DOURY, Benoit (CTBTO Preparatory Commission)

Session Classification: P4.4 International Monitoring System Sustainment into the future

Track Classification: Theme 4. Sustainment of Networks, Performance Evaluation, and Optimization: T4.4 International Monitoring System Sustainment into the future