

### **3.3-P10. Expert Technical Analysis procedures at the International Data Center, CTBTO**

Expert Technical Analysis (ETA) at the International Data Center (IDC) is a complex and not well defined area of the information analysis. It involves different and not always directly interconnected instances, such as data, products, methods, software, etc. Setting up the ETA at the IDC should initiate the work related to these instances in parallel, to have it working as a tested and approved service for State Parties before entering the Treaty into force. In this presentation we focus on methods that may complement the tools already set up at the IDC and can be used for the ETA, taking into account recent advantages in data processing, mostly related to the IDC waveforms technologies. The methods include: seismic event location based on master event (cross-correlation, CC) approach, estimating the depth of presumably shallow events, and event waveform decomposition. The CC branch includes a dimensionality reduction which would improve not only the monitoring performance but also the detection of explosions lacking any SHI signatures up to now. The shallow event depth estimation involves both synthetic simulation and cepstral estimation. The event decomposition will likely help in resolving the problem of revealing clandestine nuclear tests.

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