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Introduction of the Results of a New Automatic Association System for Waveform Data Analysis

The Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) has been developing and testing NET-VISA (Arora et al., 2013), a Bayesian automatic event detection and localization program, and evaluating its performance in a realistic operational mode. In our preliminary testing at the CTBTO, NET-VISA shows better performance than its currently operating automatic localization program. However, given CTBTO's role and its international context, a new technology should be introduced cautiously when it replaces a key piece of the automatic processing. We integrated the results of NET-VISA into the Analyst Review Station, extensively used by the analysts so that they can check the accuracy and robustness of the Bayesian approach. We expect the work load of the analysts to be reduced because of the better performance of NET-VISA in finding missed events and getting a more complete set of stations than the current system which has been operating for nearly twenty years. Preliminary results of the introduction in operations are presented. At the conference, the effects in operational environment will be presented.

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