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T3.3-P29. Reducing Analyst Burden Using Real Time Event Cross Correlation

The United States National Data Center (US NDC) monitors international compliance to nuclear test ban treaties through the real time acquisition, processing, and evaluation of seismic, hydroacoustic, and infrasonic data. The US NDC geophysical data processing system uses this data to automatically build seismic events which are reviewed and refined by a collection of human analysts. Manual event review is a time consuming process that is largely focused on correcting mistakes made by the automated system (e.g., onset time refinement, incorrect phase names, adding missed detections, deleting false detections). All automatic and human reviewed event solutions are stored in a data warehouse that currently contains over 15 years of alphanumeric information and waveform data. In an effort to reduce the time burden associated with manual event refinement, the US NDC processing architecture was modified to employ the data warehouse in real time to automatically recognize similar events built in the past. Similar historic events are identified through real time cross correlation of selected seismographs from automatically formed events against those stored in the data warehouse. Event similarity information and arrival pattern templates for relevant historic solutions are passed to the analyst to assist their evaluation of automatically formed events.

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