

Assessment of the Quality of the Interactive Analysis and Reviewed Event Bulletin During the September 2016 Experiment

In this work we assess the quality of the regular REB by comparing it with a baseline bulletin REB produced during the 2016 experiment by an independent team of waveform analysts for three reference days. The assessment is done using an external software package based on generic comparison of focal parameters and a set of IDC built-in scripts designed for internal comparison of PTS bulletins. Input data was filtered according to the detectability of the IMS network and very stringent target requirements were established for evaluation purposes: $\geq 98\%$ of matching events, $\leq 4\%$ of false events and $\geq 96\%$ of matching events with overlapping error ellipses. Results indicate that, over a sample of 357 events in the baseline bulletin, 188 are above the detectability of the network (mag=3.6). 92.6% (176/188) of the events match in both REB and baseline bulletins and the percentage of matching events whose ellipses overlap is 92.9%; both values close but not meeting the target requirements. Only 1.1% (2/188) are false events thus meeting in excess the target requirement. Considering the worldwide coverage of the IMS network, additional investigation including zonation is needed to ascertain the reasons of the discrepancies between the REB and the reference bulletin.

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