

# NDC-NG Capability for Nuclear Explosion Monitoring

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The Nigerian NDC has struggled with a lack of qualified personnel and inadequate training, especially in data analysis. However, better utilization of IMS data and to support complementary nuclear explosion monitoring has resulted from increased capacity building. This study aims to analyze SHI data to ascertain the events recorded between 2000 and 2024. The seismic, infrasound, and hydroacoustic waveform data were accessed through the Global Communication Infrastructure and the Secured Web portal. For the seismic data, the P and S phases were carefully picked and other associated hybrid phases like the Pn, Pg Lg Sg, etc., were identified using the Geotool software. The magnitudes, locations, azimuth and back azimuth, and depths of the selected events were determined. For hydroacoustic data, the data was processed using TDK PMCC and Geotool software to determine both T or H phases, and the respective sources of the signals were determined accordingly. The azimuths from the infrasound data were also determined to establish the sources of signals. The results are presented in this study. This research has demonstrated the improved capacity of NDC-NG towards meeting one of its significant roles: the capability for complementary monitoring of nuclear explosions using the IMS waveform data.

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