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## **Puerto La Cruz Seismic Station (PCRV) 2023-2024: Boosting Global Seismic Monitoring and Nuclear Test Verification**

The modernization of the Puerto La Cruz seismic station (PCRV), carried out in 2023 thanks to the support of the European Union Fund and the Provisional Technical Secretariat, has significantly increased the availability of high quality seismic data at the International Data Centre and the National Data Centre. This improvement has reinforced global seismic monitoring networks, enabling more accurate detection in the Caribbean and South America of seismic and non-tectonic events such as nuclear tests. The high quality data transmitted from PCRV contributes to the verification of the Comprehensive Nuclear-Test-Ban Treaty by enabling more robust detection of seismic signals associated with underground nuclear explosions and other events. Additionally, this data is fundamental for scientific research, seismic risk assessment, and the development of hazard maps. The station increased its operational availability by working 24 hours a day, all year, positioning PCRV as a reference in regional and global seismic monitoring. This work demonstrates the highly valuable comparative results obtained before and after the hybrid system upgrade, which are of great interest to international monitoring engineering systems

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