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effectiveness of Smart Seismic Nodes for OSI

The Comprehensive Nuclear-Test-Ban Treaty (CTBT) prohibits nuclear explosions for any purpose, ensuring global security and environmental protection. To verify compliance with the CTBT, onsite inspections (OSIs) are conducted in suspected areas of violations. Advanced technologies like wireless smart seismic nodes have emerged that can be invaluable tools for enhancing the effectiveness of OSIs, particularly in monitoring aftershocks and assessing seismic resonance phenomena. Discussing the ability of the smart seismic nodes to efficiently monitor aftershocks and seismic resonance which can provides invaluable support for the CTBT's verification regime. Emphasizing the advantages of rapid deployment, scalability, resilience and cost-effectiveness and discussing critical points like geophone response and real-time data transmission. Due to its ease of deployment a daily rotation of some nodes in the field would ensure timely access to the seismic information. Some examples are presented using smart solo sensors By enabling rapid, accurate, and flexible data collection, these devices enhance the effectiveness of onsite inspections, contributing to global efforts to detect nuclear testing.

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