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Insights into Future Technologies for Nuclear Test Verification: Technology Foresight at the CTBTO

As part of its mandate, the CTBTO's nuclear explosion monitoring programme aims to maintain its sustainability, effectiveness and long-term relevance to the verification regime. As such, the Technology Foresight programme of activities identifies technologies that may serve said purpose within the next 20 years.

We have involved the wider seismology, infrasound, hydroacoustics, radionuclide technology, remote sensing and geophysical communities and have assembled an extensive database, which incorporates technologies with future relevance to the spectrum of CTBTO activities. To maximise strategic and planning usefulness, we have devised a "taxonomy" based on ten categories, against which each technology is assessed through a peer-review mechanism.

The resulting database is coupled to Pivot, a novel information management software tool offering powerful visualisation of the taxonomy's parameters for each technology. Pivot offers advantages over conventional spreadsheet-interfaced database tools: based on shared categories in the taxonomy, users can quickly and intuitively discover linkages, commonalities and outlooks about prospective technologies.

We will illustrate the range of future technologies and will demonstrate how Pivot assists in strategic planning and development, and to identify possible gaps on the technology development horizon. We show how the Pivot taxonomy offers real and emerging insights when assessing large amounts of disparate technologies.

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