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The CTBT's International Monitoring System and On-Site Inspection Capabilities: a Status Report

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At its 20th anniversary the Comprehensive Nuclear-Test-Ban Treaty has now gathered 183 State Signatories, of which 166 have ratified. But 8 States remain to ratify before we reach entry into force. In the meantime the CTBT verification regime has accumulated two decades worth of experience, and has achieved proven results. The regime includes a global system for monitoring the earth, the oceans and the atmosphere and an on-site inspection (OSI) capability. It uses seismic, hydroacoustic, infrasound and radionuclide technologies to do so. More than 90% of the 337 facilities of the International Monitoring System (IMS) have been installed and are sending data to the International Data Centre (IDC) in Vienna, Austria for processing. These IMS data along with IDC processed and reviewed products are available to all States that have signed the Treaty. The monitoring system has been put to test and demonstrated its effectiveness by detecting, locating and reporting on the DPRK announced nuclear tests in 2006, 2009, 2013 and twice in 2016. In addition to detecting radioxenon consistent with the nuclear tests in 2006 and 2013 the IMS radionuclide network also added value in the response to the tragic events in Fukushima in 2011. We continue to find new civil and scientific applications of the IMS that are made available to the international community to deal with major societal issues such as sustainable development, disaster risk reduction and climate change. OSI capabilities continue to be developed and tested. The Integrated Field Exercise in Jordan in 2014 demonstrated that they have reached a high level of operational readiness. The CTBT has been a catalyst for the development of new scientific fields in particular in the noble gas monitoring technology. CTBTO seeks to continuously improve its technologies and methods through interaction with the scientific community.