



**CTBTO**  
PREPARATORY COMMISSION

COMPREHENSIVE  
NUCLEAR-TEST-BAN  
TREATY ORGANIZATION



# CTBT: ENDING NUCLEAR EXPLOSIONS

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Nuclear-Test-Ban  
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## WHAT IS THE CTBT?

The Comprehensive Nuclear-Test-Ban Treaty (CTBT) bans nuclear explosions by everyone, everywhere.

## A GLOBAL NORM AGAINST NUCLEAR TESTING

The CTBT has created a firm and virtually unchallenged global norm against nuclear testing. Tests have been conducted on only 10 occasions since it opened for signature in 1996, compared with more than 2,000 over the five previous decades. In this century, only one country – North Korea – has breached the norm and tested nuclear weapons.

## NEAR-UNIVERSAL SUPPORT

The CTBT has near-universal support, signed by 186 countries to date and ratified by 177. However, 44 specific nuclear technology holder countries must sign and ratify before the CTBT can enter into force as international law. Ratification by eight of these so-called Annex 2 States is still required: China, Egypt, India, Iran, Israel, North Korea, Pakistan, and the United States of America. Of these, India, North Korea and Pakistan are yet to sign the Treaty.

## THE MISSION OF THE CTBTO

Known formally as the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization, the CTBTO exists to prepare for the Treaty's entry into force. It has two main tasks:

- **promoting universal support of the Treaty**
- **building up the CTBT verification regime to ensure its operationalisation at entry into force of the Treaty**

Headquartered in Vienna, Austria, it has nearly 300 staff from more than 90 countries and is led by Executive Secretary Robert Floyd from Australia.

The annual budget is approximately \$130,000,000 or €120,000,000.



THE TREATY'S COMPREHENSIVE VERIFICATION REGIME HAS THE FOLLOWING COMPONENTS:

INTERNATIONAL MONITORING SYSTEM (IMS)

The IMS is a unique global network of facilities using four state-of-the-art technologies: seismic to monitor shockwaves through the ground, hydroacoustic to detect sound waves in the oceans, infrasound to listen for ultra-low frequency sound waves inaudible to the human ear, and radionuclide to monitor the atmosphere for radioactive particles and gases from a nuclear explosion. Over 90 percent of the Treaty's 337 IMS facilities are already up and running and the system has proved its effectiveness, detecting all of North Korea's declared nuclear tests.

INTERNATIONAL DATA CENTRE (IDC)

The IDC at the CTBTO's headquarters in Vienna receives data from the IMS. The data are processed and made available to the CTBT's States Signatories in both raw and analysed form. Within just hours of a suspected nuclear explosion, all States Signatories receive information about the location, magnitude, time, and depth of the event, followed by further analysis and any later detection of radionuclides that may indicate the nuclear nature of the event.

ON-SITE INSPECTION (OSI)

OSI is a crucial component of the Treaty verification regime. Once the CTBT enters into force, States Parties will be able to request an inspection to gather further evidence on the ground if the IMS detects a possible nuclear explosion. As well as establishing whether a nuclear explosion has been carried out, facts might also be gathered to identify who was responsible for a Treaty violation. It is the ultimate verification measure.

ADDITIONAL BENEFITS: FROM TSUNAMI WARNINGS TO CLIMATE RESEARCH

In addition to allowing the detection of nuclear explosions, IMS data yield a range of wider benefits and scientific knowledge. National tsunami warning centres in States Signatories can receive data in near-real time to support faster, more accurate public alerts. IMS stations can

contribute to the international response to a nuclear emergency by tracking the movement of harmful radionuclides. Researchers can access selected data to better understand the natural world, from whale behaviour to climate change or the timing of monsoon rains.

A KEY PART OF THE GLOBAL NUCLEAR ARMS CONTROL FRAMEWORK

The CTBT is an essential component of the international nuclear arms control and disarmament framework.

- Nuclear testing is a key step in the development of nuclear weapons. By ending this, the CTBT curbs all nuclear arms proliferation, be it the development of nuclear weapons by countries that do not currently have them, upgrades to current nuclear arsenals or the creation of new, more advanced generations of nuclear weapons.
- The CTBT is fundamental to nuclear disarmament because it establishes trust that any clandestine nuclear test will be detected.
- The CTBT prevents the serious health and environmental impacts associated with nuclear tests.