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CTBT: International Monitoring System

Fact Sheet

BUREAU OF ARMS CONTROL, VERIFICATION AND COMPLIANCE

March 29, 2011

Key Point: The International Monitoring System (IMS) is a worldwide network of observational technology that will help to verify compliance with and detect and confirm violations of the Comprehensive Nuclear Test-Ban Treaty (CTBT).

When complete, the IMS will consist of 337 monitoring facilities. It will be complemented by an intrusive on-site inspection regime applicable once the Treaty has entered into force. The CTBTO's experts **are confident** that their system can aid in the detection and identification of nuclear explosions anywhere on the planet.

In 1999, there were no certified IMS stations or facilities in place. Today the IMS is more than 80 percent complete. Currently, 254 of the IMS monitoring stations and 10 of the 16 radionuclide laboratories have been certified. These facilities are located all over the world. (For an interactive map of these facilities, please click [here](#).) In addition to those facilities already certified, 17 facilities are undergoing testing and 27 are under construction. Of the 40 planned for operation by entry into force of the Treaty, 27 noble gas systems have been installed, three of which have been certified.

The IMS uses four technologies to support the CTBT.

Seismological: There will be 50 primary and 120 auxiliary seismic stations to monitor shockwaves in the earth that could be caused by a nuclear test.

Radionuclide: Eighty stations worldwide will measure the atmosphere for radioactive particles. An initial subset of 40 will be able at entry into force of the treaty to detect noble gases; whether or not to populate the remaining 40 stations with noble gas systems will be decided by the Conference of States Parties. Radionuclide evidence can confirm that a nuclear explosion has occurred, if there is a leak. However, lack of radionuclide detection does not mean a nuclear explosion did not take place.

Hydroacoustic: There will be 11 hydroacoustic stations listening for sound waves traveling through the oceans that could be caused by a nuclear test explosion.

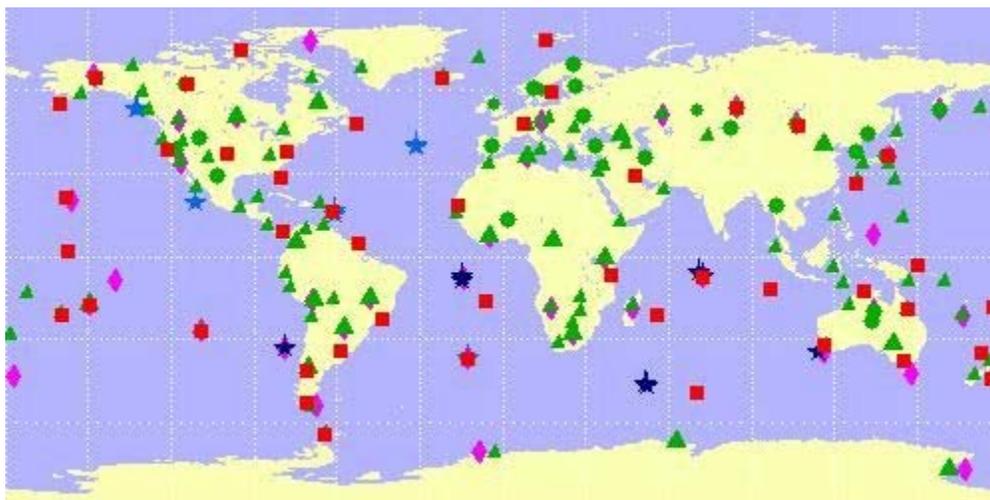
Infrasound: When complete, 60 stations on the earth's surface will be able to detect ultra-low frequency sound waves caused by large explosions; these sound waves are inaudible to the human ear.

The IMS stations provide generally uniform coverage across the globe. The system is designed to be non-discriminatory and does not single out any country or region for enhanced monitoring.

Current Status of the CTBT International Monitoring System (IMS)

"Planned" stations are those listed in Annex 1 to the Protocol on which the construction contract is under negotiation or has not yet begun. Stations "Under Construction" are those on which installation work has started. Once an IMS station has been installed, it undergoes a period of "testing" to demonstrate that the station meets technical specifications and can supply data reliably to the International Data Centre (IDC). A station that successfully completes this test stage is then "certified."

For an interactive map showing the status of the IMS, click [here](#).



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