



1.0 Introduction

- The Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO Prep-Com) is an international organization based in Vienna, Austria
- CTBTO is tasked with building up the verification regime of the CTBT
- CBTO has established a global network of International Monitoring System (IMS) stations to monitor compliance with the Treaty
- The IMS comprises four technologies namely seismic, hydro-acoustic, infrasound and radio-nuclide
- These technologies utilize the most modern techniques available to detect any nuclear explosion conducted on Earth

- The global verification regime of the CTBT provides opportunities for a wide range of civil and scientific applications
- Many elements of the current monitoring efforts by CTBTO can be used in other contexts including civil and scientific applications
- Spin-off technologies are by-products from the CTBT's IMS stations
- The CTBTO organises capacity building activities and conferences for its member states to assist them assume their rights and responsibilities under CTBT
- The CTBTO therefore plays an important role of promoting civil and scientific applications of data spin-off technologies from its IMS stations.

- Data and by-products from IMS stations have potential applications for civil and scientific purposes
- Climate science, monitoring of tsunamis, recording of earthquakes and tracking marine mammals are areas where spin-off technologies are being applied
- Capacity building activities e.g. training courses seminars and conferences are being organized by the CTBTO
- These events play an important role in promoting civil and scientific applications of data and techniques used for nuclear test ban verification

2.0 Background Information

The verification regime consists of the following elements:

- International Monitoring System (IMS)
- International Data Centre (IDC)
- Global Communications Infrastructure (GCI)
- On-Site Inspection (OSI)
- Consultation and clarification and confidence-building measures

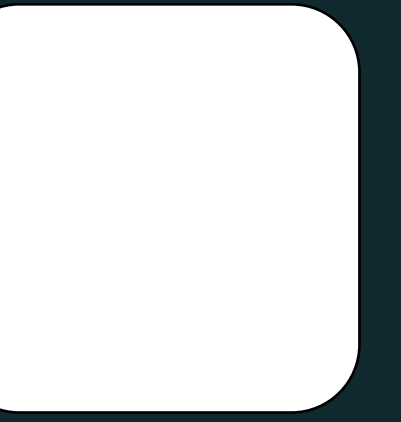
3.0 IMS Technologies

These comprise the following:

- Seismic monitoring technology
- Hydro-acoustic monitoring technology
- Infrasound monitoring technology
- Radionuclide monitoring technology

4.0 Data and Spin-off Technologies from IMS Stations

- Many elements of the current IMS technology can be used for civil and scientific purposes
- Spin-off technologies are by-products from the CTBT's IMS stations
- Data and spin-offs technologies of IMS stations can to be used for civil and scientific applications
- These technologies can contribute significantly towards sustainable human development

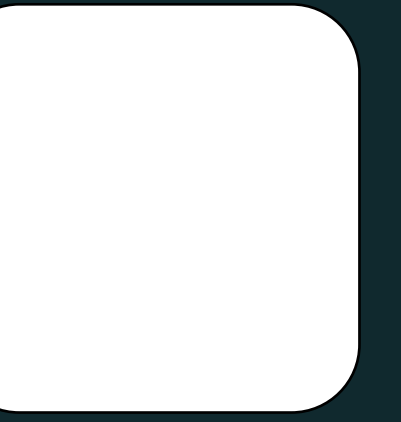


4.1 Detection of Natural Events and Disaster Warning

- Early warning of impending tsunamis and storms
- Detection and monitoring of earthquakes
- Detection of incoming meteorites and Explosions
- Detection of volcanic eruptions
- Aviation and shipping safety
- Detection nuclear accidents and radiological emergencies

4.2 Detection of Man-Made Events

- Assisting in air crash investigations
- Aviation safety
- Tracking of pollutants
- Detection of nuclear accidents



4.3 Research in Environment and Climate Science

- Weather Forecasting
- Monitoring seasonal and yearly radionuclide variations
- Water temperature measurements
- Understanding of the internal structure of the earth
- Tracking migration of marine mammals
- Tracking Icebergs
- Validate and calibrate weather prediction and climate models

5.0 Promotion of Civil and Scientific Applications of IMS Data and Techniques

The following institutions can play an important role in promoting civil and scientific applications of data and techniques used for nuclear test ban verification:

- The CTBTO
- National Governments
- National Data Centres (NDCs)
- Local academic, international research institutions and organisations

6.0 Methods of Promoting of Civil and Scientific Applications

These methods include the following among others:

- Lectures
- Training courses, workshops, seminars and conferences
- Print and electronic media
- Public lectures and pronouncements
- Social media
- Research activities

7.0 Recommendations

Wide promotion of data and techniques from IMS stations by the following institutions among others is being recommended:

- The CTBTO
- National governments
- National data centres
- Local academic and research institutions
- International research institutions and organisations