CTBTO PREPARATORY COMMISSION | preparatory commission for the comprehensive nuclear-test-ban treaty organization

CTBT/OSI regime and GNSS application

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Outline

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CTBT/OSI regime and GNSS application

- Overview of Comprehensive Nuclear Test Ban Treaty (CTBT)
- On-Site Inspection (OSI) regime of the CTBT and its fundamental technologies
- Potential application of GNSS to the OSI

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Overview of Comprehensive Nuclear Test Ban Treaty (CTBT)

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- 2054 nuclear tests carried out
- Prohibition of all nuclear explosions worldwide
- 24/09/96: Treaty opened for signature
- 183 States signed, 157 States ratified, 36 of 44 Annex II States ratified
- Treaty has not entered into force, however "de facto" norm against nuclear tests established

Overview of Comprehensive Nuclear Test Ban Treaty (CTBT)

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- Headquarters in Vienna
- Preparatory Commission set up in 1996
- Around 250 staff from 71 States Signatories
- Executive Secretary: Tibor Tóth/HUN
- Homepage: www.ctbto.org

Overview of Comprehensive Nuclear Test Ban Treaty (CTBT)

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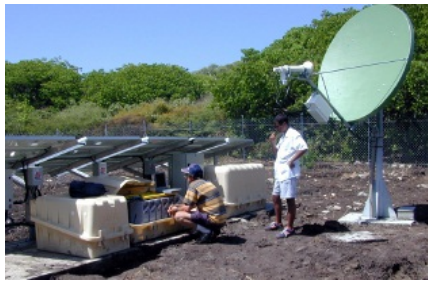
CTBT Verification Regime

International Monitoring System

321 stations: seismic, hydro-acoustic, infrasound, radionuclide

IDC&GCI



Consultation and Clarification

Right to clarify matters indicating possible non-compliance

On-Site Inspection

Conduct of on-site verification activities

Confidence Building Measures

Large chemical Explosions: prevent misinterpretation and calibrate seismic IMS component

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On-Site Inspection (OSI) regime of the CTBT and its fundamental technologies

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CTBT, Article IV, Paragraph 35

"The sole purpose of an on-site inspection shall be ***to clarify whether a nuclear weapon test explosion or any other nuclear explosion has been carried out*** *in violation of Article I and, to the extent possible,* ***to gather any facts which might assist in identifying any possible violator."***

On-Site Inspection (OSI) regime of the CTBT and its fundamental technologies

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On-Site Inspection Phases

Request for OSI

Launch | **Pre-inspection** | **Inspection** | **Post-Inspection**

On-Site Inspection (OSI) regime of the CTBT and its fundamental technologies

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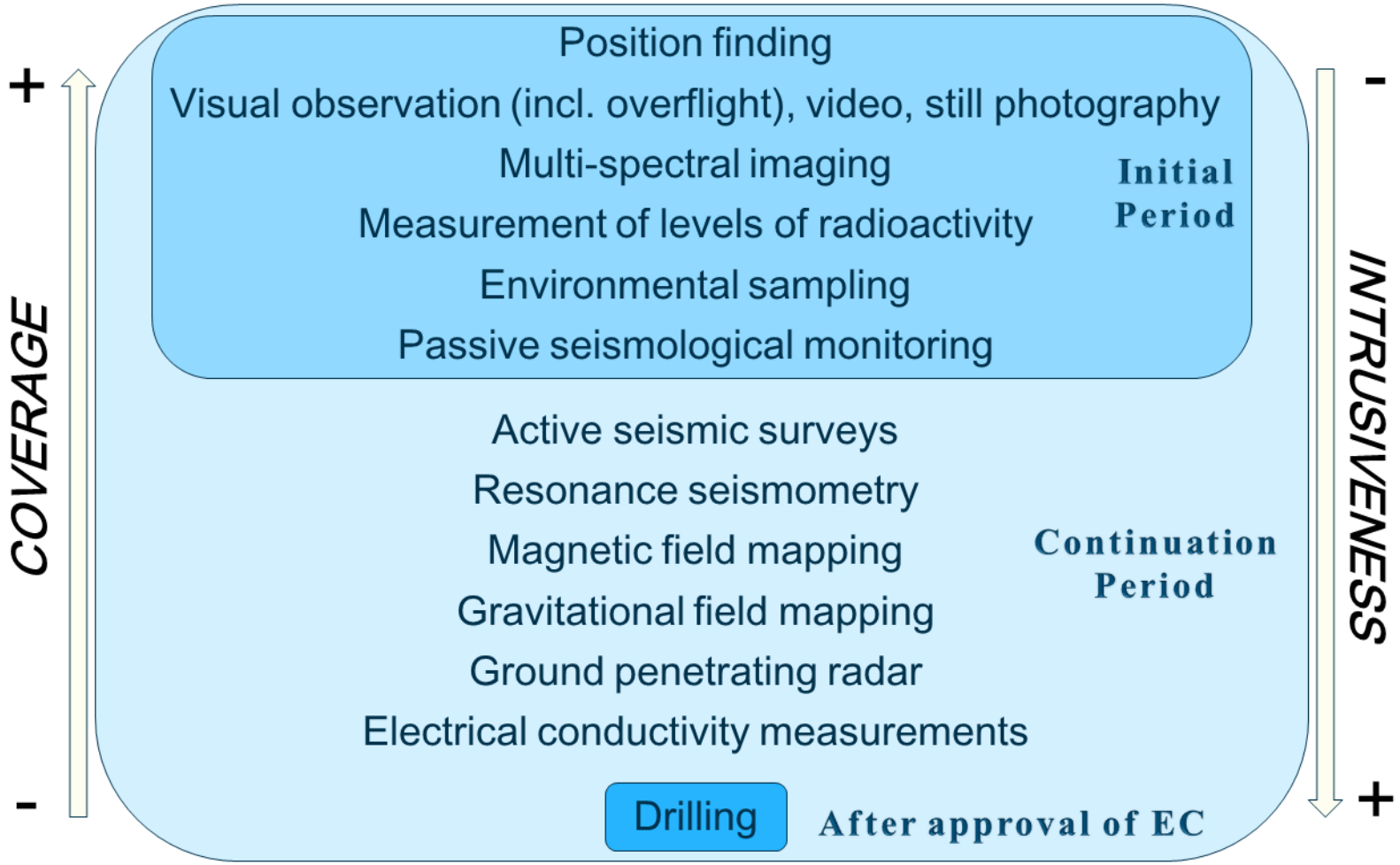

GNSS has its potential application to almost every OSI technology

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Potential application of GNSS to the OSI

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Orientation/Navigation in the Inspection Area

(Inspection Area is up to 1000 Km2)

Potential application of GNSS to the OSI

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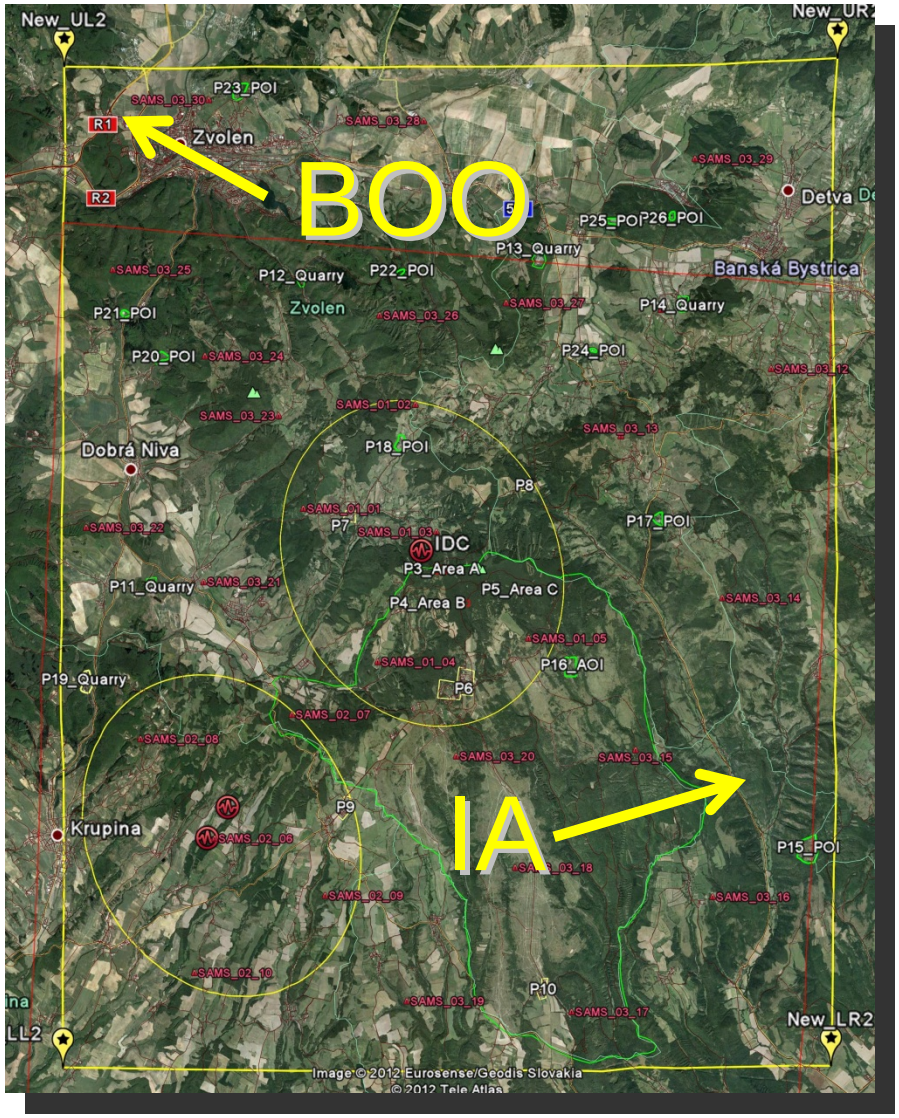
Confirmation of location and boundaries



Potential application of GNSS to the OSI

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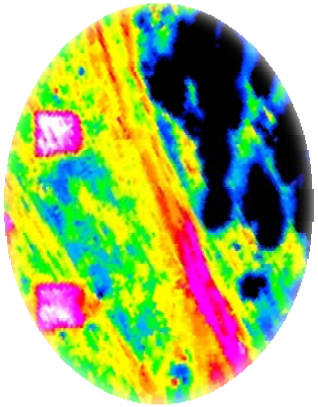
Geo-referenced data support to OSI technologies

Multi-spectrum imaging



OSI GIS

Seismic After-shock Monitoring

Potential application of GNSS to the OSI

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Geo-referenced data support to OSI activities (continued)

Radioactivity measurement

Geophysics measurement

Visual Observation

Over-flight

Environmental Sampling

Potential application of GNSS to the OSI

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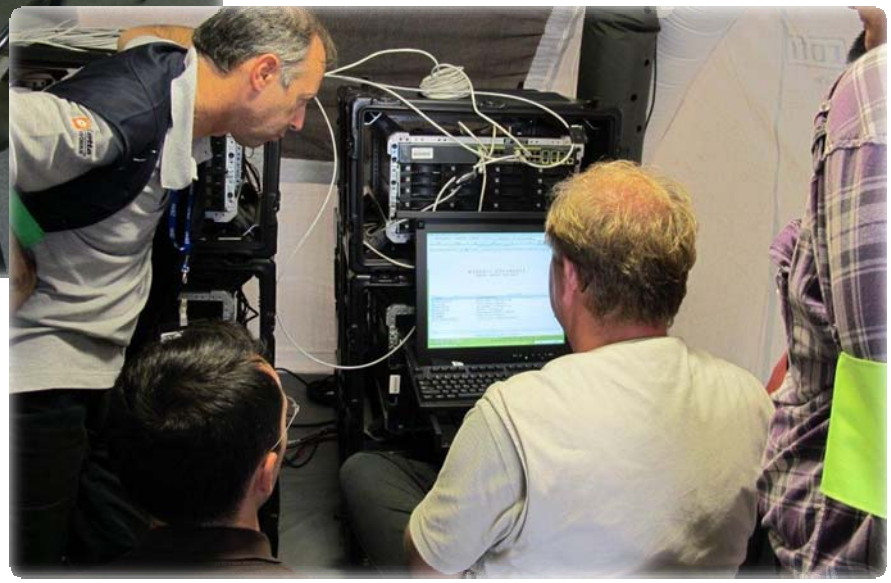
GNSS timing support to OSI equipment



OSI Integrated Information Management System

Brief Summary

- Positioning, navigation and timing have their wide application in CTBT/OSI.
- GNSS is the primary position finding technology now for CTBT/OSI. However, no specific system is primary, CTBT/OSI will utilize what is available to cover the Inspection Areas anywhere in the world upon approval.

Brief Summary
(Continued)

- ICG can be a good opportunity for the CTBT/OSI to learn the experience of the application of GNSS.

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