

# Build up Exercises to validate OSI capability development

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**T4.4-P3**



## INTRODUCTION

The application of various techniques including data analyses and integration is at the heart of an On-Site Inspection (OSI). Field exercises, conducted on a regular basis, are a true testing ground for the application of OSI technologies close to real-life conditions.

In 2016, the Preparatory Commission approved an ambitious OSI Exercise Plan 2016-2020 which includes the conduct of three Build-Up Exercises (BUEs) in 2019/20. These should serve as a platform to validate key deliverables of the OSI Action Plan 2016-2019 as well as the programme of the Third Training Cycle (3TC) for surrogate inspectors.

BUE-L	November 2019 ~one week	OSI Launch Phase	CTBT HQ and TEST Centre, Austria
BUE-IN	June 2020 ~two weeks	OSI Pre-Inspection Phase and OSI Inspection Phase (Initial Period)	TEST Centre, Austria and Slovakia
BUE-C	September 2020 ~two weeks	OSI Inspection Phase (Continuation Period) and OSI Post-Inspection Phase	Slovakia

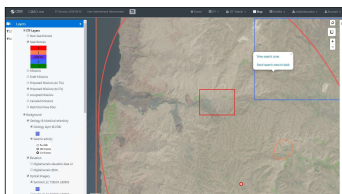


## BUILDING UP CAPABILITIES THROUGH THE OSI ACTION PLAN

Following the conclusion of the Integrated Field Exercise in 2014 (IFE14), a detailed review and evaluation process identified key follow-up activities to further develop the OSI verification element. The result was the elaboration by the Provisional Technical Secretariat (PTS) of a detailed OSI Action Plan for 2016-2019 to serve as a tool for furthering OSI capabilities towards the establishment of a balanced, coherent and robust verification regime at entry into force of the CTBT. It consists of 43 projects covering Policy Development, Methodology and Documentation; Operations and Operations Support; Techniques and Equipment Development; Inspectorate Development and Infrastructure Development.

One of the principal objectives of the forthcoming OSI Build-Up Exercises shall be to validate action plan deliverables and their contribution towards improving OSI operational capability. Notable new or significantly augmented OSI elements which the BUEs shall permit the testing or validation of include:

- OSI related infrastructure including the Equipment Storage and Maintenance Facility (ESMF) at the TeST Centre in Seibersdorf, Austria, and the redeveloped prototype Operations Support Centre (OSC) integrated within the CTBT Operations Centre at the Vienna International Centre (VIC);
- New and updated OSI Physical, Information Security and Health and Safety policies and a PTS Policy on Headquarters support of an OSI;
- Geospatial Information Management for OSI (GIMO) system;
- Near real time transmission of data from the field to the base of operations (BOO) (telemetry);
- Inspectorate database and the integrated call-up mechanism;
- Resonance seismometry;
- Updated Radionuclide and noble gas field laboratories.



## EXERCISE OBJECTIVES

In line with the strategic direction for OSI, the aim of the BUEs in 2019-2020 is to support the further development of operational capabilities in order to prepare the CTBTO to conduct effective OSIs upon entry-into-force of the Treaty.

The objectives of the BUEs are to:

- Test progress made as a result of the implementation of the OSI Action Plan 2016-2020 and its contribution to OSI operational capability;
- Validate key deliverables of the OSI Action Plan projects;
- Validate the programme of the Third Training Cycle (3TC) for surrogate inspectors;
- Test revisions and areas in the draft OSI Operational Manual that have not yet been exercised;
- Ensure that areas of existing operational capability have been maintained;
- Identify areas for further improvement.

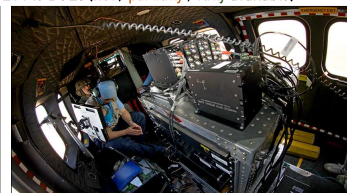


## OSI EQUIPMENT AND TECHNIQUES

Paragraph 69 of Part II of the Protocol to the Treaty lists those activities and techniques an Inspection Team may use during an On-Site Inspection. The OSI Division is working towards – for the first time – applying elements of all 17 Treaty-permitted activities and techniques as detailed below.

Position finding from the air and at the surface	Video from the air, at and below the surface
Visual observation from the air, at and below the surface	Multispectral imaging including infrared measurements, from the air, at and below the surface
Still photography from the air, at and below the surface	Measurement of radio-xenon
Measurements of levels of radioactivity above, at and below the surface	Measurement of argon-37
Environmental sampling and analysis of solids, liquids and gases	Passive seismology
Gravitational field mapping	Resonance seismometry
Ground penetrating radar	Active seismic surveys
Electrical conductivity measurements	Magnetic field mapping
Drilling	

Gradient indicates availability of technique from IFE14 to BUEs (not / partially / fully available)



## SCENARIO DEVELOPMENT

The upcoming BUEs shall use one contiguous, credible and coherent scenario in all three exercises. An external Scenario Task Force (STF) with experienced State Signatory experts has been charged with the development of a technically realistic, rationally coherent, temporally logical, and intellectually motivating scenario. It must neither be too complex nor artificial, yet shall be designed to adequately facilitate the effective and realistic testing of IT activities – and in particular those areas in which there has been substantial development through the OSI Action Plan implementation.

## SLOVAKIA: THE HOST COUNTRY



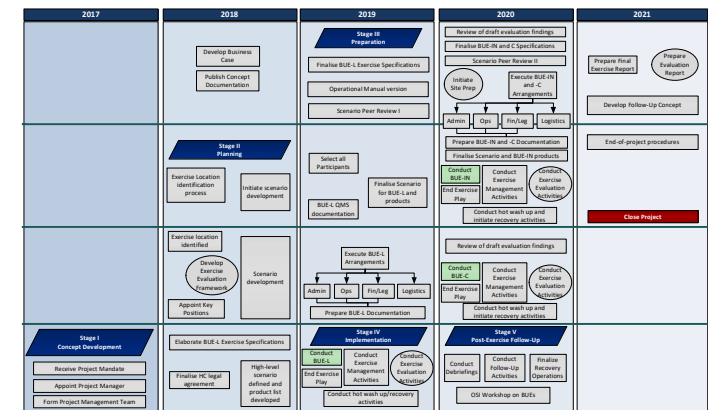
The Slovak Republic is a strong supporter of the Preparatory Commission and its activities since ratifying the CTBT on 3 March 1998 and has generously hosted multiple events, such as a Field Test of passive Seismological Aftershock Monitoring equipment in 2001 and more recently, the Introductory Course of the 3TC for Surrogate Inspectors in 2016.

The government agency dealing with the CTBT issues and Preparatory Commission is the Nuclear Regulatory Authority of the Slovak Republic. Together with other cooperating entities including the Ministry of Foreign and European Affairs and the Ministry of Defence (MOD), an offer to host BUE-IN and BUE-C was submitted and accepted by the Commission in 2018. Various preparatory activities will be conducted including host-country training, a communications field test and the conduct of various background measurements/studies. In-field/on-site support will be provided by the MOD with a substantial part as contribution in-kind.



## PROJECT MANAGEMENT AND EVALUATION

The planning and management of these BUEs shall be conducted in accordance with the tailored application of Prince2 methodology and proven best practice which draws on extensive experience from previous exercises conducted by the PTS. Whilst the execution of the exercise concept shall be overseen by a project management team within the OSI Division, the exercises shall be a PTS-wide effort and also involve experts from States Signatories.



An independent external Evaluation Team will evaluate each of the BUEs with short-loop feedback provided in order to implement improvements when possible prior to the next exercise. Using a combination of desk reviews, observations, interviews, questionnaires the evaluation will endeavour to:

- establish and report on the progress made to bridge previously identified operational capability gaps;
- identify further areas for improvement, thus providing the current level of OSI preparedness;
- help shape and inform subsequent efforts towards further developing operational capability.