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How to develop a credible scenario for large field exercises - Scenario Task Force activities

Science and Technology 2019 conference, June 2019

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Exercise Objectives

- Field exercises are crucial to test progress in implementing the OSI Action Plan (OSI/AP) 2016-2019 and evaluate its contribution to the further build-up of OSI operational capability.
- The OSI Exercise Plan is an ambitious undertaking including a series of Build-up Exercises (BUE) covering all phases of an OSI.
- The objectives of the BUEs are to:
  - Test progress made as a result of the implementation of the OSI/AP and its contribution to OSI operational capability;
  - validate key deliverables of the OSI/AP 2016-2019 projects;
  - validate the Programme of the third training cycle (3TC) for Surrogate Inspectors;
  - test revisions and areas in the draft OSI Operational Manual (OM) not previously exercised;
  - ensure that areas of existing operational capability have been maintained, and
  - identify areas for further improvement.

BUE Approach


- From receipt of OSI request, through preparations to deploy to departure from Vienna


- From POE arrival, through Initial Period to submission of progress inspection report
- Within 25 days of OSI request approval


- From start of continuation period to end of post inspection phase and departure from ISP
- Max. 130 days.

BUE-L (Launch Phase) → **BUE-IN (Initial Period)** → **BUE-C (Continuation)**

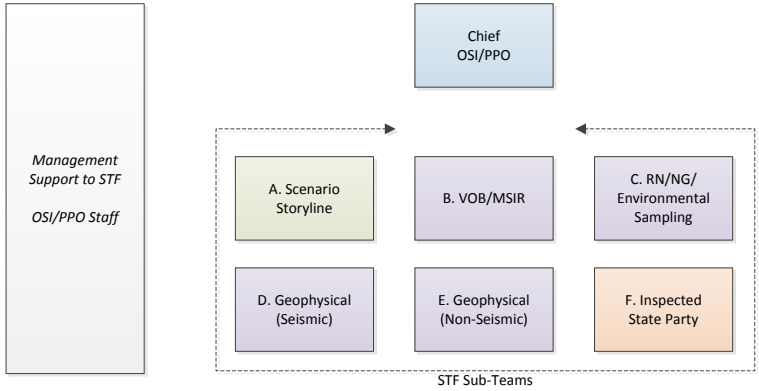
- Form: CP/HQ Exercise
- When: November 2019
- Duration: 5 days

- Form: Field Exercise
- When: June 2020
- Duration: ~14 days

- Form: Field Exercise
- When: Sept 2020
- Duration: ~14 days

Scenario Task Force

- The objective of the Scenario Task Force (STF) is to develop a contiguous scenario for the three OSI BUEs. The scenario shall allow adequate testing of OSI processes, procedures and techniques.
- Criteria for the scenario
  - Scientifically credible;
  - Implementable;
  - Internally consistent and coherent;
  - Realistic - taking into account real geographic and location features/activities;
- STF composition
  - To cover adequately all technical and non-technical scenario elements to be developed in a comprehensive and coordinated way;
  - Thirteen State Signatories experts based on their expertise and experience;
  - Participation of Host Country representatives;
  - Three PTS experts (OSI and IDC);
  - Supported by PTS (OSI/PPO)
- STF structure
  - Storyline
  - Technics sub-teams
  - ISP

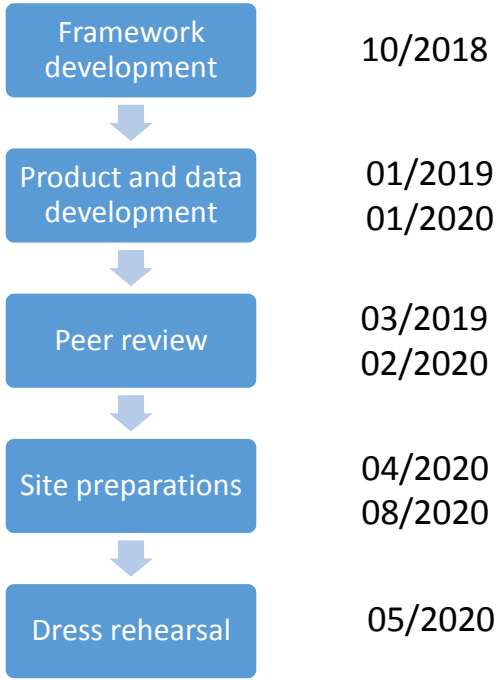


Scenario development process

- Implementation of lessons learnt from IFE14 Scenario Task Force;
- High level scenario considerations

Scenario developed in three levels

- First level
  - Storyline along the OSI;
  - triggering event;
  - ISP country profile and strategy.
- Second level
  - Scientifically consistent set of observables;
  - definition of data flow
- Third level
  - Data injects taking into account played OSI roles – RSP, ISP, OSC, IDC, IT and played timelines



STF Method of Work

- Systematic work in STF meetings
- Open mind and open discussions
- “What if” approach
- Information gathering visits to the BUE field site:
  - Familiarization, site selection
  - Site characterization and surveys
  - Site Monitoring visits
- Regular review of progress achieved
- Preparation of the Playbook, Peer Reviews and feedback
- Close cooperation with Exercise Management Team
- Transition to the Control Team

STF Main deliverables

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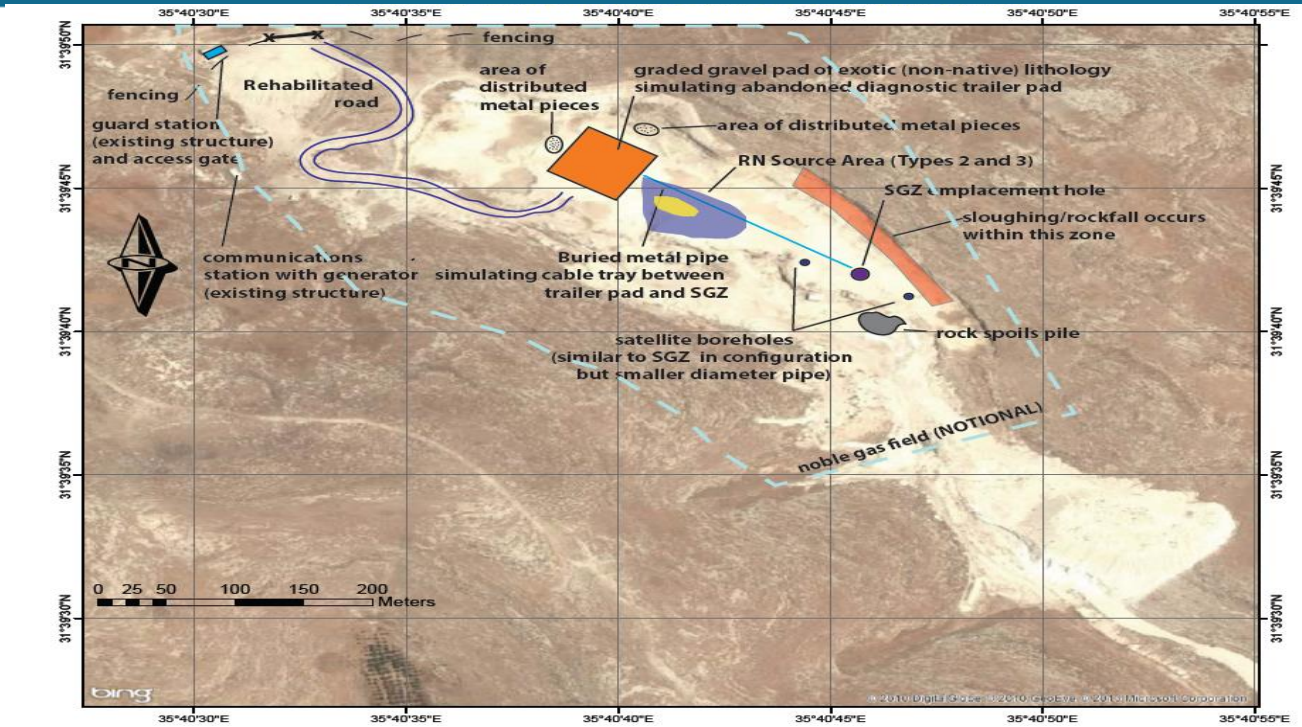
- Type of Triggering Event and its parameters;
- Storyline scenario (interim product);
- Package of documents for launching the OSI (IMS data, request, EC decision, mandate, country file, etc..);
- Guidance on the ISP strategy and possible non-technical injects;
- Location of the event and other locations/areas of interest;
- Observables to be included in the game, approaches and practical guidance for their simulation (site preparation);
- Full and sanitized scenarios;
- Exercise Implementation Timetable;
- Options/injects for managing pace of the exercise (compression and delay);
- Other supporting material for the Control Team.

Deliverables Implementation (IFE14)



modifications made at site N

Scenario Peer Review

- Two Scenario Peer Reviews (SPR) to be conducted.
- Peer Review Team composed by five State Signatories experts with relevant technical and OSI experience.
- The objective of the SPR is to independently review that the exercise scenario and related products and injects are technically realistic, scientifically credible and support the accomplishment of exercise objectives.
- SPR focus on:
  - the scientific credibility of the triggering event information;
  - the credibility of the high-level scenario storyline and the extent to which it serves as a basis to meet BUE objectives;
  - the credibility of the planned technical methods and approach to stimulate the application of OSI techniques by the Inspection Team.
- SPR deliverables will be reasoned proposals for scenario improvements.

Special thank to STF participants

Name	Field of Expertise
Malcolm Coxhead (AU)	Inspected State Party issues; OSI Operational Manual
ZhanYing Chen (CH)	Radionuclide techniques; Noble gas techniques
Ales Fronka (CZ)	Radionuclide techniques, Environmental Sampling
Malte Ibs-Von Seht (DE)	Geophysics (Non-Seismic)
Nikolai Gestermann (DE)	Geophysics (Seismic)
Yochai Ben Horin (IL)	Geophysics (Seismic)
Taghi Mohammad Ferami* (IR)	Inspected State Party and Requesting State Party issues
Massimo Chiappini (IT)	Visual observations; MSIR
Josphat Mulwa (KE)	Visual observations; MSIR
Vitaly Shchukin (RF)	Storyline, OSI Technologies
Dmitry Sagaradze (RF)	Geophysics (Non-Seismic)
Anders Ringbom (SE)	Noble gas techniques; Environmental Sampling
Sam Toon (UK)	Geophysics (Non-Seismic)
Peter Baran (SK)	Exercise Location; Inspected State Party issues
Peter Labak (PTS)	OSI Technologies
Ivan Kitov (PTS)	Geophysics (Seismic)

*until May 2019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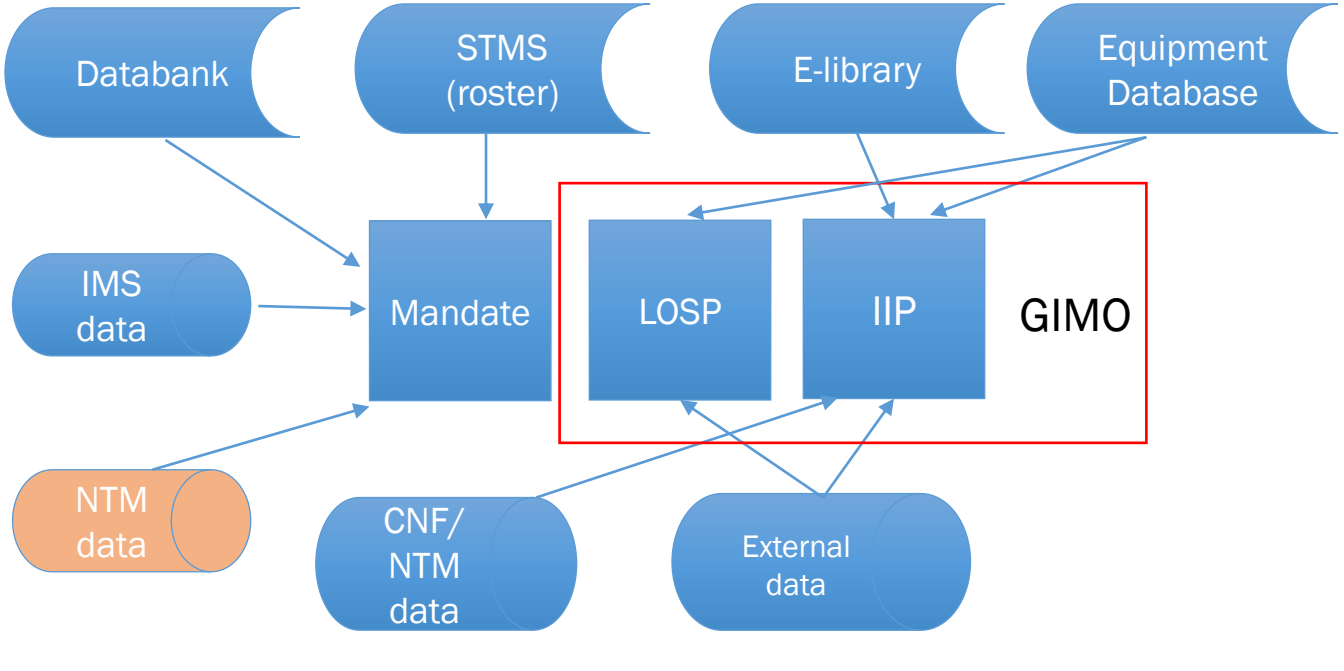
Data flow (BUE-L)



SPR participants

Peer Reviewers	Expertise
Jens Ole Ross	Atmospheric transport modelling and radionuclide analysis for CTBT monitoring
Gilbert Le Petit	Radionuclides, noble gas and environmental sampling
Igor Markov	Nuclear test detection, visual observation, managed access, confidentiality of information
Peter Sankey	Nuclear testing, seismic issues
Gilbert Sateia	Treaty, Operational Manual, confidentiality of information

Evaluation Team observers: John Walker and Thierry Heritier
Supported by STF sub-teams leaders and PTS staff.

Assumptions

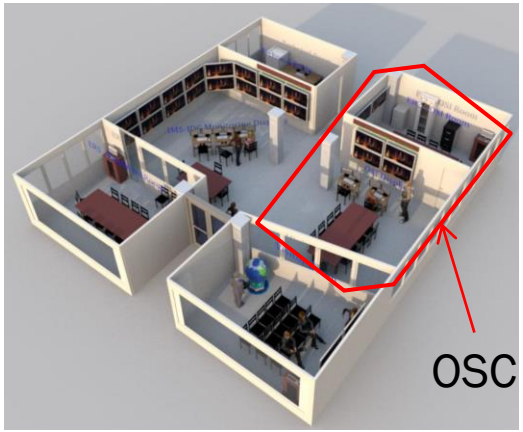
- No large-scale OSI field exercise will be conducted prior to 2023;
- adequate financial resources will continue to be allocated for the development of the OSI verification regime;
- States Signatories are expected to provide the support requested by the PTS;
- the BUEs shall serve as platforms to validate the Third training cycle programme;
- OSI related infrastructure, (OSC and ESMF) will be available for the BUEs;
- activities will not be conducted 24/7 and the clock shall be stopped accordingly;
- IT activities conducted pursuant to a consolidated version of the draft OSI OM and QMS documentation;
- the evaluation process shall not represent a comprehensive benchmarking.

New ESMF at TeST Centre

- The New Equipment Storage and Maintenance Facility (ESMF) at the TeST Centre is a wide PTS Centre for storage, testing and training constructed in the premises of AIT at Seibersdorf for:
  - Secure storage for OSI equipment and rapid deployment system including dedicated docking area;
  - Storage and dispatch;
  - Training;
  - Hazardous materials storage ;
  - Area for RN/NG development and testing;
  - Equipment testing, integration and hands-on training including outdoor;
  - Electronics and mechanical workshops;
  - Backup OSC
- Opened last week on 19, June 2019

Relocated OSC in the VIC

- Updated Operations Support Centre (OSC) Concept of Operations in light of IFE14 recommendations with Situation Centre at its core.
  - Technical support
  - Operational support
  - Information management
- Joint PTS effort to upgrade the IDC-OPC and to build new PTS-wide integrated facility for monitoring and supporting IMS, IDC and OSI operations
- CTBTO Operations Centre (COPC) will support all OSI OSC functions
- Opened of the COPC on 20, May 2019



New Information Management system

- The new generation OSI Information Management System in light of IFE14 recommendations has been developed.
- The Geospatial Information Management system for OSI (GIMO) integrates OSI techniques and manage Inspection Team activities in a GIS based application
- Full alignment with the Inspection Team Functionality and Field Team Functionality concepts.
- Information security policy implemented in GIMO