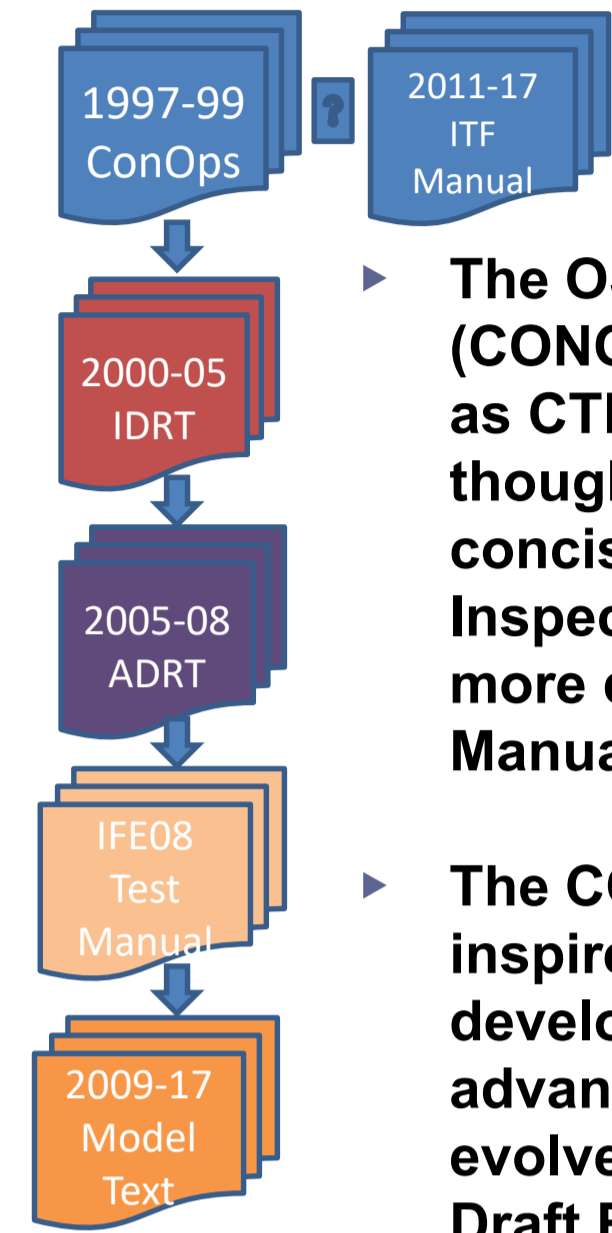


Revisiting the On-site Inspection (OSI) Concept of Operations in Light of Integrated Field Exercise 2014 (IFE14) and Inspection Team Functionality

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Introduction



The OSI Concept of Operations (CONOPS) was compiled in 1999 as CTBT/PTS/INF.136. Some thought the CONOPS should be a concise "Handbook" for the Inspection Team based on the more detailed Operational Manual.

The CONOPS vision matured and inspired Operational Manual development as technology advanced and procedures evolved through: the 2000 Initial Draft Rolling Text (IDRT); the 2005 Annotated Draft Rolling Text (ADRT); Integrated Field Exercise 2008 (IFE08) Test Manual, to the current Model Text for the Draft OSI Operational Manual as it is revised to reflect discussions in Working Group B Prior to and at its Forty-Fourth Session, CTBT/WGB/TL-18/57.

Objective

To Demonstrate how the vision from the 1999 OSI CONOPS advanced, expanded, and matured through 20 years of numerous Workshops, WGB sessions, Tabletop and Field exercises, equipment development, operational guidelines and field applications resulting in the development of the Inspection Team Functionality (ITF) concept applied very successfully during the Integrated Field Exercise 2014 (IFE14) in Jordan

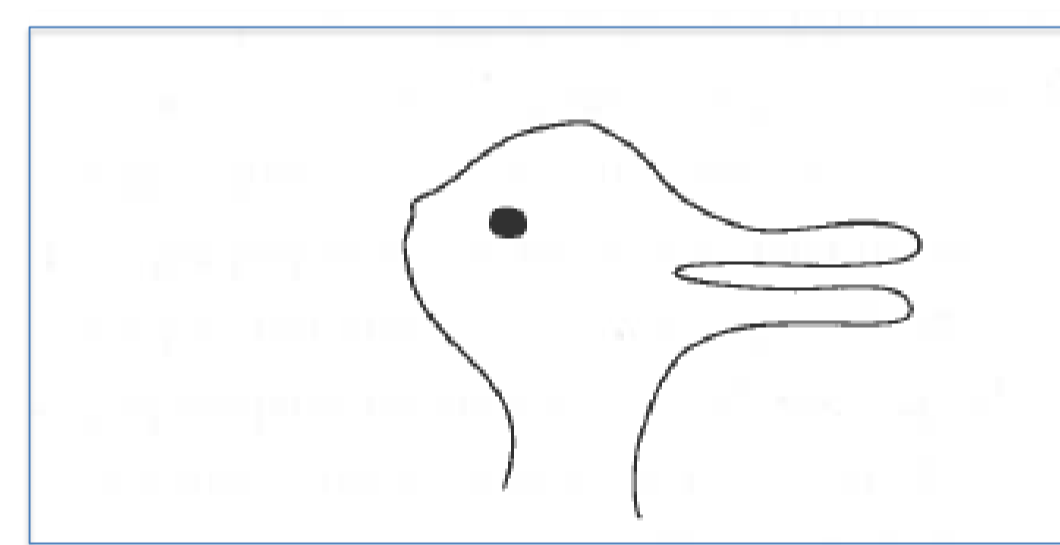
Concept of Operations

The Concept of Operations for the CTBT OSI regime focused on more than just OSI operational issues. It included all of the pieces needed to initiate and provision an OSI: overarching capabilities to expedite an OSI, preparations and planning to logistically support an OSI including, health and safety (H&S), which must be in place before a request is approved, and the extensive resources required to conduct a 130 day inspection, and what is needed post-inspection to demobilize the OSI and complete the Inspection Report.

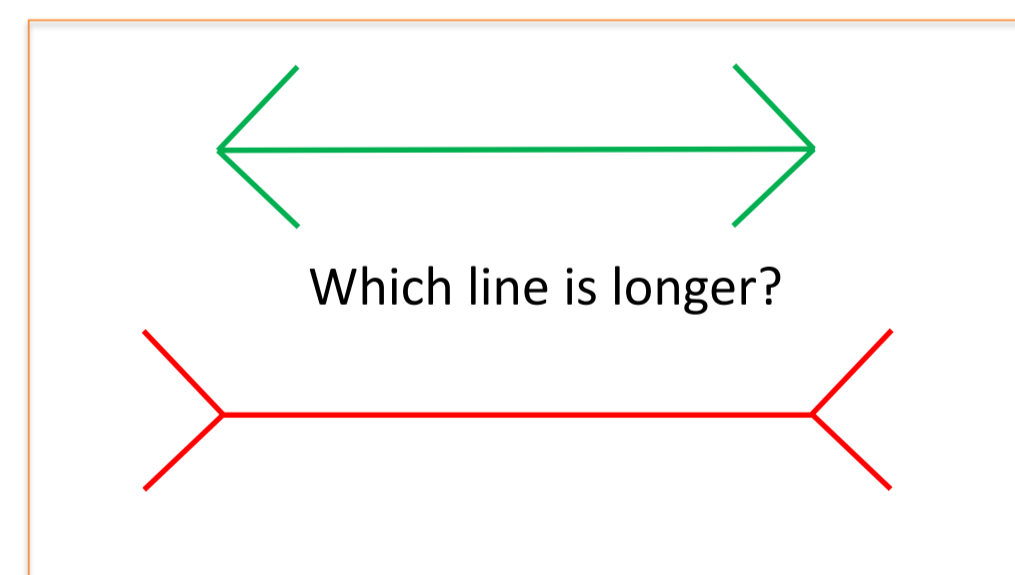
Guidelines from 1999 Concept of Operations and Equivalent Statements found in the Inspection Team Functionality process

1999 Concept of Operations	2014 Inspection Team Functionality
Autonomy of the Inspection Team Leader (ITL)	ITL acts as the highest ranking officer
OSI will be objective and factually based	objectively use the information available
briefing the Inspected State Party (ISP)	Inspection Team (IT) and the ISP ... consultations
IT and ISP ... continuous negotiations	IT-ISP meeting, ... to plan inspection activities
Geographic Information System (GIS) for visualization	GIS platform to facilitate visualization
minimize interference ... in Inspection Area	missions ... after consultations with the ISP
prioritize the search areas	Rank the missions proposed
integrated operation	efficient and effective implementation
Prioritize the inspection activities	ranked list based on the ... priority
some inspection activities immediately	observe phenomena ... that decay quickly

Inspection Team Functionality (ITF) is an operational methodology to keep OSIs factually based.



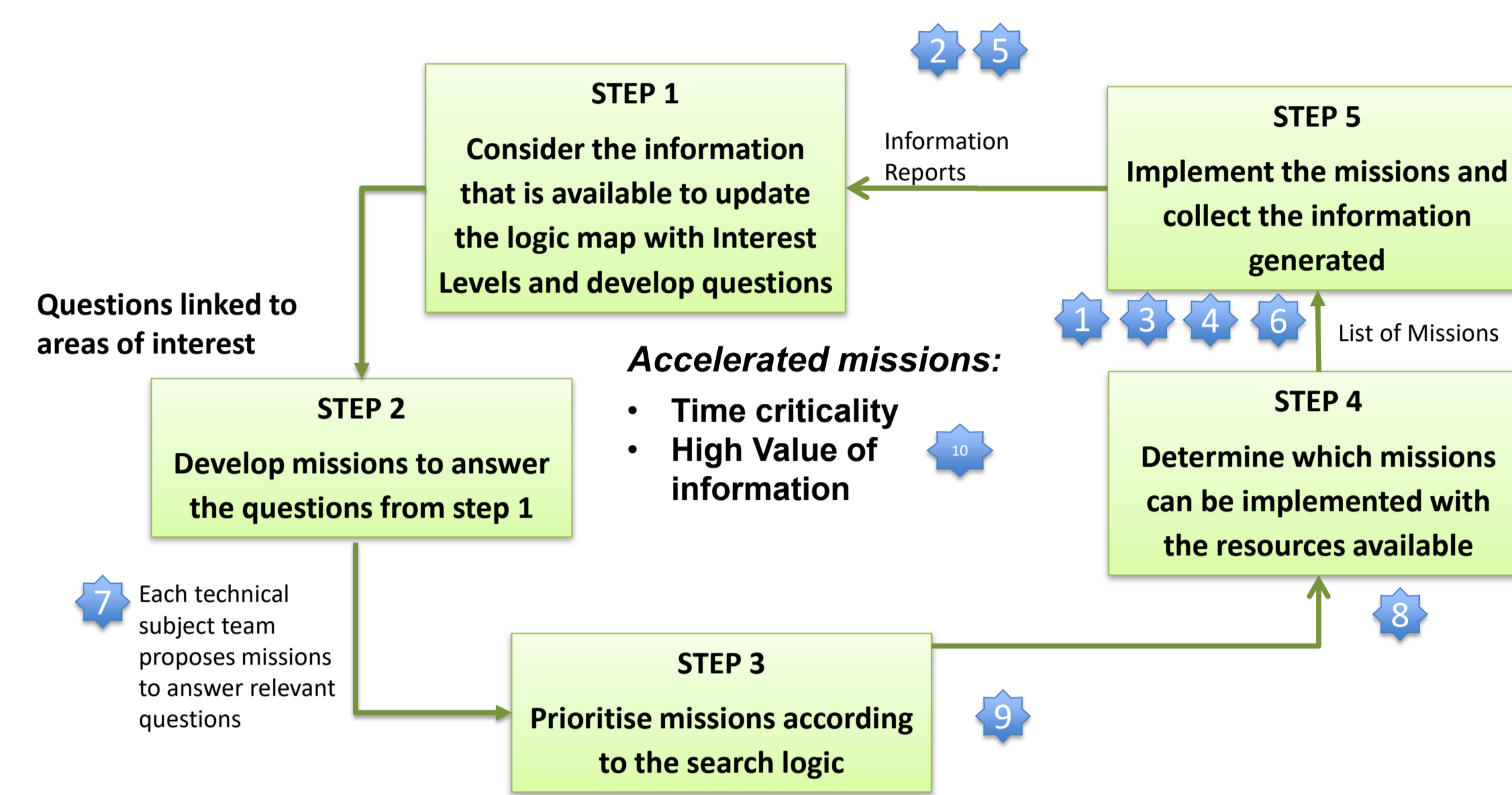
OSIs need to be factually based! You see a drawing. Duck or rabbit is an interpretation that your mind makes subconsciously.



ITF requires inspectors to be objective, to avoid making assumptions, and to identify the locations and optimum technique(s) to collect the data needed to answer the question(s).

Essentially ITF is about avoiding biased expectations and communicating data within the Inspection Team so the IT can create informed questions about the Inspection Area (IA) and expedite the proper technique(s) to answer the questions.

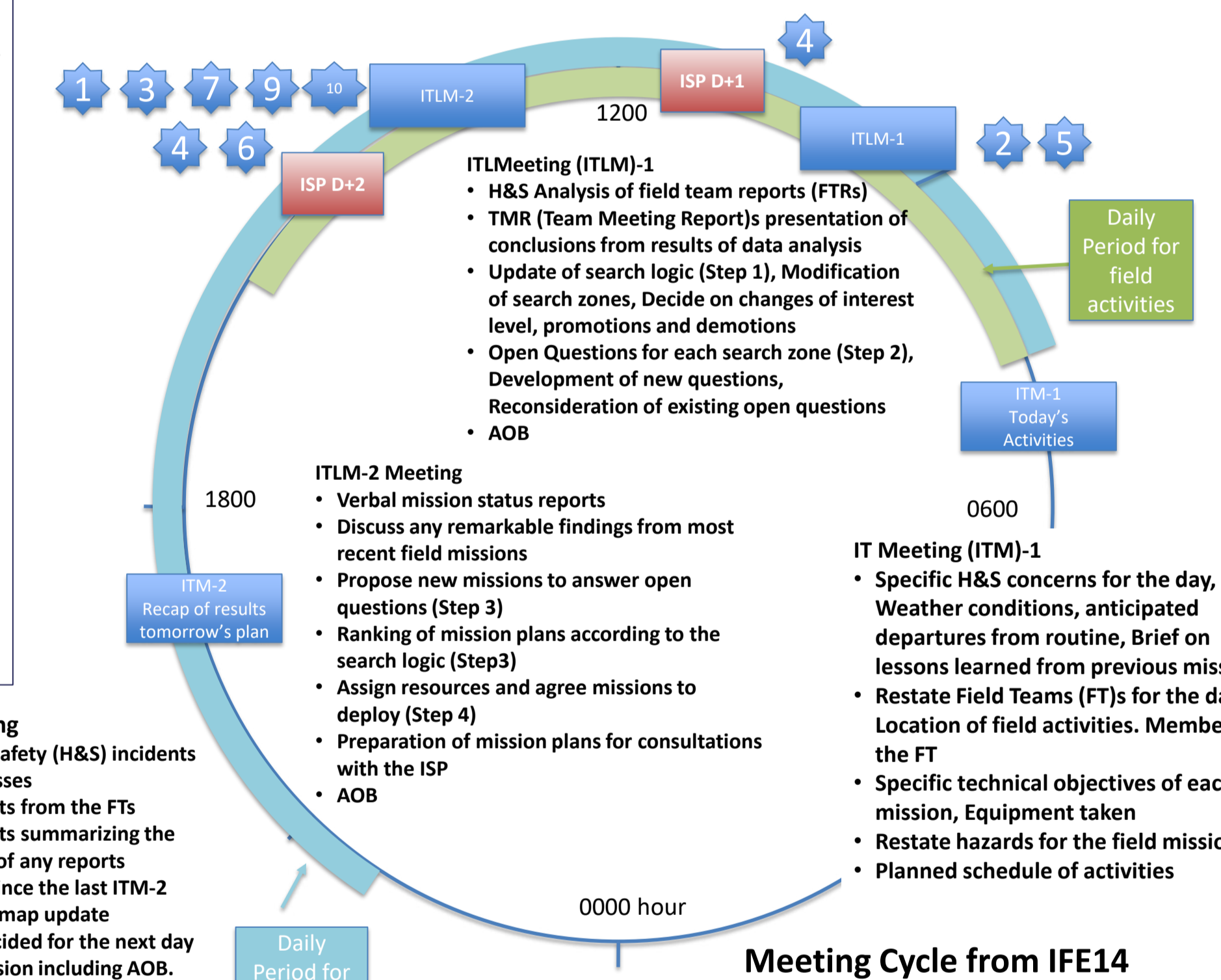
Inspection Team Functionality is a five step process.



To implement ITF correctly requires a series of meetings within the IT and coordination of field activities with the ISP

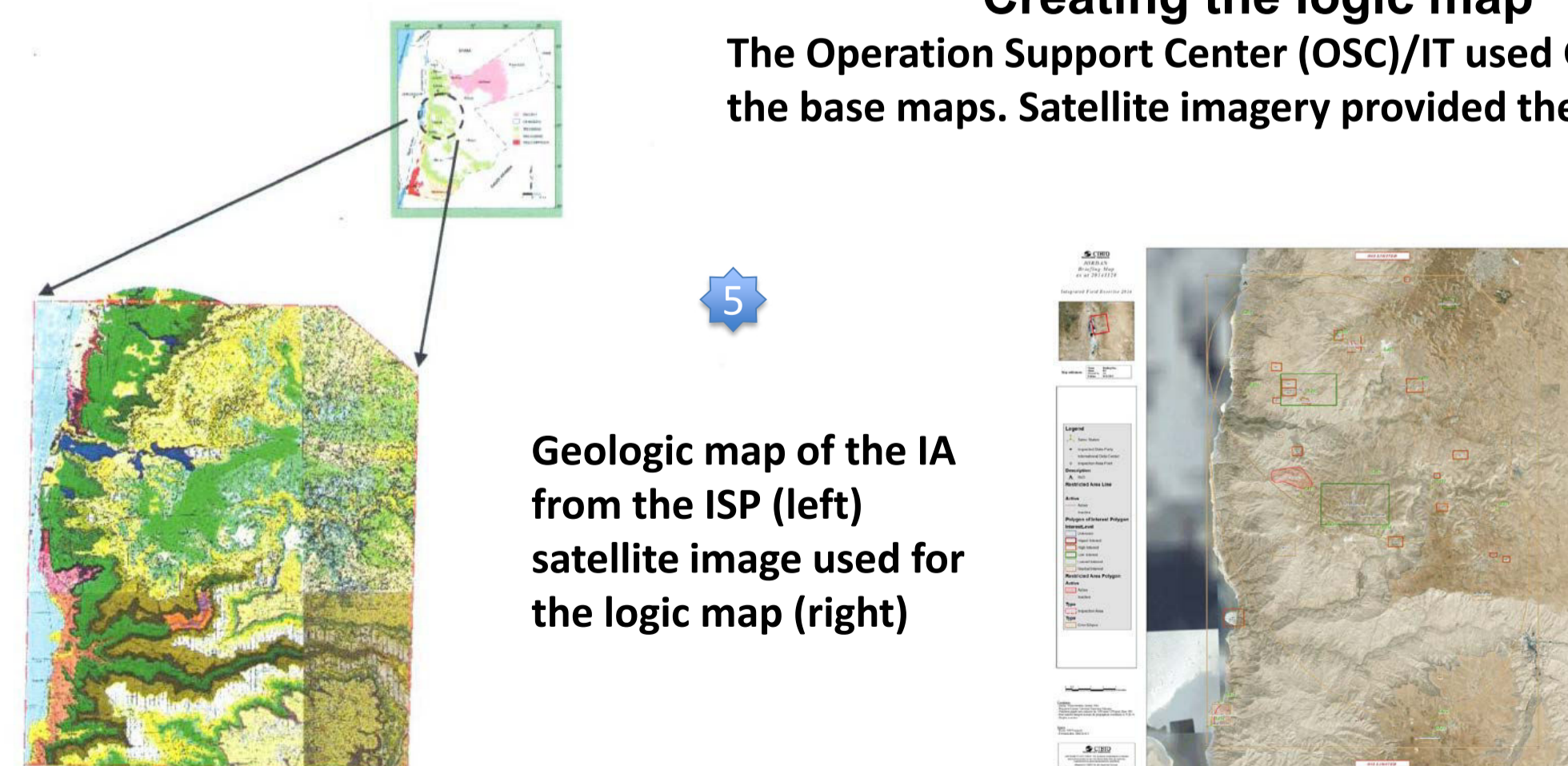
Planning Activities
ISP Day+1 (ISP D+1)
 Discuss the current status of ongoing field and Base of Operations (BOO) activities
 • Discuss planned missions for the next day and any changes to those missions or activities
 • Any other business (AOB)
ISP Day+2 (ISP D+2)
 Discuss an issues brought to light by the end of mission activities.
 • Discuss proposed missions and support requirements for activities planned for 2 days in the future.
 • AOB
 D= Current Day

ITM-2 Meeting
 • Health and Safety (H&S) incidents and near misses
 • Verbal reports from the FTs
 • Verbal reports summarizing the conclusions of any reports completed since the last ITM-2
 • Search logic map update
 • Missions decided for the next day
 • Open discussion including AOB.
 Any issue can be raised related to the OSI, including the technical operations, H&S or wellbeing



Creating the logic map

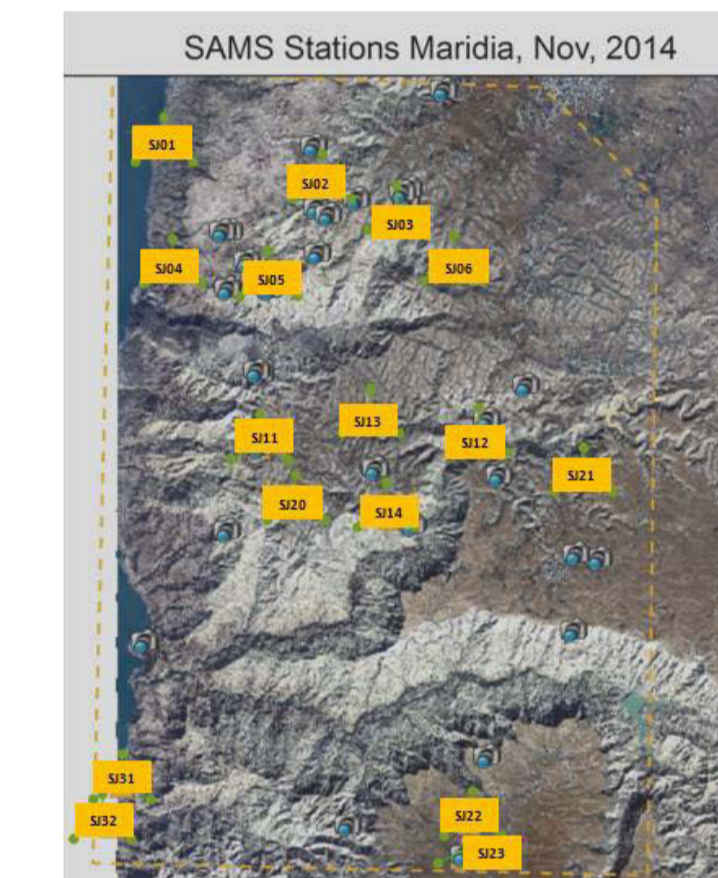
The Operation Support Center (OSC)/IT used GIS system for the base maps. Satellite imagery provided the logic map.



Geologic map of the IA from the ISP (left) satellite image used for the logic map (right)

P No.	Rationale
P000	The entire Inspection Area
P001	The area around the epicenter as clarified by the ISP
P002	Quarry features and the earthworks identified for the satellite imagery
P003	Recently constructed building as identified from the satellite imagery and a seismic from the quarry blasting and explosive catalogue provided.
P004	Quarry and landforms identified from the satellite imagery
P005	ISP declared Restricted Access Site (RAS). IT and ISP negotiations are necessary.
P006	Feature identified by the initial overflight

Search zones are identified by the data and information available. Questions about those search zones are used as a basis to create missions to answer those questions. Data from the missions can close the questions or raise new questions.



Seismic Aftershock Monitoring stations

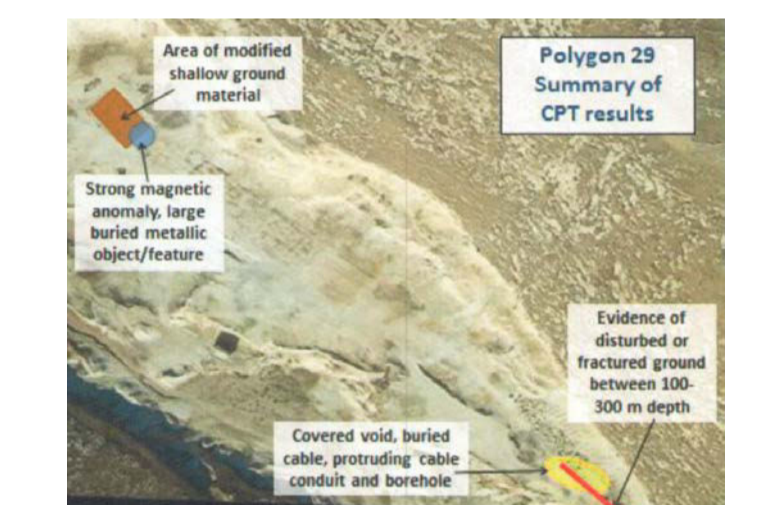
Missions are planned based on time criticality and information value for establishing interest levels.



Radionuclide (RN) Measurements are from vehicles, aircraft, and backpacks.

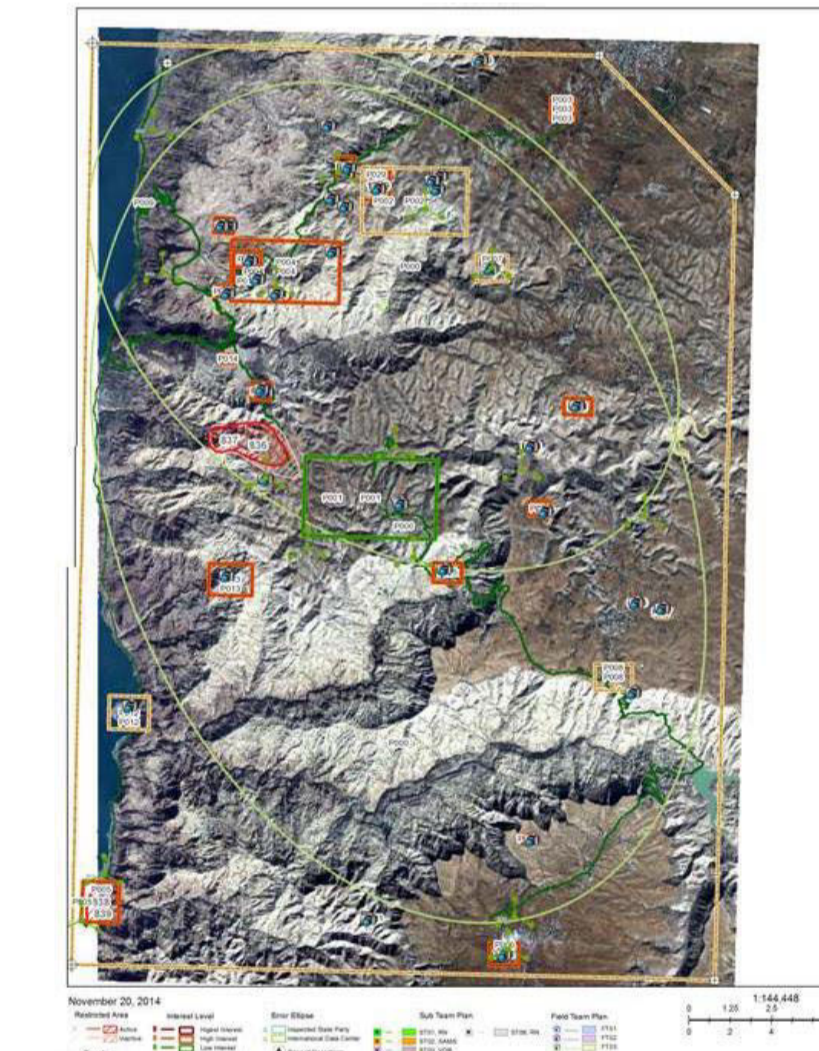


Visual observation in ISP epicenter area.

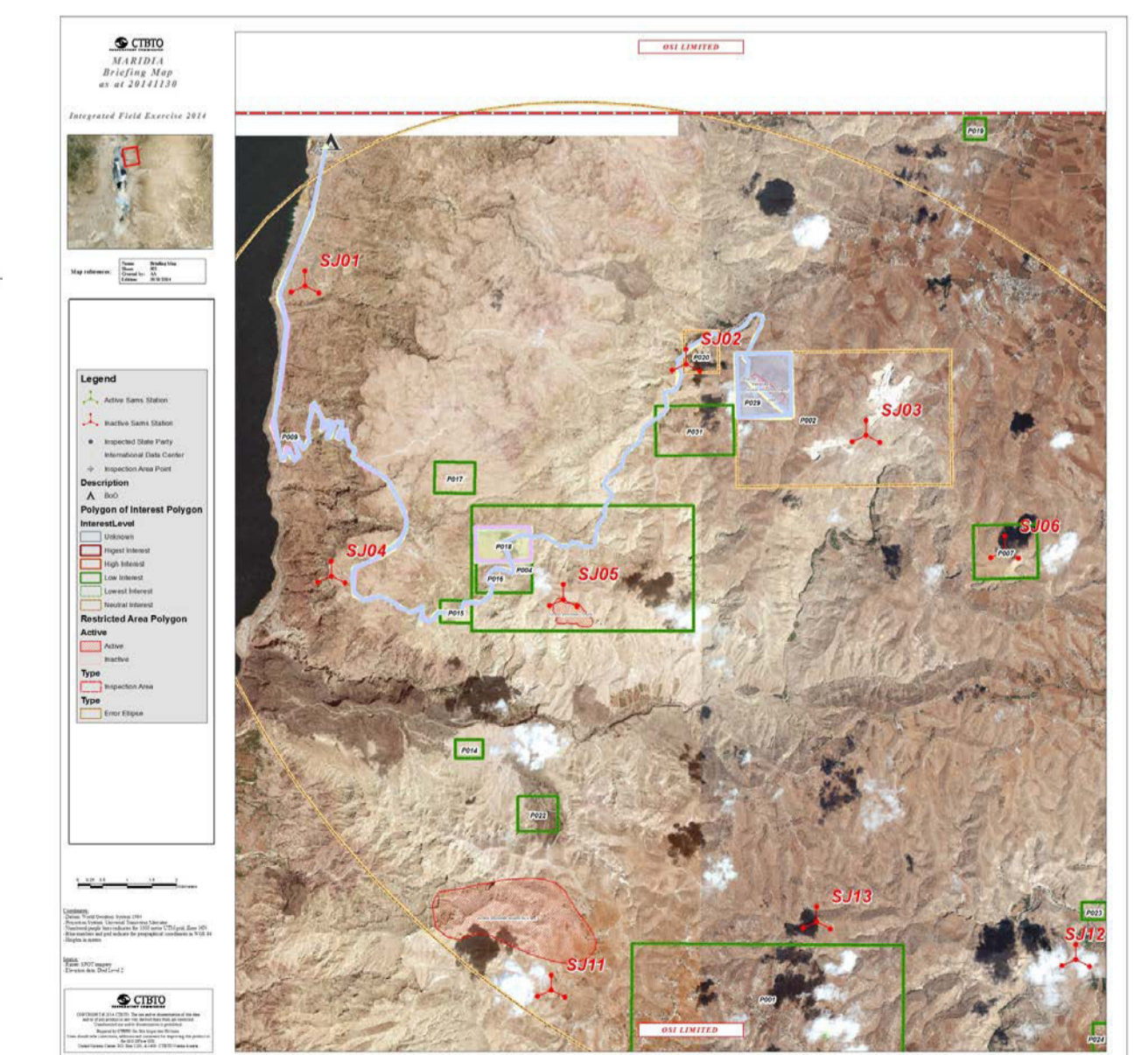


Initial Overflight photo of a possible area of interest (left) and data plotted on aerial photo (right)

All of the search zones are documented on the logic map along with their interest levels. New zones are identified as data is collected. Focus areas within an existing zone become a new zone. IFE14 identified 30 zones (29 zones in the initial inspection period and 1 in the continuation period).



Maps showing the proposed routes for each of the IT field teams which were negotiated with the ISP during the ISP D+1 and ISP D+2 meetings



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The views expressed here do not necessarily reflect the views of the United States Government, the United States Department of Energy, the National Nuclear Security Administration, the Los Alamos National Laboratory, or the Comprehensive Nuclear-Test-Ban Treaty Organization

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