
THIS DOCUMENT COULD CONTAIN TECHNICAL DATA, THE EXPORT OF WHICH IS RESTRICTED BY THE U.S. ARMS EXPORT CONTROL ACT (AECA) (TITLE 22, U.S.C. SEC 2751, ET SEQ.) OR THE EXPORT ADMINISTRATION ACT OF 1979, AS AMENDED (TITLE 50, U.S.C., APP. 2401, ET SEQ.). TECHNICAL DATA AUTHORIZED FOR EXPORT MAY NOT BE REEXPORTED, TRANSFERRED, OR DIVERTED FROM THE COUNTRY OF ULTIMATE END-USE OR FROM THE AUTHORIZED FOREIGN END-USER OR DISCLOSED TO A NATIONAL OF ANOTHER COUNTRY WITHOUT THE PRIOR WRITTEN APPROVAL OF THE OFFICE OF DEFENSE TRADE CONTROLS. TECHNICAL DATA CONTAINED IN THIS DOCUMENT HAS BEEN AUTHORIZED FOR EXPORT FROM THE UNITED STATES TO FOUR-EYES ALLIED PARTNERS, NATIONALS OF AUSTRALIA, CANADA, AND THE UNITED KINGDOM BY THE OFFICE OF DEFENSE TRADE CONTROLS, IN SO FAR AS INDIVIDUAL NATIONALITY IS NOT DIVERSE FROM HIS OR HER EMPLOYING AGENCY.



Know the Earth...Show the Way

Persistent Surveillance Joint Mission Thread

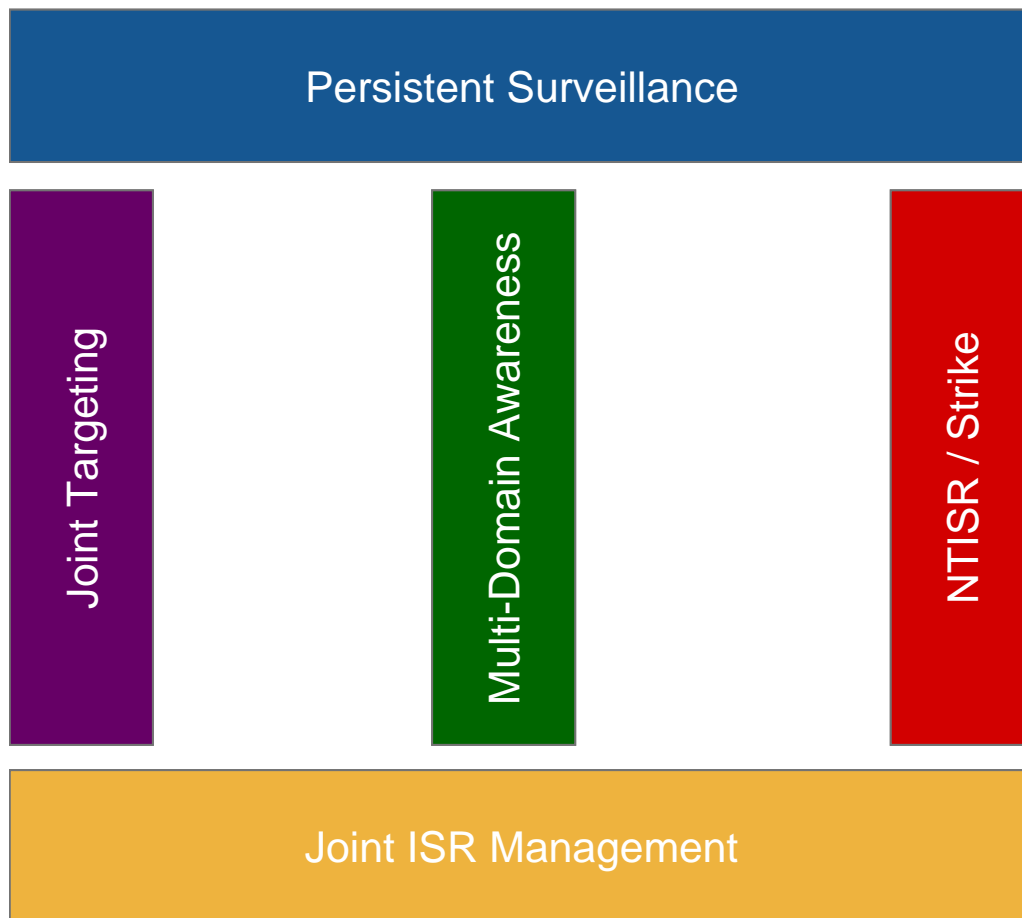
Final Planning Conference Outbrief, 9 May 08



Persistent Surveillance TIG Lead



► Empire Challenge 08 Joint Mission Threads



► Empire Challenge 08

Persistent Surveillance JMT Objectives



1. Develop and validate a Persistent Surveillance Assessment Methodology
2. Investigate/evaluate JTF Persistent Surveillance CONOPs/TTPs



▶ Empire Challenge 08

PS TIG FPC Accomplishments

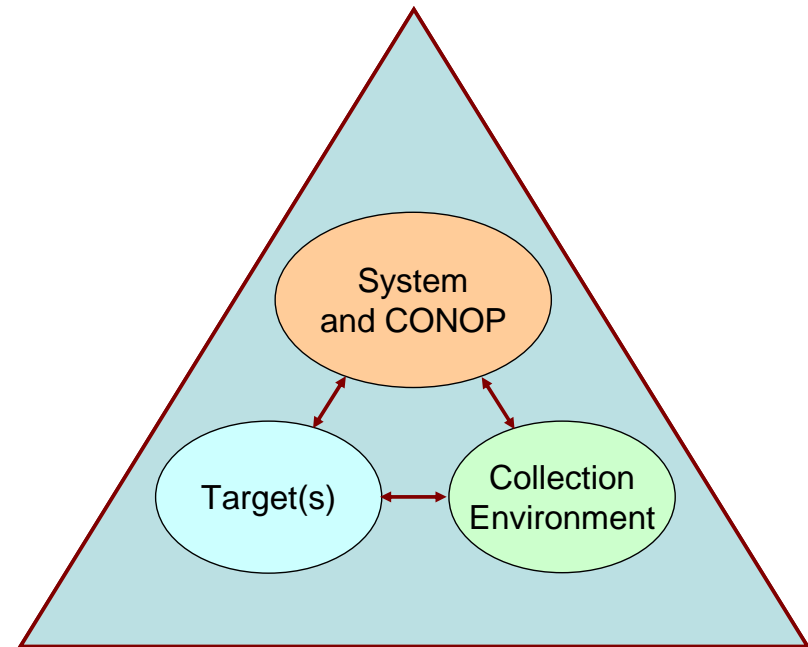
- Led a combined PS/MDA/JISRM planning session to formulate resources and process detail for MDA scenario events
 - Refined timeline and events to synchronize with execution schedule and resources
 - Established detailed TTPs for initiation and execution of JPS operations
- Reviewed and reached consensus on format/content for Section 4.1 (JPS section of EC08 JISRM TTPs)
- Discussed options for expanding Maritime segments of MDA scenario
 - Identified possible GMII and GMSA infrastructure and resources to tap into and/or incorporate (MDA DS COI, Seaport, NMIC, NCC, etc)
 - Reviewed proposed Maritime scenario segment provided by GMII (tugs/ships transverse ocean and enter port with mines)
- Discussed categories of MOEs/MOPs relevant to JPS and potentially applicable to JPS Assessment Methodology
- Established “Way Ahead” for pre-execution planning



► Empire Challenge 08

Scenario Assessment Dimensions

- Systems Capabilities & CONOPs: DGCS/ISR
 - Platform(s)
 - Sensor(s)
 - Exploitation systems
 - Comms
 - Networks
 - Data interoperability
 - Standards
 - Metadata
 - Data sharing
- Target Attributes
 - Location (access, Air/Land/Water/Space)
 - Physical (size, weight, color, etc)
 - Dynamic Attributes (speed, direction, etc)
 - EM signature
- Environmental Conditions
 - Weather
 - Scene “background”
 - EMI/EMC
 - Denial/Deception





► Persistent Surveillance System/CONOP Performance Metrics

- **Time** – e.g. revisit rate, tasking timelines, processing/analysis timelines (delivery)
- **Space** – e.g. area access, area coverage, probability of collection coverage (P_{cc})
- **Spectrum** – e.g. EM band coverage (IR, EO, RADAR, MSI/HSI, etc), intelligence disciplines (IMINT, SIGINT, HUMINT, MOVINT, MASINT, etc), multi-domain, multi-security level, cross-organization, etc
- **Capacity** – e.g. quantity of information (e.g. processing throughput, collection rate, data storage), quality of information (accuracy, resolution), communications bandwidth



► Persistent Surveillance Information Usefulness Metrics

- **Latency** – “did I get the data when I needed it?”
- **Discovery** – “was the data I needed discoverable and accessible?”
- **Relevance** - “was the info relevant to my needs?”
- **Quantity** - “did I get all the info I needed?”

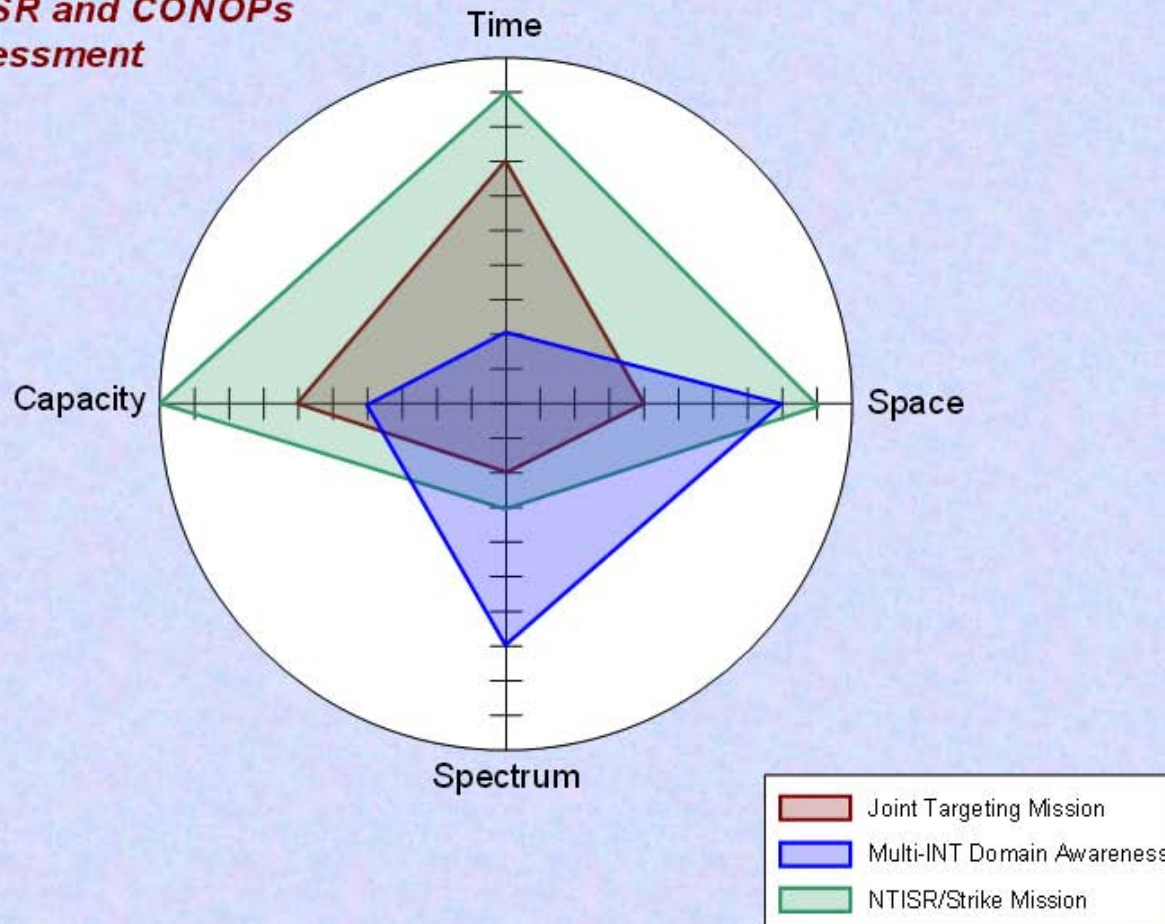
Information usefulness assessments will be based on extensive feedback (qualitative and quantitative), obtained directly from participating analysts, users, and “commanders”

Directly addresses “Commander’s Intent” and associated intelligence requirements satisfaction



► Persistent Surveillance Performance Profiles (System/CONOP centric)

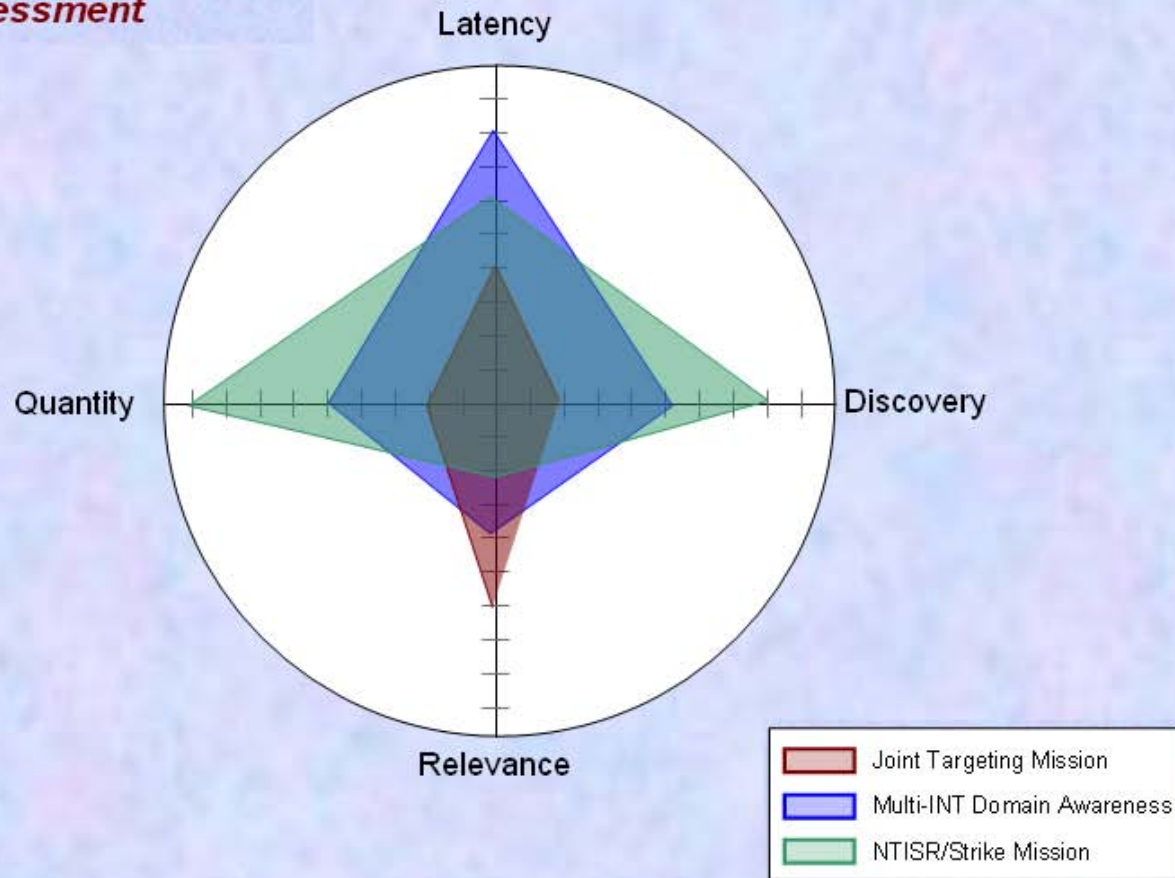
*Empire Challenge 08
DCGS/ISR and CONOPs
PS Assessment*





► Persistent Surveillance Usefulness Profiles (data centric)

*Empire Challenge 08
DCGS/ISR and CONOPs
PS Assessment*



Sensor Planning Spreadsheet



0032	T-10:00 (0100 hrs local)	Upon receipt of WCC warning, CTF transmits an alert to all three bases describing the potential threat and orders stepped up security and surveillance in/around the bases.	CTF orders that a contingent (pre-planned) PISR package be put together for possible execution within the next 12 hours. Original MIBD entries on Larkom and Fosterka, as well as the Ill Sung, are pulled up and updated. CTF ISR Plans/Mgt Cell tasks the GEOINT Cell to conduct terrain topography timeline analysis to figure out where targets may be in terms of comms and approach avenues, to support development of optimum sensor mix for PISR package. In addition, CTF ISR Plans/Mgt Cell tasks Targeting Cell to come up with a targeting plan for a potential strike mission. Upon submission of GeoINT Cell analysis and recommendations, CTF ISR Planning/Mgt Cell organizes discussion (Adobe Connection on CFE?) with all component TMs/CMs, from CTF level down to BCT level, to look at all assets available to support PISR pkg and decide which ones to chop over to BCT control. The PISR package request is documented in a JPS Request and submitted to JCXB via PRISM. JPS request is considered, approved, incorporated into the next day's CXP as a "contingent" series and posted on CFE Wiki page. ATO and RSTA annex for next day includes "normal" collection plan as well as the contingent PISR plan.
0033	T-09:30 to T-08:30 (0130 - 0230 hrs local)	An SUV with driver/scout arrives into Ridgecrest area, proceeds on a paved road about 20 mi to the vicinity of the cave location (Loc-6), and stops. Driver/scout gets out of vehicle and walks the remaining 1/4 to 1/2 mi to the cave location (may have to be simulated depending on exercise/range safety constraints). Driver/scout spends 10-15 minutes making preparations and inspecting the cave area, walks back to the SUV, and then drives the SUV back towards Ridgecrest. the SUV with driver/scout proceeds to the safe house (Loc-4) and remains there for the rest of the night (<i>segment of the drive onto the range and to the safe house will be simulated, because range will be closed at night</i>)	
0034	T-8:00 to T-3:00 (0300 - 0800 hrs local)	VBSS team arrives in SF harbor, locates the Wang Chung, searches the vessel but finds nothing, examines logs and interviews several witnesses. Witnesses recalled seeing two suspicious-looking individuals loading several containers into a Ryder rental truck and seeing the truck depart the port area. VBSS team reports findings	
0035	T-3:00 (0800 hrs local)	Based on results of search/interrogation of the Wang Chung in SF Harbor, CTF launches pre-planned Persistent Surveillance operations in an effort to find/track the Ryder truck and determine whereabouts of Larkom and Fosterka and the suspected chemical containers	CTF ISR Coordination Cell (J2/J3) issues a "Special Order," via Adobe Connect Chat, directing immediate execution of contingent PISR collection plan, in accordance with ATO and RSTA annex.
0036	T-2:50 (0810 hrs local)	TACON for ISR resources are transferred to Task Force Lancer in accordance with JPS CONOP and preplanned TTPs	TF Lancer (personnel manning the JMSM trailer?) uses Adobe Connect Chat to maintain real-time communication with the various aircraft, mission ops centers, or ground control units, in order to maintain tactical control (TACON) of the ISR resources during JPS. TF Lancer directs collection and PED for the various supporting ISR resources as necessary, synchronizing ISR operations with the scheme of maneuver. Collaboration, cross-cueing, etc is done collaboratively among all the players at all echelons in real time. In cases where chat is not possible (e.g onboard an aircraft that does not have the capability), TF Lancer communicates with the sensor operators onboard the platform itself or corresponding ground ctrl / mission ops via voice radio. Sensor and data products from various sources/domains are generated and moved from wherever they originate to the CFE network (HSG, sneakernet, other?). Data/products are stored in Adobe Connect shared folder structure for universal access by anyone on the CFE with Adobe Connect client. In addition to being posted into the shared directory structure for shared awareness, some data/products may be provided via direct route (e.g. email, live streaming video, etc) to TF Lancer. Real-time data/products are provided via whatever links are tied to the sensor/platform and available in JMSM trailers (<i>need to flesh this out more</i>). TF Lancer uses JADOCs to issue alerts and provide targeting requests, as well as to request NTISR support.

► Sensor Planning Spreadsheet



Event 0032

T- 10:00: CTF receives alert from WMD Crisis Cell, plans for JPS operations

CTF orders that a contingent (pre-planned) PISR package be put together for possible execution within the next 12 hours. Original MIDB entries on Larkom and Fosterka, as well as the Ill Sung, are pulled up and updated. CTF ISR Plans/Mgt Cell tasks the GEOINT Cell to conduct terrain topography timeline analysis to figure out where targets may be in terms of comms and approach avenues, to support development of optimum sensor mix for PISR package. In addition, CTF ISR Plans/Mgt Cell tasks Targeting Cell to come up with a targeting plan for a potential strike mission. Upon submission of GeoINT Cell analysis and recommendations, CTF ISR Planning/Mgt Cell organizes discussion (Adobe Connection on CFE?) with all component TMs/CMs, from CTF level down to BCT level, to look at all assets available to support PISR pkg and decide which ones to chop over to BCT control. The PISR package request is documented in a JPS Request and submitted to JCXB via PRISM. JPS request is considered, approved, incorporated into the next day's CXP as a "contingent" series and posted on CFE Wiki page. ATO and RSTA annex for next day includes "normal" collection plan as well as the contingent PISR plan.



► “Way Ahead”

- Iterate scenarios and supporting architecture to fully define and characterize the sensor(s), target(s), and environment(s) for EC08 execution
 - Identify resources and personnel to support JPS TPED and C2 functions at BCT level (TF Lancer, Echo Range)
 - Finalize sensor systems that will be available to support PS thread
- Finalize JPS MOEs/MOPs for MDA scenario, formulate plan and collection process to obtain necessary MOE/MOP data during execution
- Finalize format/content of Section 4.1, EC08 JISRM TTPs
- Finalize options for expanding Maritime aspects of MDA scenario, incorporate into current plans where feasible

NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY ▼



➤ *Know the Earth...Show the Way* ➤➤ ➤

