

*Dugway Proving Ground*



**ATEC**



**DUGWAY  
PROVING  
GROUND**



# DOT&E Initiatives from the Middle

NDIA Test & Evaluation Conference  
Darren Jolley  
March 12-15, 2012

# The Bun Holds Us Together, But "Where's The Beef?"



DOT&E, DUSA-TE  
and JRO-CBRND

OTA's and other test  
organizations

Dugway Proving Ground  
West Desert Test Center  
MRTFB for CBD Testing

JPEO-CBRND



# Objectives

- The objectives are two fold:
  - Report on mechanisms being established by the joint CBRND Program including DUSA-TE to facilitate DOT&E initiatives
  - Report the success of those mechanisms from the perspective of the CBD MRTFB.



# Role of DUSA-TE

- DUSA-TE is the Chemical, Biological, Radiological and Nuclear Defense (CBRND) T&E Executive (Mr. Cooke)
- DUSA-TE has established an action team (Test and Evaluation Capability and Methodology Integrated Process Team) or TECMIPT
- The TECMIPT is responsible for submitting recommendations to DUSA-TE concerning T&E gap identification, T&E standards approval and certification of CBRND T&E capabilities for use.



# TECMIPT

- TECMIPT is tasked to:
- Identify and prioritize T&E capabilities gaps to support T&E infrastructure investment planning.
- Develop, coordinate, and finalize T&E Capability Needs (TECNs) for CBRND T&E Executive approval. A TECN provides prioritized requirements for T&E capabilities projects and include a description of the commodity area T&E Strategy.
- Review Verification & Validation (V&V) plans, validation protocols, final reports and supporting data for T&E capabilities, and provide recommendations of fielding/certification of these T&E capabilities to the CBRND T&E Executive based on this review.
- Review, update and recommend CBRND T&E Executive's endorsement of Test Operations Procedures (TOPs) that support the use of T&E capabilities.



# The CAPAT's

- The TECMIPT relies on a set of Commodity Area Process Action Teams (CAPAT) to complete its tasks.
- CAPATs cover all major functional areas of CBRN testing to include, detection, decontamination, protection, modeling and simulation among others.
- CAPATs consist of a blend of T&E SMEs from testing organizations, operational test agencies, JPEO-CBRND organizations; representatives from JRO-CBRND, DUSA-TE, DUSA-OR, DTRA, and other non-DoD entities such as EPA, NIST and DHS.



# Early Involvement is Key

- Testers
  - West Desert Test Center
  - Edgewood Chemical and Biological Center
  - NSWCC-Dahlgren
  - 28<sup>th</sup> Test Support Squadron at Eglin Air Force Base
- Evaluators
  - AEC
  - AFOTEC
  - MCOTEA
  - COMOPTEVFOR

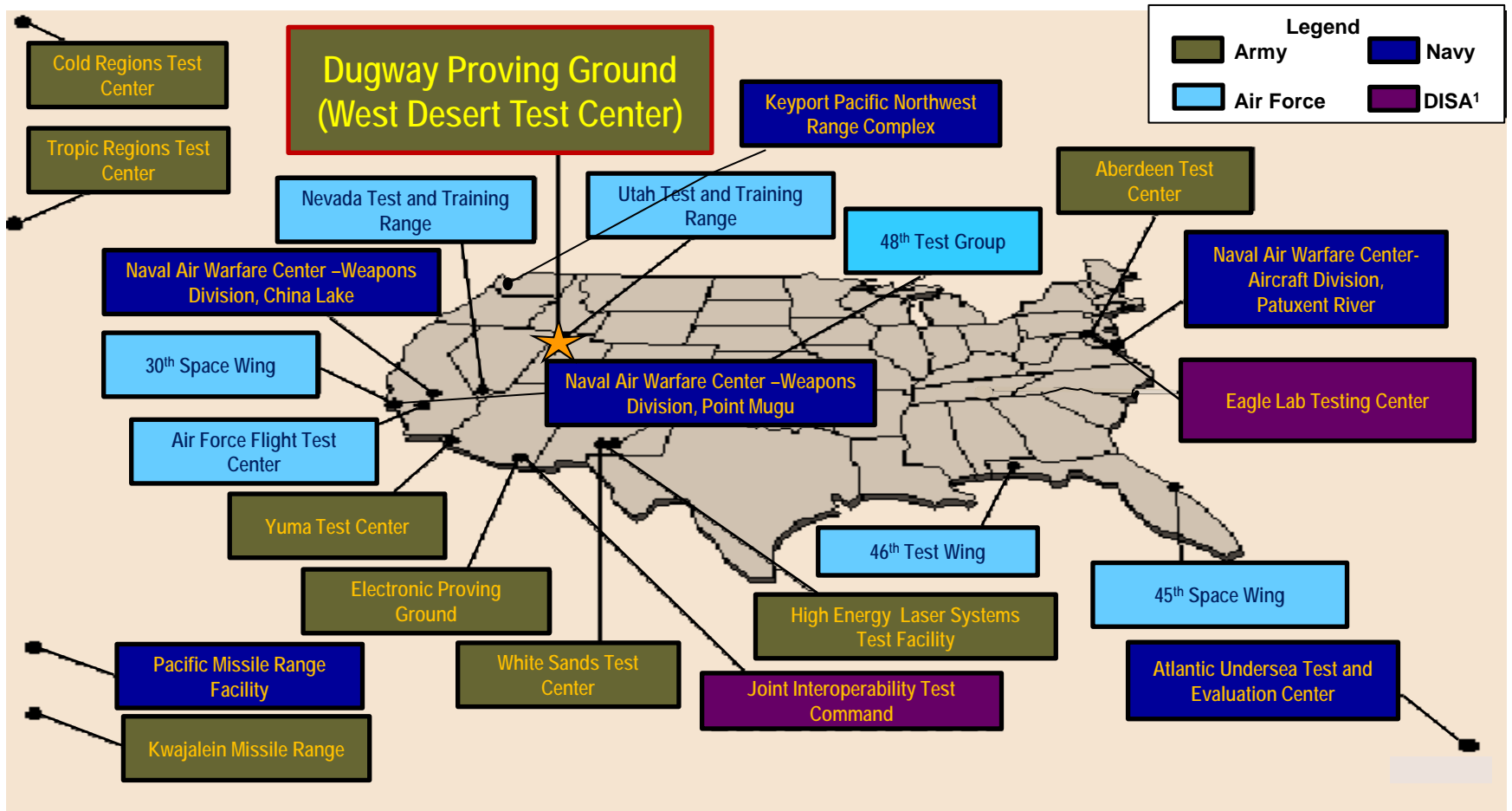
Together these SMEs determine what test methods, test infrastructure needs/requirements, verification and validation status and final test operating procedures should be in each established CAPAT

Each CAPAT has an objective to reach consensus without having to escalate to TECMIPT Chair and governing committee

Goal is to have verified and validated test capabilities prior to any of JPEO-CBRND's acquisition programs of record needing them



# MRTFB Activities



<sup>1</sup>Defense Information Systems Agency





# DPG Becomes Part of the MRTFB



- Attack on Pearl Harbor prompted the formation of Dugway Proving Ground (DPG) by President Roosevelt in 1942
- Established to fill the need for supporting the Chemical Warfare program in WWII
- Became part of the MRTFB in 1971



# West Desert Test Center (WDTC)

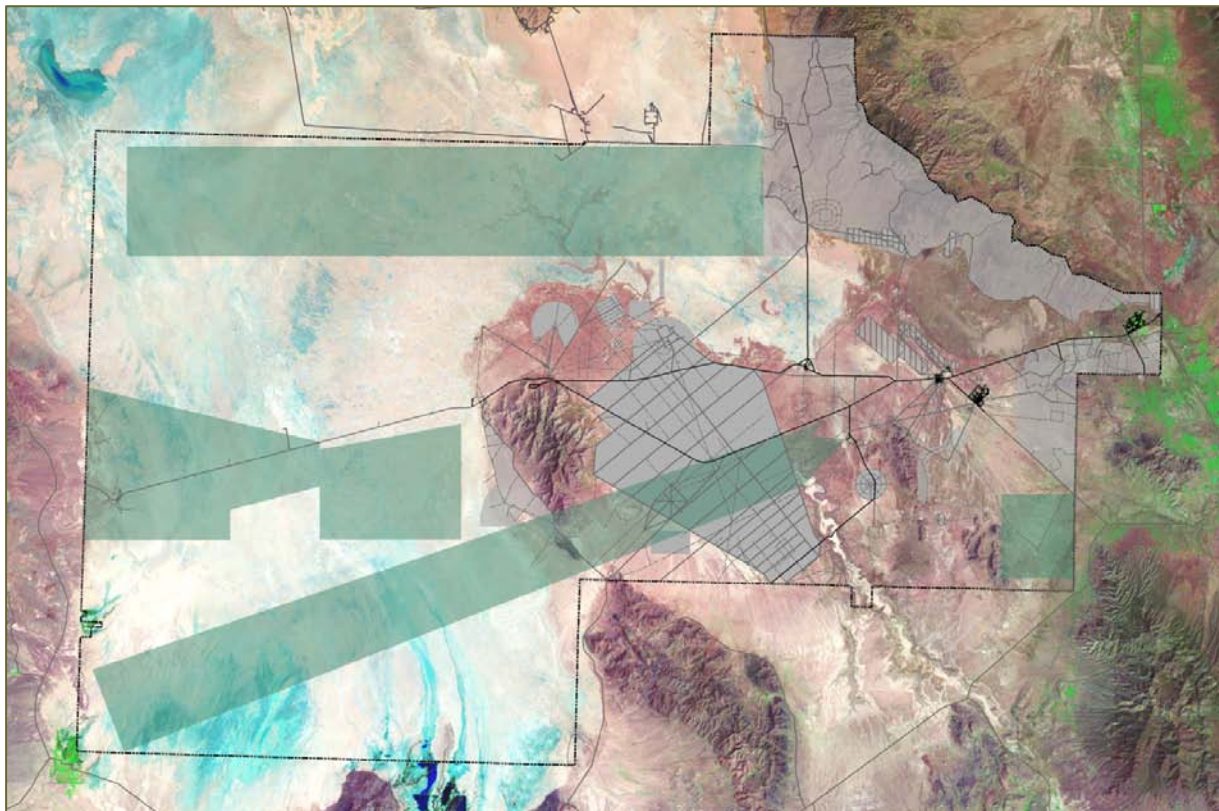
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- WDTC is the mission side of DPG
- Primary mission: testing chemical and biological (CB) defense systems
- Perform nuclear, biological, and chemical (NBC) contamination survivability testing of defense materiel
- State-of-the-art laboratories and chambers
- Extensive field testing grids



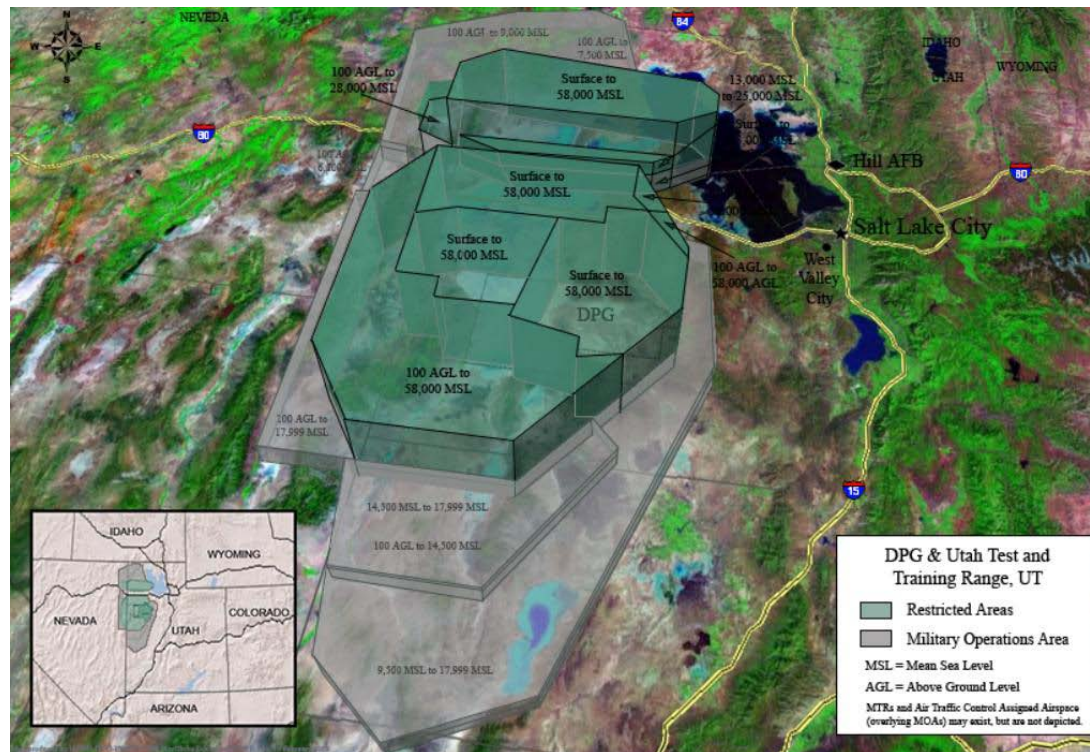
# Terrain

798,214 acres of Great Basin desert terrain ranging from salt flats, to intermittent sand dunes and rugged mountains



# Airspace

Adjacent U.S. Air Force gunnery and bombing ranges extend Dugway's restricted airspace to an area of about 90 x 70 miles and up to an elevation of 58,000 feet



# Newly Validated or Emerging Capabilities at WDTC

- The Advanced Air Purification Test Fixture (AAPTF) used to test large filters and other novel collective protective systems with CWA and TICs,
- Small Item Decontamination (SID) Fixture is used to test new decontaminants on CWA and BWA simulant contaminated small equipment items,
- Dynamic Test Chamber (DTC) will be used to test chemical detection equipment under dynamic test challenge conditions using CWA, TIC and BFCs.
- Individual protective equipment mannequin system (IPEMS) will be used to test individual protective equipment in a CWA or simulant challenge in a realistic environment without exposing individuals.
- Field Test Grid Improvement is being developed to allow the test grid upgraded chemical and biological challenge referee capability under a real time command and control and data collection architecture.
- Whole System Live Agent Testing (WSLAT) is a large (7,112 ft<sup>3</sup>) BSL-3 chamber capable of conducting systems-level test and evaluation.



# Example- AAPTf

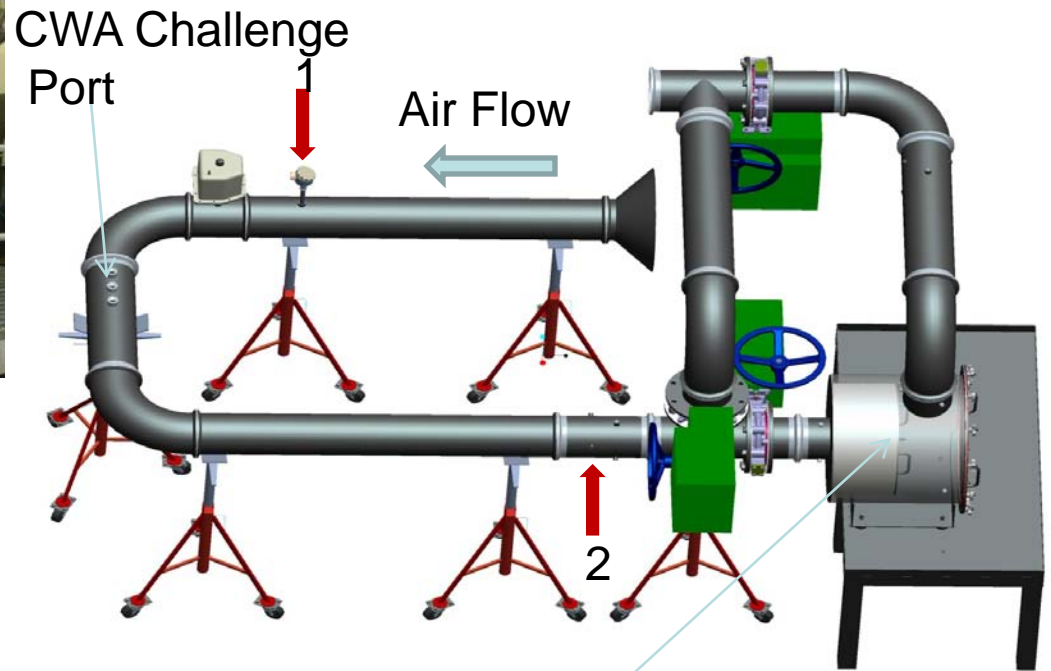
Environmental Chamber



V&V Test Item  
M-98 Filter Set



Fixture Layout



Filter Housing



# Community Accepted Requirements

- Community need (or TECN) is for the test fixture to challenge large filters and emerging collective protection technology with CWA and TICs over a range of operational and environmental conditions.
  - Flows from 20 to 500 CFM
  - Temperature range (0 – 50°C)
  - Relative Humidity (0 – 70%)
  - CWA challenge concentrations from (100 to 2,000 mg/m<sup>3</sup>)
  - CWA: GB, GD, HD, TIC: AC, CK
- Previous to this time, no capability existed to conduct this type of test.



# V&V Plan

- CAPAT endorsed trial matrix
- Matrix was staffed and approved by TECMIPT
- Trial matrix was staffed in the V&V plan at the test center
- Adaptations to matrix were also approved by CAPAT





# V&V Test Results

- Initial results were briefed to CAPAT and several additional trials were added to the V&V matrix based on preliminary results.
- Final results were briefed and approved by CAPAT.
- Based on CAPAT approval of the results a follow-on testing program commenced trials prior to final documentation approval.
- Final V&V documentation is in final comment review.



# Large Filter Study (LFS)

- LFS is testing fielded M-98 and M-48 filters to breakthrough using GB, GD, HD, AC and CK
- Test program has completed all GB and GD testing
- Results to date demonstrate fixture is functioning well and providing validated data for determining filter performance in a CWA environment



# Conclusions, or The Beef!

- Early involvement is key to accomplishing DOT&E initiatives.
- Early involvement allows T&E SMEs to plan, verify, and validate new test infrastructure prior to its use in T&E programs.
- Early involvement minimizes the need to conduct repeat trials or throw out suspect test data.
- Early involvement optimizes understanding of OTA test requirements and use of developmental test data in operational assessments.



# Questions?

Note: Anyone interested in obtaining a copy of the current WDTTC Capabilities Report or is interested in pursuing test services

Please Contact:

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Test Services: [http://www.atec.army.mil/dtc/who\\_dtc\\_is.htm](http://www.atec.army.mil/dtc/who_dtc_is.htm)

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