Modernizing Army Test Range Infrastructure to Support Transformation

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Briefing Outline

- T&E Community
- Army Transformation
- T&E Investment Strategy
- Army Test Resources Master Plan (ATRMP)
- Keys to Supporting Future Combat Systems (FCS)
  - Embedded Instrumentation
  - OASIS
  - Roadway Simulator
  - Land & Sea Vulnerability Test Capability
  - Transportable Range Augmentation and Control System
  - Advanced Multi-Spectral Sensor & Subsystem Test Capabilities
  - Versatile Information Systems Integrated On-Line
- Summary
Primary Test Range Locations

- Yuma Proving Ground
- Electronic Proving Ground
- Tropic Regions Test Center (Hawaii)
- Cold Regions Test Center
- Dugway Proving Ground
- Redstone Technical Test Center
- Aberdeen Test Center
- White Sands Missile Range
- Ronald Reagan Ballistic Missile Defense Test Site (Marshall Islands)
- MRTFBs
- HELSTF
The Army Transformation

...Responsive, Deployable, Agile, Versatile, Lethal, Survivable, Sustainable.
The Army T&E Investment Strategy

The strategy is captured in the Army Test Resources Master Plan (ATRMP).

- Updated annually to support the Army POM development.
- Based on the Army Modernization Plan and Army Science and Technology Master Plan.

VISION:

Shape the Army’s T&E infrastructure by investing in capabilities which support the Army of the future, producing accurate, reliable, and cost effective information for use by decision makers at all levels.

OBJECTIVES:

- Manpower
- Facilities, Ranges, Installations, Tools
  - 21st Century Range
Legacy Capabilities
Sustain or atrophy current capabilities
(FPS-16, film cameras)

New, Advanced, Objective Capabilities
Key to supporting FCS
(Embedded Instrumentation, virtual targets)

Legacy-to-Objective Capabilities
Improvement & Modernization, Upgrades
(MAIS P3I, Instrumentation XXI)

21st Century Range
- Digital & Distributed
- Network Centric
- Data Fusion
- Mission Visualization
- Scene Generation
- Live / Virtual / Constructive Seamless Integration
Key to Supporting FCS and the Objective Force

Pursuing Full Range of Technology Options Thru Collaboration
Hardened Subminiature Telemetry Sensor System

- *tactically* Embedded Test Measurement (ETM)

With a telemetry antenna connected to an Embedded HSTSS Transmitter & Data Acquisition Chipset (DAC) on a tactical GPS card, you need only **ONE** configuration for a munition’s complete life cycle.

**Fulfills** -
- DT/OT
- War reserve
- Training/Live Fire
- Per round telemetry

Embedded Instrumentation makes the “one round solution” a viable option.
OASIS provides the “wrap-around” environment for testing the network-centric systems of tomorrow, providing the information needed for evaluations.

OASIS funding provides the management to ensure future success.

OASIS tools are individually funded, and drawn from all sources through a cohesive plan to provide robust test environments and accurate data collection.
# Major OASIS Tools

## Simulation/Stimulation
- **STORM** - Designed for FBCB2 tests, provides Blue Situational Awareness to the Lower TI
  - Simulation Training Operations Rehearsal Model
- **IMASE** - Designed to provide the threat based multi-spectral environment, provides ISR test capability platform to Corps
  - Intelligence Modeling and Simulation for Evaluations
- **ExCIS-FSA** - Designed for fire support tests, emulates and stimulates Corps level indirect fires
  - Extensible C4I Instrumentation System, Fire Support Application
- **CEES/MFMS** - Designed for ADA system tests
  - C3I Engineering Evaluation System / Mobile Flight Mission Simulator
- **C3 Driver** - Designed for C3 interoperability tests, provides certain communications threads
  - Command, Control, and Communications Driver

## Instrumentation
- **MAIS** - Provides RTCA, Position Location. Serves as the link between Simulations and Live players
  - Mobile Automated Instrumentation System
- **CVII** - “Plug and play” suite of vehicular data recording instrumentation. AV, Data bus, etc.
  - Common Vehicular Instrumentation Initiative
- **ORTCAIS** - Future initiative for “laserless” RTCA based on geometric pairing
  - Objective Real Time Casualty Assessment Instrumentation System
- **IFDC/MFDC/VFDC** - Generational Field Data Collectors. Major component of CVII
  - Improved, Mobile, and Vehicle Field Data Collectors
Roadway Simulator

A precisely controlled, systematic test capability for military wheeled vehicle performance and safety testing. Will substantially strengthen the T&E community’s ability to impact early design, reduce test costs, extend test envelopes, extend analysis, generate repeatable data, and avoid repeated testing.
The objective of the Land Sea Vulnerability Test Capability (LSVTC) project is to provide a versatile and integrated complex of test ranges and instrumentation that will enable accurate measurement and analysis of the vulnerability of military systems, subsystems, and components to projected damage effects caused by threat weapons. It will also facilitate determining the lethality of certain high speed underwater munitions, various types of sea and land mines, and air- or ground-launched munitions against actual or surrogate threat targets.
TRACS is a self contained transportable range control system supporting test mission planning, execution, real time data collection/processing, mission control, flight safety, data processing and post mission data analysis of ballistic missile testing. Primary sources for data include: radar, optics, telemetry, GPS, range safety parameters, target control & virtual environments.
Element I: Multi-Spectral Facility
A Multi-Spectral test capability will be developed to test seeker and AUR level MMW/IR/Laser Sensors in a HWIL environment.

Element II: MMW Range Characterization
Virtual Range currently replicates IR and visible spectrums, AMSSTC will add the MMW spectrum.

Element III: Distributed Testing/Networking
Distributed testing of subsystems will be enhanced to link the AMSSTC capabilities, existing RTTC capabilities, and other agency capabilities.
Advanced Multi-Spectral Sensor & Subsystem Test Capabilities (AMSSTC)

Element IV: EO Sensor Lab Testing
Dynamic combined environmental effects testing will be developed with links to subsystem HWIL capabilities

Element V: Combined Environments
Electro-Optics subsystem testing will be enhanced for LWIR, MWIR, Visible, and ELRF applications
The primary goal of VISION is to collect and integrate data across test centers, and provide a common web-based user interface.
SUMMARY

- The World and the Threats we face will continually evolve.

- ATRMP
  - Vision and Strategy Supports Test Range Modernization and the Transformation Campaign (FCS).


- Our Test Range Infrastructure resources are targeted to support tomorrow’s dynamic military force--one that is: “Responsive, Deployable, Agile, Versatile, Lethal, Survivable, Sustainable.”