



The DoD T&E/S&T Program

George Rumford
Program Manager

**Test Resource Management Center
Test & Evaluation / Science & Technology Program
(TRMC, T&E/S&T)**

NDIA 11TH Annual Science & Engineering Technology Conference



Test Resource Management Center (TRMC)



- **DoD Field Activity**
- **Direct Report to USD(AT&L)**

☆☆☆ SES Director

Oversee Test Infrastructure

Major Range & Test Facility
Base (MRTFB)
Other T&E Facilities
Within & Outside DoD

Develop T&E Strategic Plan

Biennial 10-Year
Strategic Plan for
DoD T&E Resources

Administer Corporate T&E Investment Programs

Centrally-Funded T&E
Investment Programs
(T&E/S&T, CTEIP, JMETC)

Certify T&E Budgets

Annual Certification of
Military Departments &
Defense Agencies T&E
Budgets



The STEWARD of the DoD Test Infrastructure

Major Range and Test Facility Base (MRTFB): The "Critical Core"

24 Sites: Army-9; Navy-6; Air Force-7; Defense Agency-2



30,000 personnel
Military, Gov, Contractor

18,000 sq. mi. of land
180,000 sq. mi. of air space
(> 1/2 of all DoD land)

Replacement Value = \$25B

DoD Directive 3200.11



Cold Region Test Center, AK

Keyport

China Lake

30th Space Wing

Point Mugu

Air Force Flight Test Center

Yuma

Tropic Region Test Center, HI & Puerto Rico

PMRF

U.S Army Kwajalein Atoll

Nevada Test and Training Range

Utah Test and Training Range

West Desert Test Center

Electronic Proving Ground

High Energy Laser Systems Test Facility

DISA, JITC

White Sands Test Center

46th Test Wing (Includes 46th Test Group)

DISA, NCR

Aberdeen Test Center

Naval Air Warfare Center-Aircraft Division

Arnold Engineering Development Center

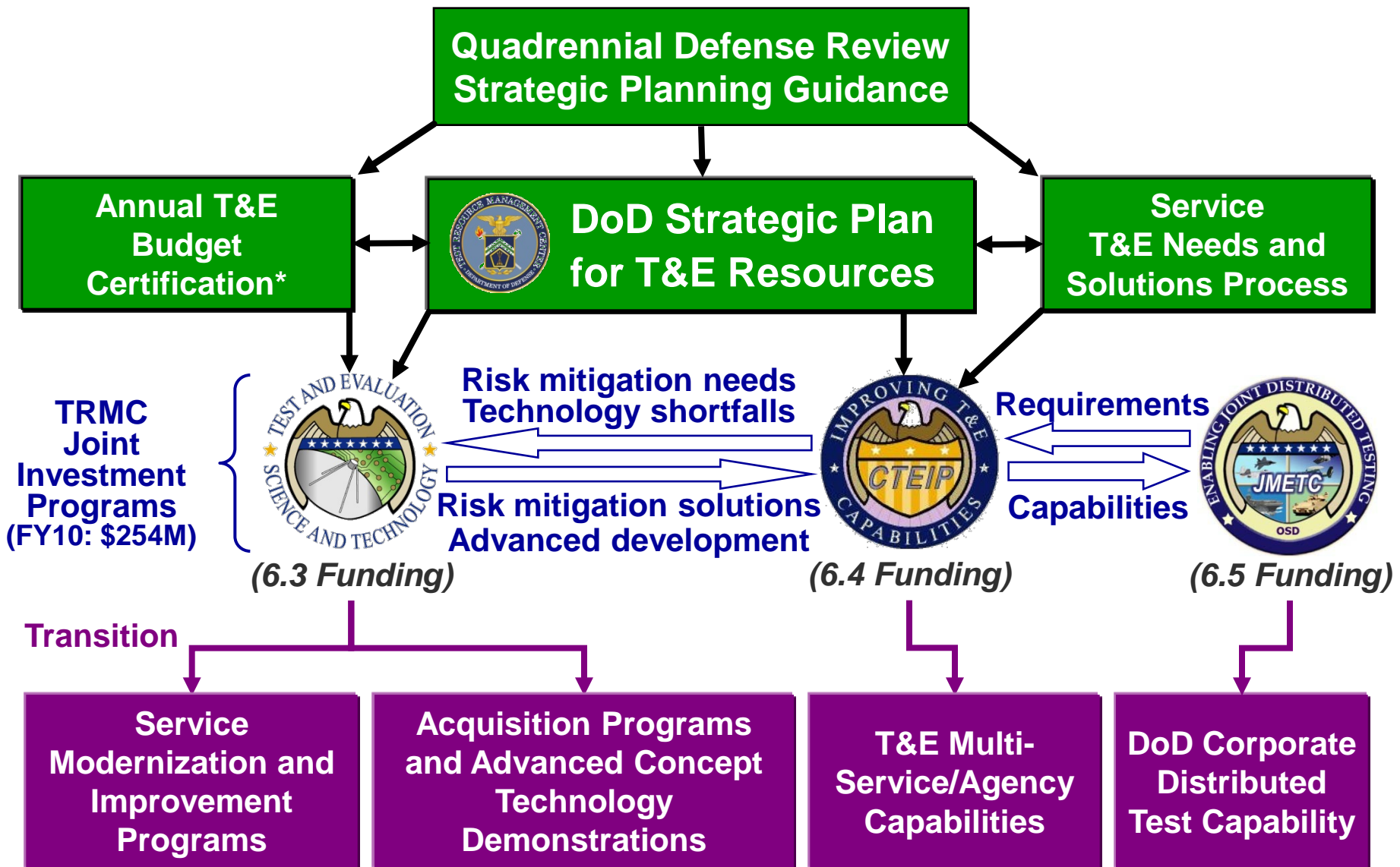
45th Space Wing

Atlantic Undersea Test and Evaluation Center

Legend:
Army, Navy, AF, Defense Agency



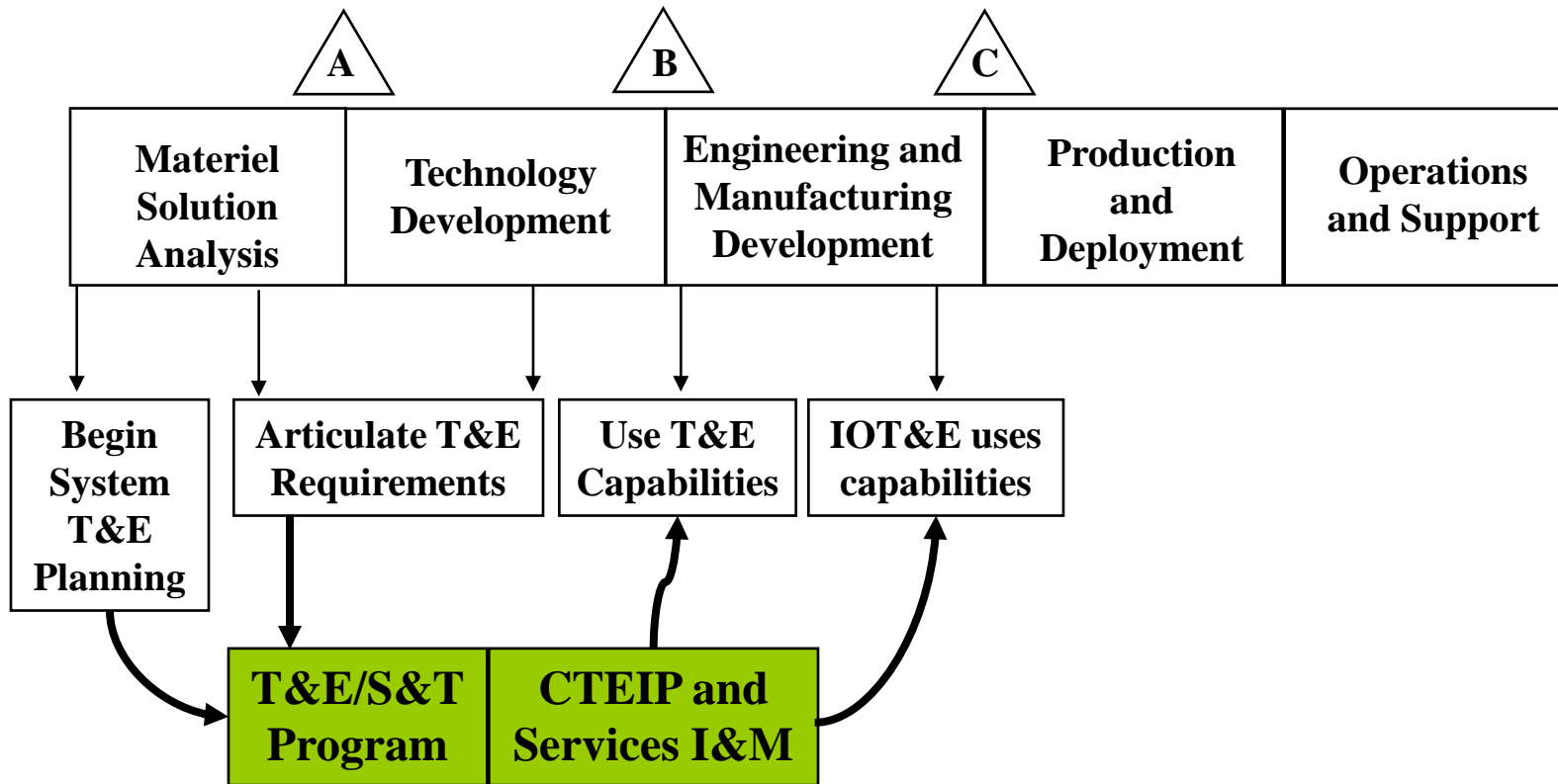
Synergy through Aligned Investment





T&E Capability Development Cycle

Challenge: T&E Capabilities are available in time to provide useful insight to decision-makers and warfighters



Cycle for Test Capability Development Must Begin Early



T&E/S&T Program Overview

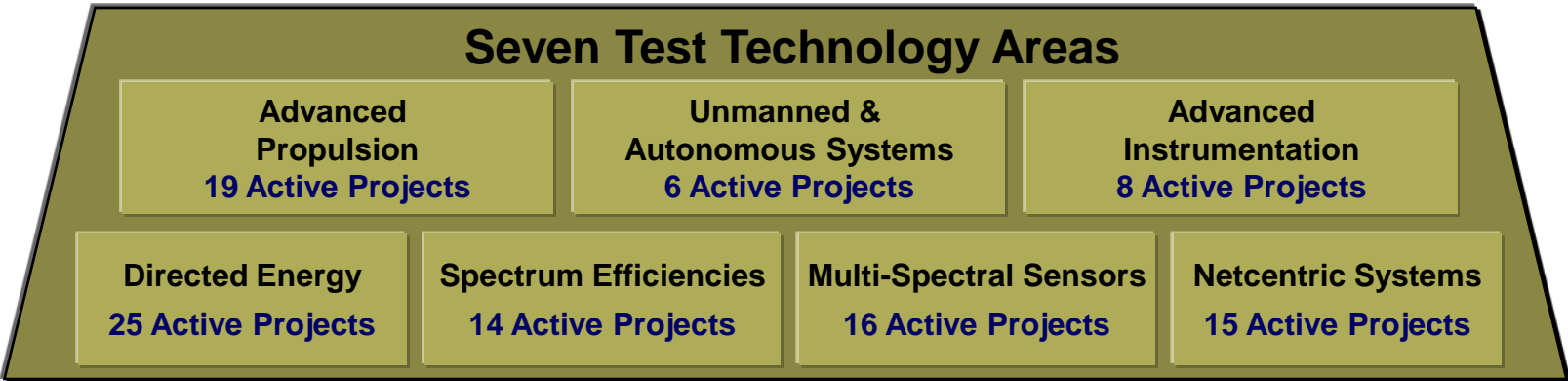


Mission: Develop Technologies Required to Test Future Warfighting Capabilities

- Established in FY02
 - Joint DDR&E / DOT&E Initiative
 - Transitioned to TRMC in FY05
- RDT&E Budget Activity 3 funds
- Purpose
 - High Risk / High Payoff R&D for Testing
 - Foster technology transition to major DoD test ranges
 - Risk reduction for test capabilities developments

103 Active Projects

- Annual Broad Agency Announcements (BAAs)
 - Academia
 - Industry
 - Government Laboratories
- Tri-Service working groups
 - Validate requirements
 - Evaluate proposals
 - Facilitate technology transition
- Central Oversight – Distributed Execution

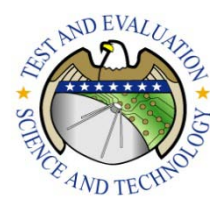


FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
\$92.5M	\$95.7M	\$97.6M	\$99.7M	\$102.4M	\$103.9M	\$105.6M

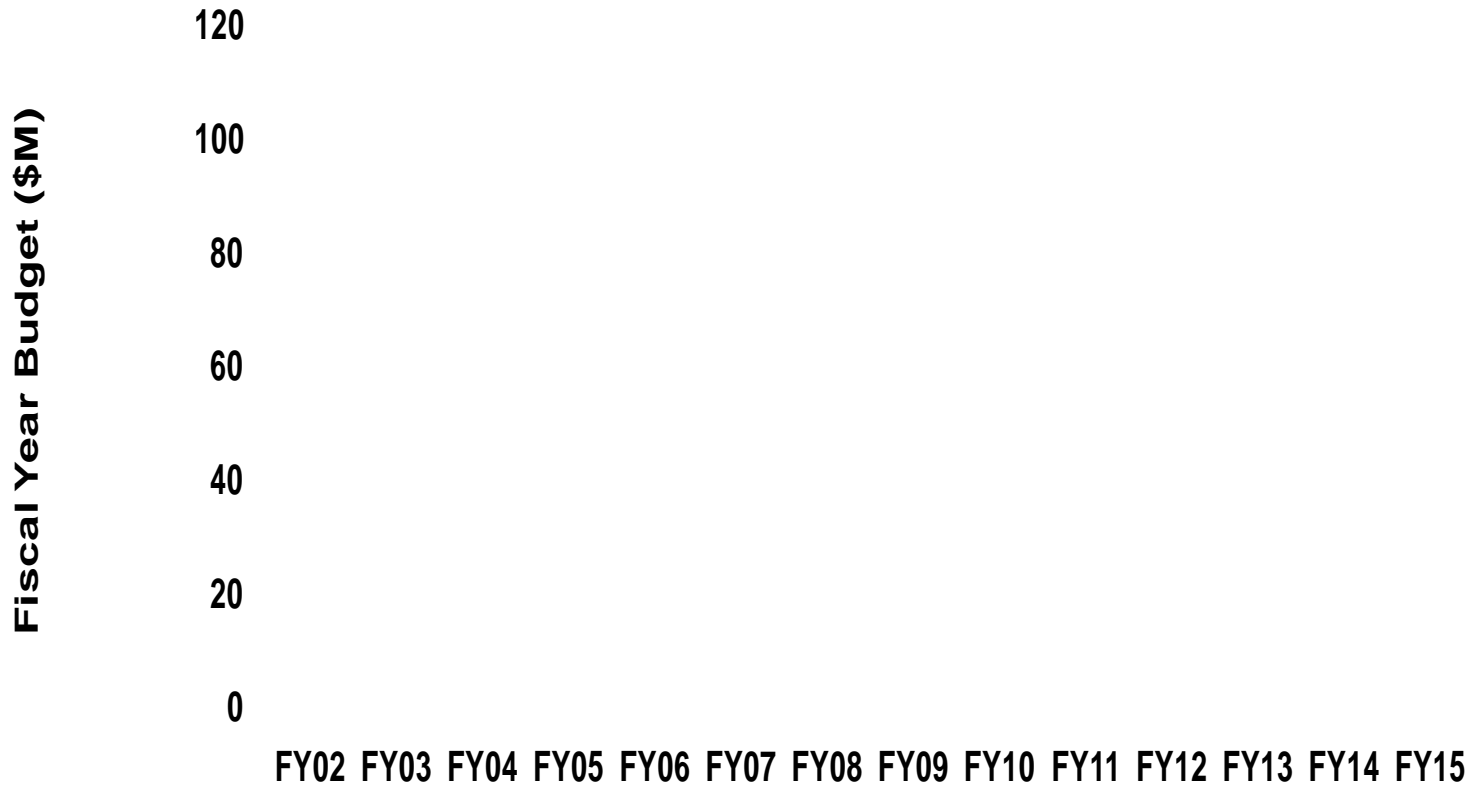
Shaping Technology into Tomorrow's T&E Capabilities



T&E/S&T Program Annual Budget Historical (FY02) to Future Projection (FY15)

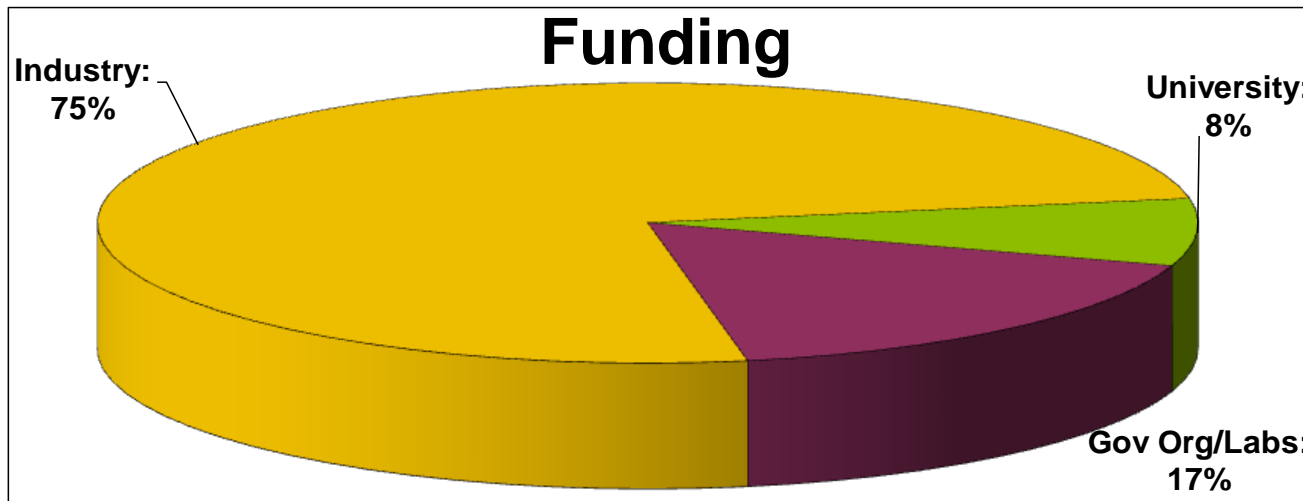
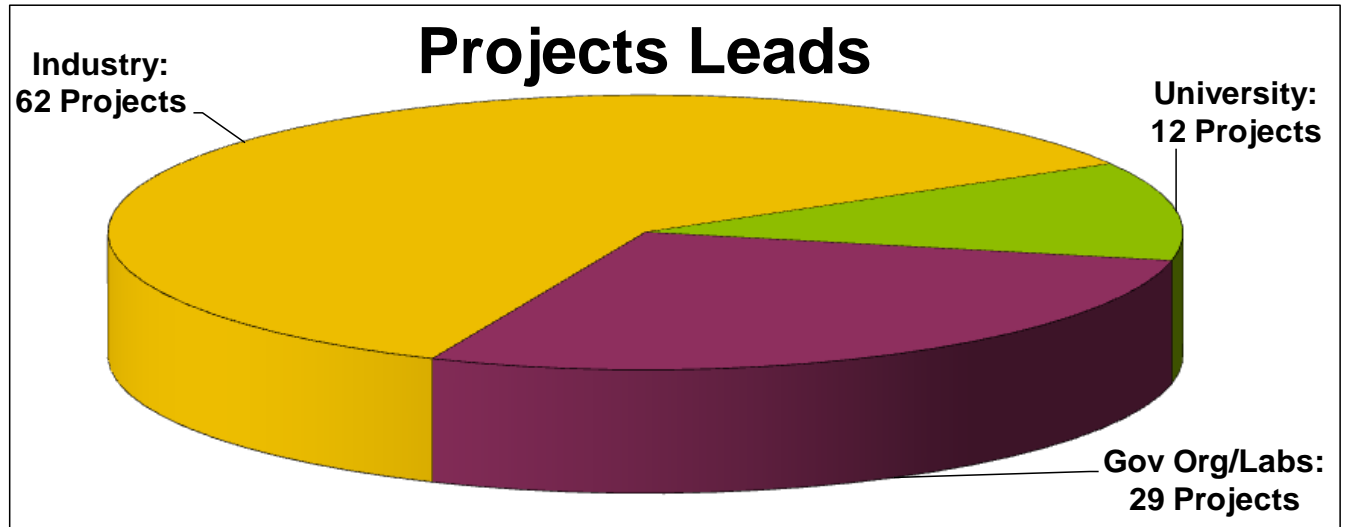


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FY 2010 T&E/S&T Program Distribution





T&E/S&T Program Test Technology Areas



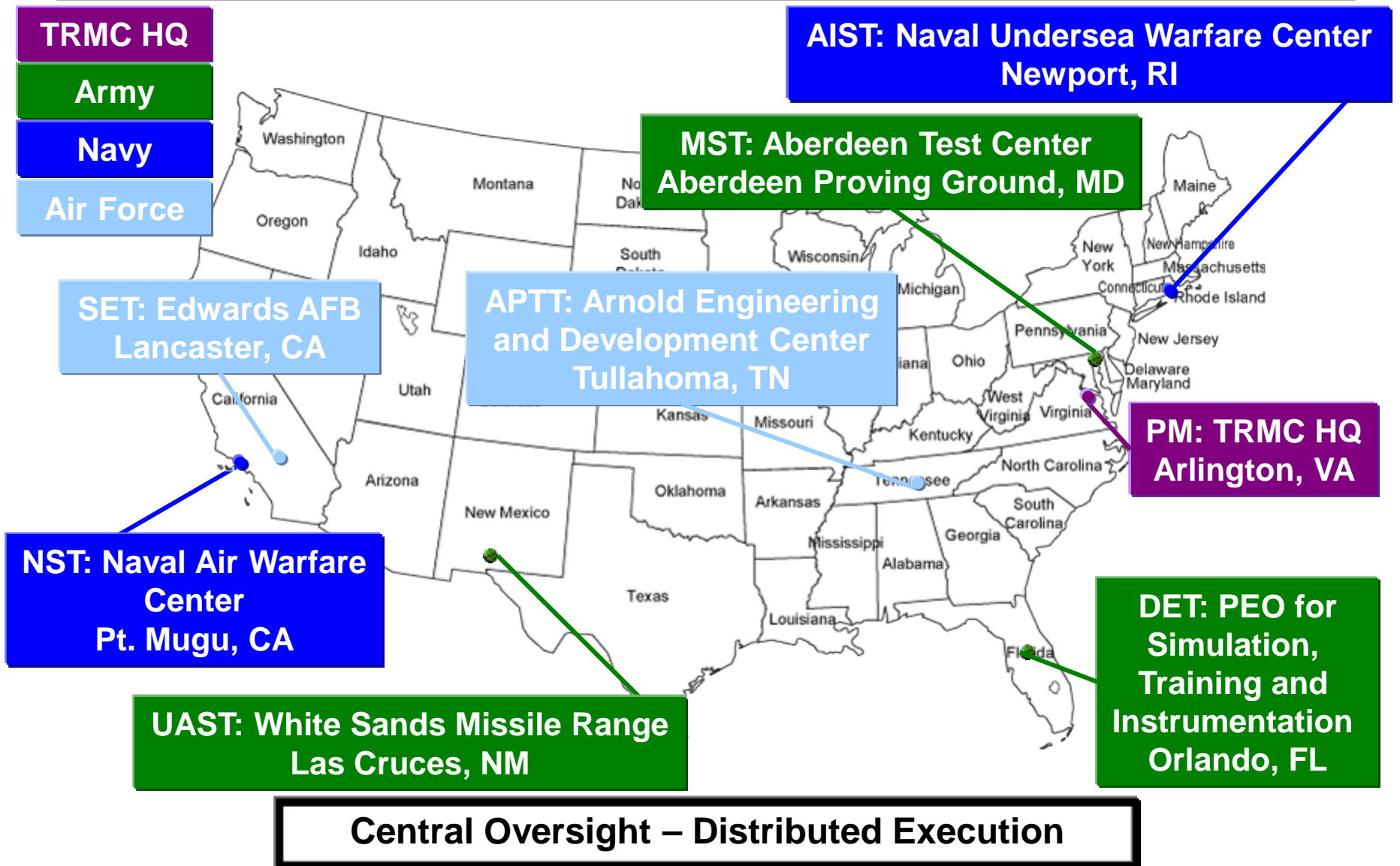
Test Technologies for:

- **Emerging Warfighting Capabilities**
 - Directed Energy Weapons (DET)
 - Hypersonic Vehicles (APTT)
 - Multi-Spectral/Hyperspectral Sensors (MST)
 - Netcentric Warfare Systems (NST)
 - Unmanned and Autonomous Systems (UAST)
- **Enhanced Test Capabilities**
 - Non-Intrusive Instrumentation (AIST)
 - Spectrum Efficient Technology (SET)

103 Active Projects



T&E/S&T Program Management





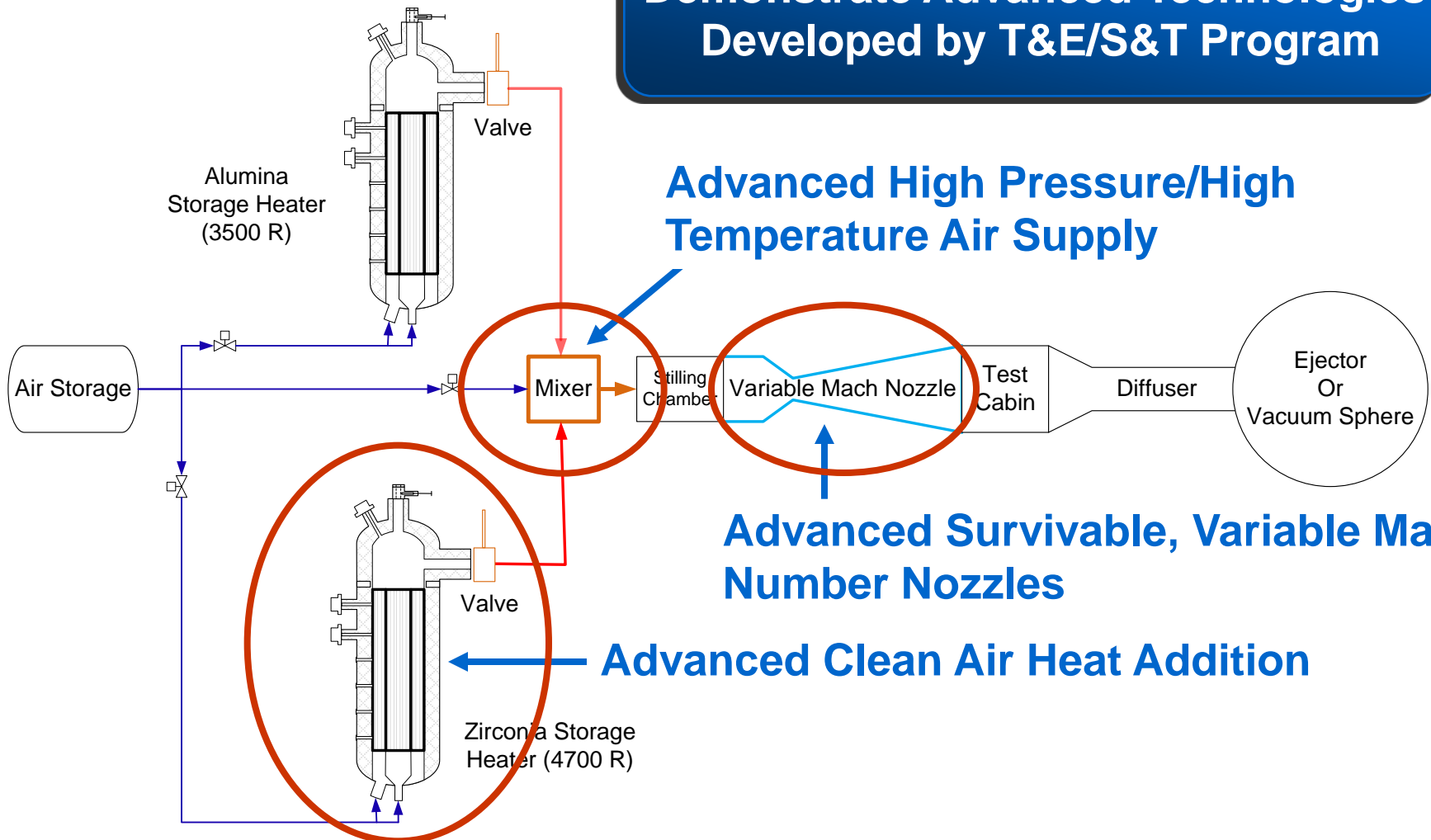
Improving Testing of Advanced Propulsion Systems

Demonstrate Advanced Technologies Developed by T&E/S&T Program

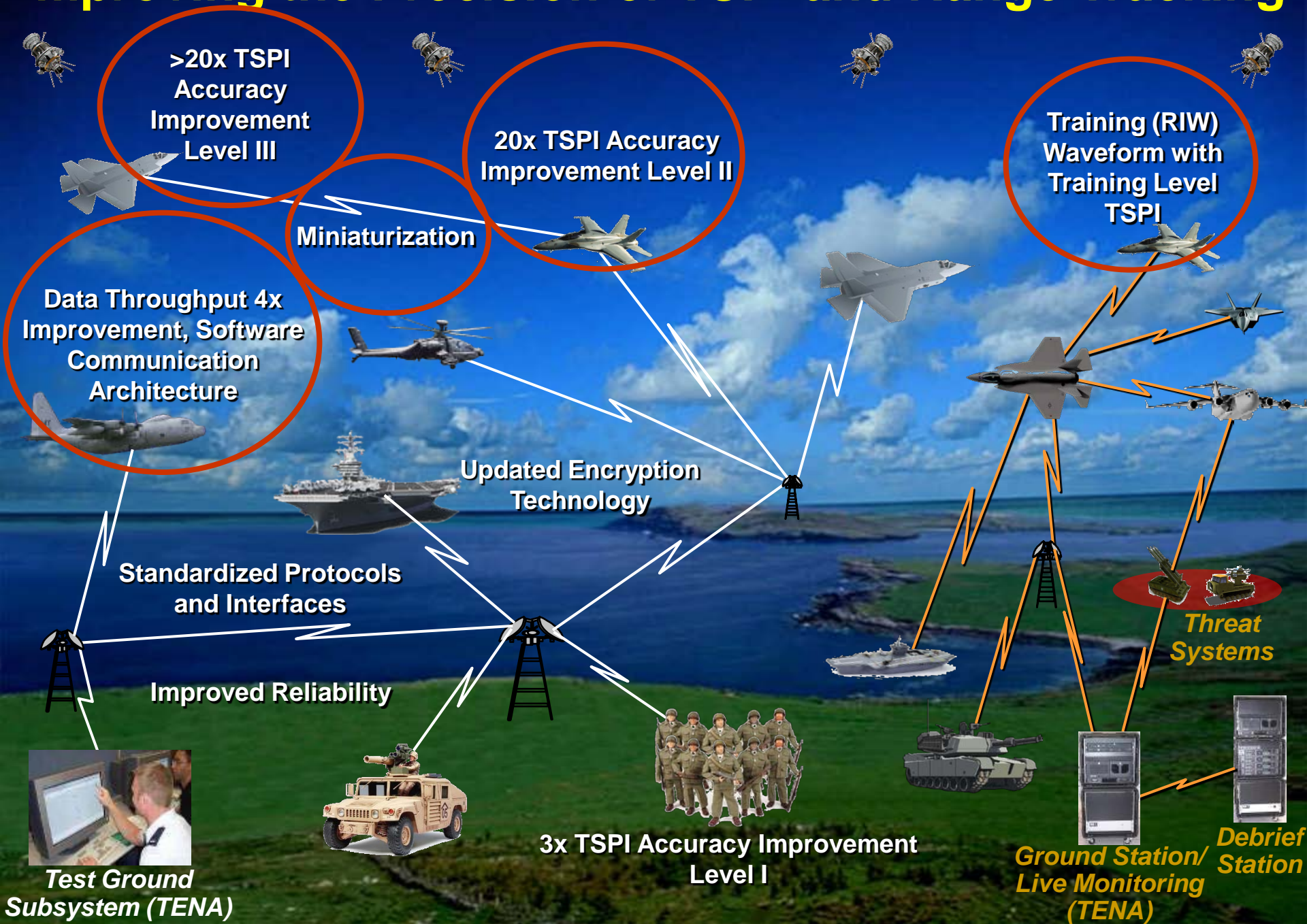
Advanced High Pressure/High Temperature Air Supply

Advanced Survivable, Variable Mach Number Nozzles

Advanced Clean Air Heat Addition



Improving the Precision of TSPI and Range Tracking

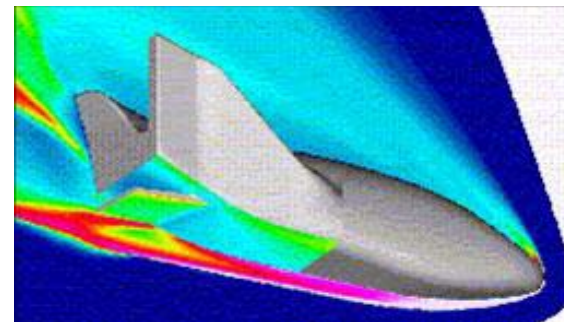




Next Generation TSPI (NG-TSPI) Study



- **NG-TSPI is needed to face emerging challenges for TSPI instrumentation**
 - Test operations in GPS-denied environments (urban, caves, dense foliage, undersea)
 - Large-scale System-of-Systems environments
 - Hypersonic vehicles in a plasma field
 - Low Observable (LO) Systems that can not mount external instrumentation
 - Micro autonomous systems





Improving Testing of Undersea Systems in a Realistic Operational Environment



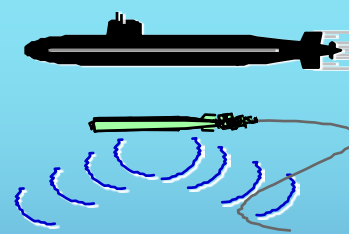
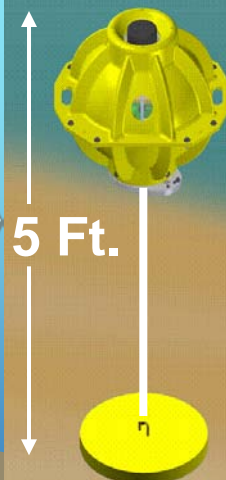
Needs: Provide submarine undersea tracking during test events - without sub needing to ping!

DARPA-developed chip scale atomic clock

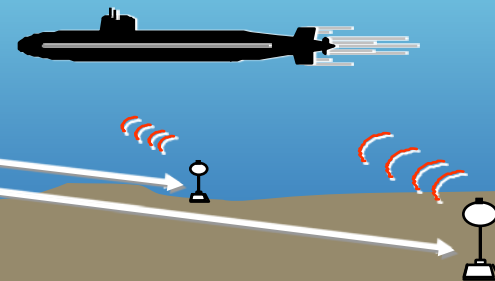
Key issues: Maintain clock accuracy, operate week+ without update



Insertion into undersea pingers



Highly accurate track is displayed in real-time on board the tracked submarine

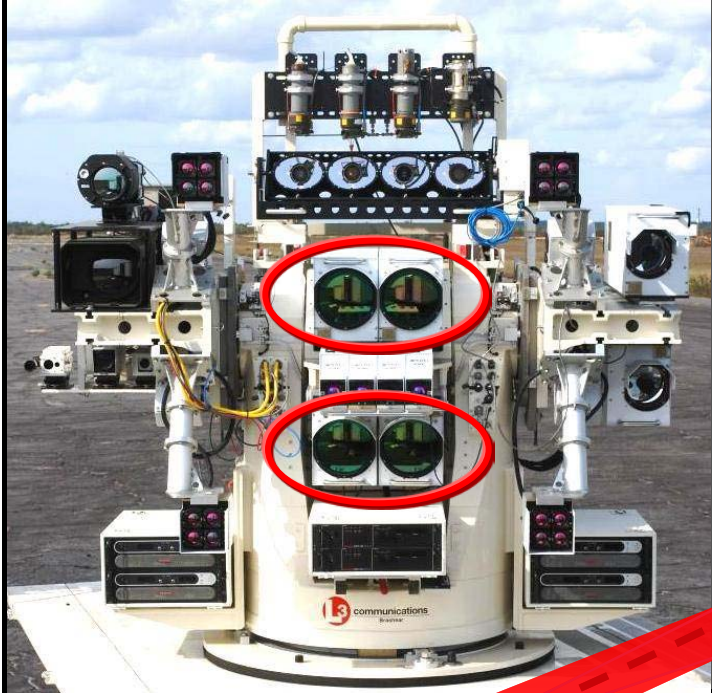


T&E/S&T – CTEIP transfer: Providing critical test needs, validate crucial warfighting systems

OT for Common Broadband Advanced Sonar System (CBASS) Torpedo

Improving Testing of IRCM Systems

JMITS “paints” UV & IR signatures on IRCM systems and characterizes laser and flare countermeasures



Both Units Delivered Directly to Test

Eglin AFB (DoN LAIRCM Testing on Navy CH-46)

China Lake (LAIRCM Testing on AFSOC CV-22)

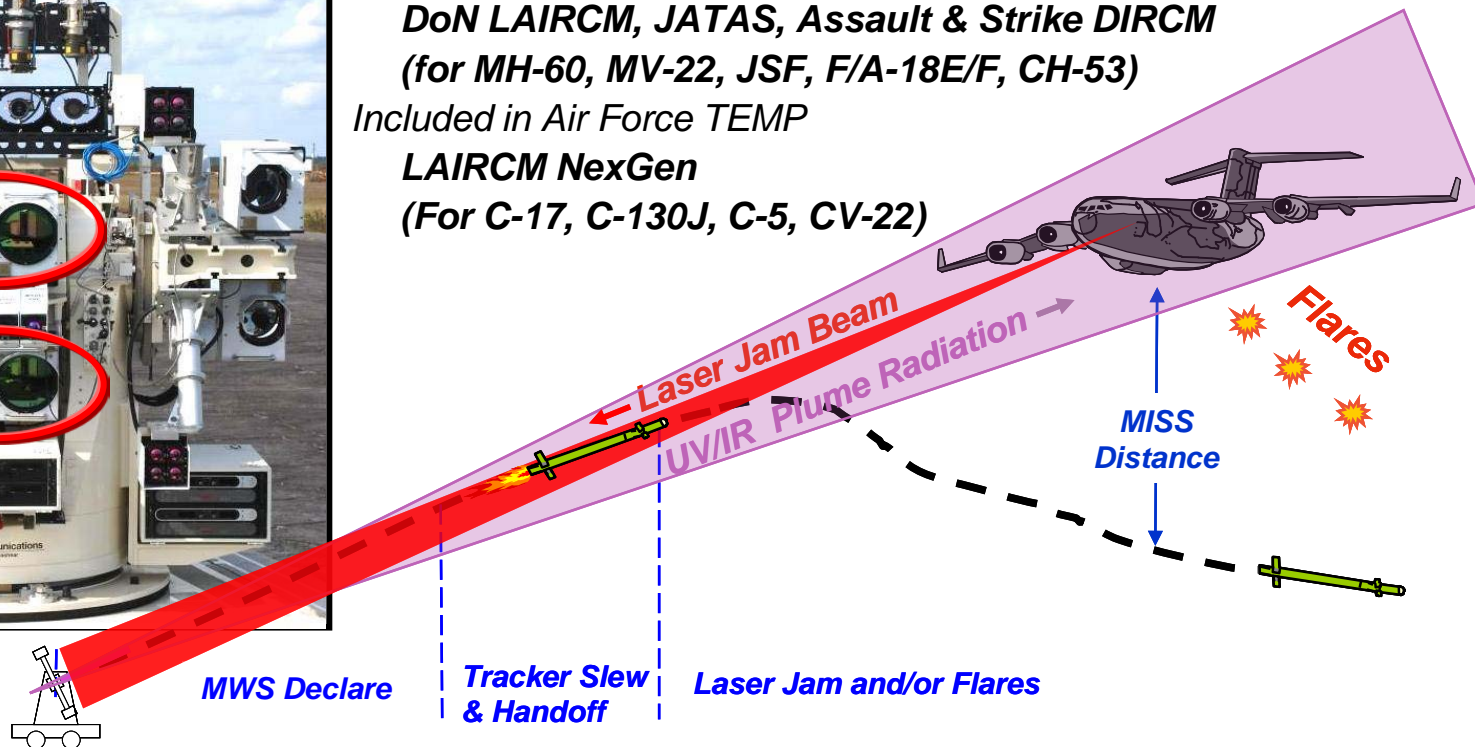
Included in Navy TEMP

**DoN LAIRCM, JATAS, Assault & Strike DIRCM
(for MH-60, MV-22, JSF, F/A-18E/F, CH-53)**

Included in Air Force TEMP

LAIRCM NexGen

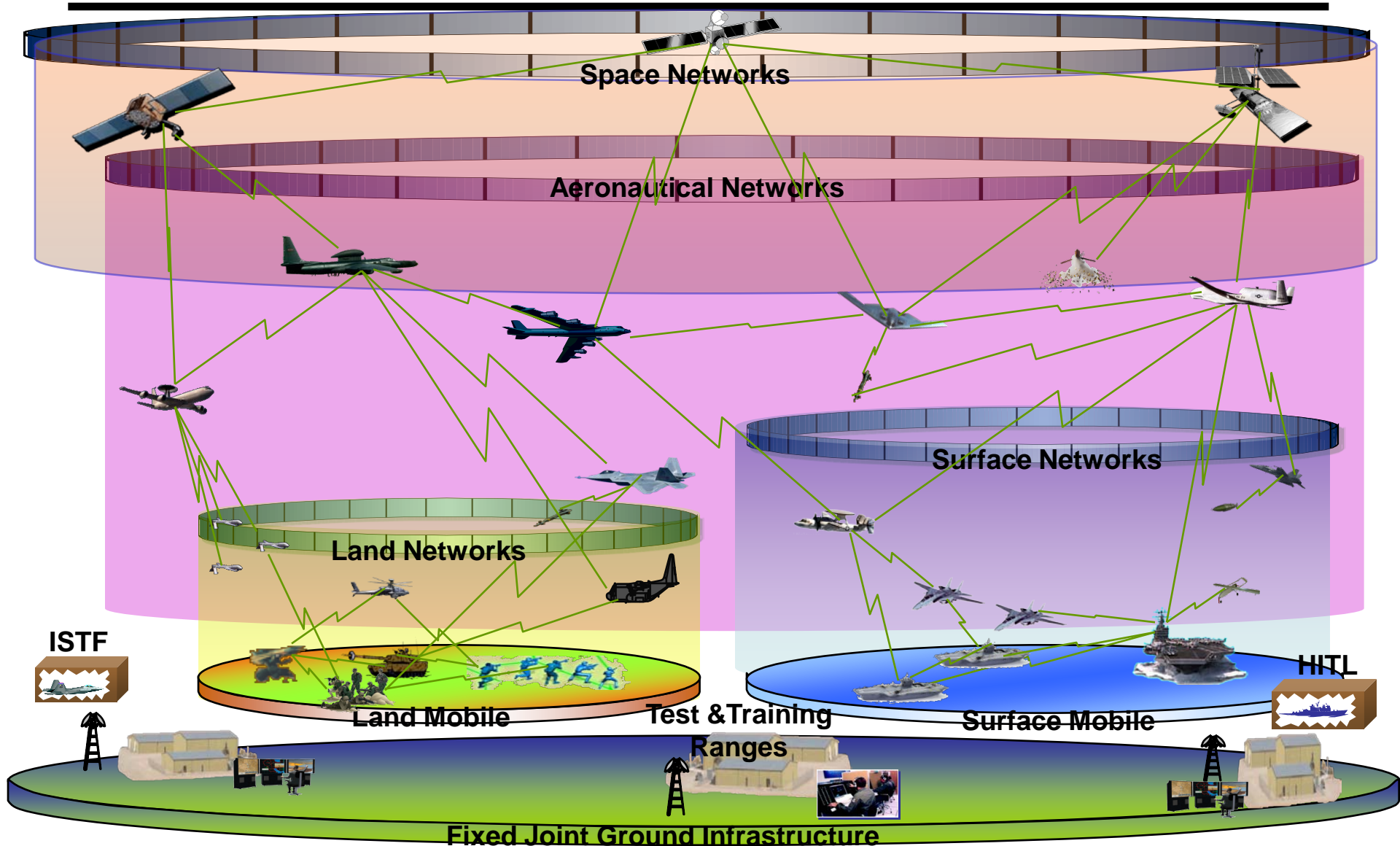
(For C-17, C-130J, C-5, CV-22)



Required T&E/S&T Development for Higher Power Continuous Wave Infrared Sources

- To simulate long range shots within MANPAD operational envelopes
- To simulate longer range RF SAMs during multi-spectral testing (RF & IR)
- Two Colors (IR-Red & IR-Blue)

Improving Real-time Data Throughput Across the Test Environment





T&E/S&T Program Project Selection Process



Drivers



<http://www.fedbizopps.gov/> → Search for “TRMC”

Solicitations are issued through
<http://www.fedbizopps.gov>

Tri-Service Test Technology Area Working Groups

- Executing Agent
- T&E Community Reps
- S&T Community Reps
- Subject Matter Experts

Needs/Requirements

Solicitations

PROGRAM RESEARCH AND DEVELOPMENT
OFFICE (PRADO)
DEFENSE SCIENCE AND TECHNOLOGY
TEST AND EVALUATION
DATED: 4 JULY 2010
Project Manager: Mr. Paul Oringer
Contracting Officer: Mr. David Wilson

April – May

White Papers

Embedded Instrumentation for Test and Evaluation
Technology Solution for EI
Submitted To: AFTC/RKD
In Response to BAA-000-04-C-1PXD
Submitted by:
Company XYZ
University of ABC
QRS Laboratory
Anywhere, USA 12345

May – June

Proposals

Embedded Instrumentation for Test and Evaluation
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July – August



Program Manager

Final Selections

September

Executing Agent

Recommendations

Source Selection Evaluation Team

- Working Group
- Subject Matter Expert
- Contracting Reps

August

Funding Decision



The Proposal — Key Criteria



- **Meets a T&E Need**
- **Requires S&T work**
- **High Payoff**
- **Broad application (more than one DoD test activity)**
- **High potential for transition to development of a test capability**



T&E/S&T Program Summary



- **T&E/S&T Program initiated to address critical T&E needs tied to S&T drivers**
 - Advancing the state of the art in T&E technologies
- **The only DoD S&T program dedicated to T&E**
- **Annual Call to Industry, Academia, and Government Laboratories to address test capability needs**
- **Competitive technology developments to get the best technologies possible to the test community**
- **Focused on transition**

Looking Ahead, Responsive, and Agile



Questions?



**Please stop by our booth in
the exhibit hall**

Contact Information:

Mr. George Rumford

**Test Resource Management Center
T&E / S&T Program**

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