Systems Engineering and Biometrics: 2012 DoD Strategic Plan for T&E Resources

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Discussion

- Strategic Plan Law and Guidance
- Inputs to and Outputs of the Strategic Plan
- Strategic Plan Systems Engineering Approach
- Domain and Focus Area Analysis Teams
- 2010 Strategic Plan & Biometrics T&E Needs
- 2012 Strategic Plan & the future of Biometrics T&E

Strategic Planning Legal Mandate

U.S. Code, Title 10, Section 196 (d)

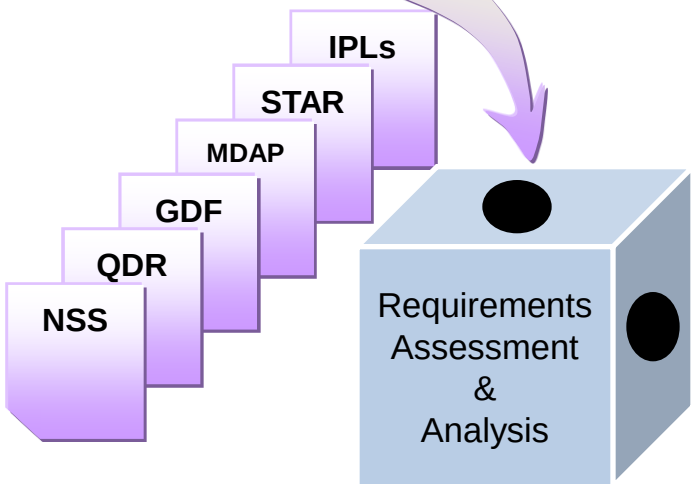
"…**The strategic plan shall be based on a comprehensive review of the test and evaluation requirements** of the Department and the adequacy of the test and evaluation facilities and resources of the Department to meet those requirements…."

Six statutory requirements:

(1) An assessment of the T&E requirements of the Department for the period covered by the plan.
(2) An identification of performance measures associated with the successful achievement of T&E objectives for the period covered by the plan.
(3) An assessment of the T&E facilities and resources that will be needed to meet such requirements and satisfy such performance measures.
(4) An assessment of the current state of the T&E facilities and resources of the Department.
(5) An itemization of acquisitions, upgrades, and improvements necessary to ensure that the T&E facilities and resources of the Department are adequate to meet such requirements and satisfy such performance measures.
(6) An assessment of the budgetary resources necessary to implement such acquisitions, upgrades, and improvements.

Inputs to and Outputs of Strategic Plan

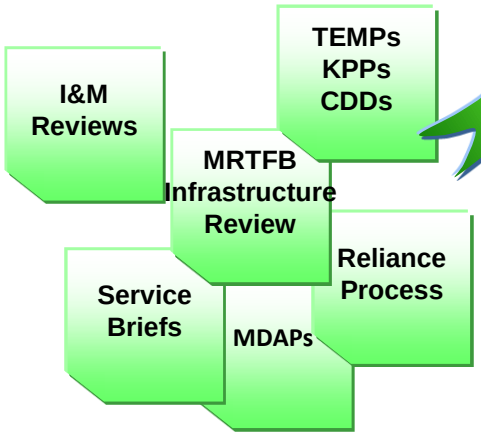
Top-Down Inputs



Strategic Plan

T&E Capability Needs:
- ✓ T&E Facilities
- ✓ T&E Workforce
- ✓ T&E Investments

Bottom-up Inputs



Outputs

Inform Congress for Appropriations and Legislation

T&E Operations and Investments

T&E Budget Certification

T&E Investments

Strategic Plan Systems Engineering Approach

Institutionalize approach establishing a standard to link:

Warfighter requirement needs → testing → back to mission capability

Stakeholder & Interests

OSD, Executive, DIA, S&T	AT&L, COCOMs	DT&E, DOT&E, Experts	SE, MDAP, T&E Users	Services, OMB, CAPE, Congress
What are the emerging trends and threats?	What are the capability requirements and warfighter needs?	What tests are needed given likely missions and future demands?	What resources and facilities are required to facilitate T&E?	What investments are being made to fulfill resource demands?

Global Context & Challenges
Threats & Trends
Strategic Objectives
Complex Operating Environments

↔

Warfighter Missions / Needs
Technology Development (ACTD)
Acquisition

↔

T&E Capability Requirements
Current (available) vs. Future Need (for current acquisition programs and future warfighter needs)

↔

T&E Resource Enablers
Funding
Infrastructure
Skill sets
Processes

↔

Programs & Investments
T&E S&T
Service POM
CTEIP

Systematically Map End-to-End

Strategic Plan Systems Engineering Approach

Translating Statute into Process

Legal Requirements of Statute

Comprehensive Review	Assessment of primary DoD T&E Requirements	Assessment of T&E facilities and resources	Itemize upgrades and improvements	Assessment of budgetary resources
Review MDAPS and National-level priorities; Assess for impacts to DoD T&E	***What are the primary DoD T&E requirements?***	***What is the current state of DoD T&E Infrastructure?***	***What facilities and resources are needed to meet T&E requirements?***	***What investments are needed to fulfill resource demands?***
Strategic Planning Goal 1: Research Areas and Working Group Outreach	**Strategic Planning Goal 2:** Identify DoD T&E Requirements	**Strategic Planning Goal 3:** Review current T&E Infrastructure	**Strategic Planning Goal 4:** Identify T&E Capability Needs	**Strategic Planning Goal 5:** Provide Recommended Actions

Systematically Map End-to-End

Diverse Applications for Biometrics

U.S. Army Pfc. Joshua Tweet, left, with Comanche Troop, 1st Squadron, 91st Cavalry Regiment, 173rd Airborne Brigade Combat Team, fingerprints villagers in Manghokhel village, Kherwar district, Logar province, Afghanistan, Oct. 8, 2010. The Soldiers delivered and assembled a swing set at the village school. (U.S. Army photo by Sgt. Sean P. Casey/Released)

Ops

T&E

- Biometrics Operations
- Biometrics Enabled Intelligence
- Expeditionary Forensics
- Supporting Human Systems
- Supporting Characterization of the *Environment*

DoD Biometrics Community

AT&L
USD (AT&L), Milestone Decision Authority

DOT&E

USD (P)

USD (I)
Biometrics Enabled Intelligence PSA

CIO

Joint Staff (J3/J8)

ASD R&E PSA
Chair Biometrics EXCOM
Director, Defense Biometrics

DIA
Executive Agent, Biometrics Enabled Intelligence

DISA

J34 Deputy Directorate for Antiterrorism and Homeland Defense

JITC
Joint Interoperability Test Certification on IT/NS Systems

J8 Acquisition

SOCOM

Army G3,
Executive Agent, Biometric Operations

Biometrics Identity Management Agency (BIMA), Executive Manager

OPNAV N3/5

ATEC

DUSA TE

PM Army
(PM DoD Biometrics under PEO-EIS)

PM Navy Identity Management Capability

N091

Forensics - Navy Identity Dominance System (IDS)

TRMC/DT&E

PM DoD Biometrics T&E WIPT serves as the primary working group for T&E input to the Strategic Plan

USG Partners

STATE
US IDENT

DHS
ARPA

DOJ

U.S. Coast Guard
Biometric Operations

FBI
Biometrics Center of Excellence (CJIS)

Foreign Government Partners

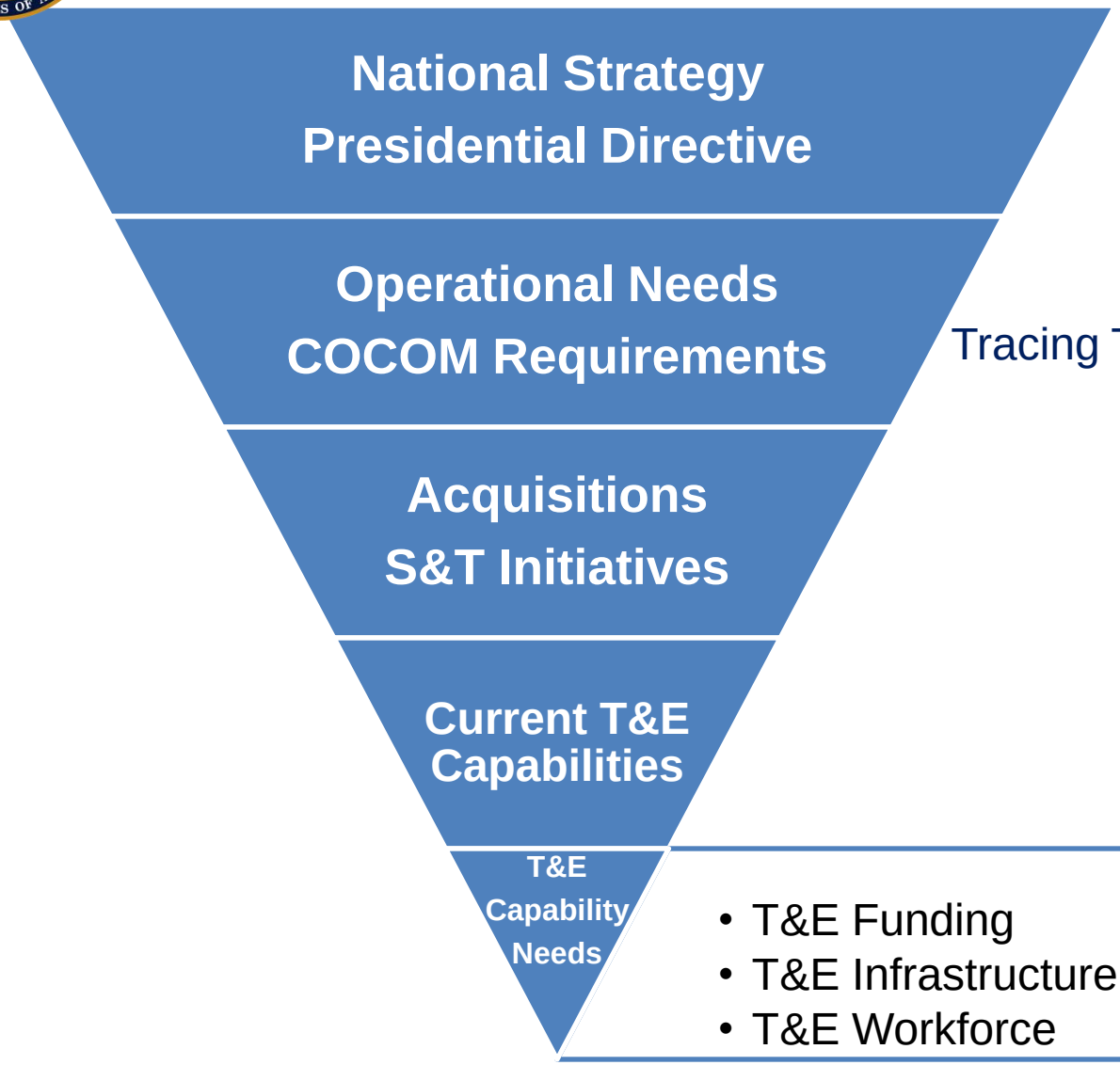
Canada
Ministry of Defense
Yves Levesque

ISAF
ABIS

U.S.
DoD ABIS

Strategic Planning Analysis Teams

Domain and Focus Areas	DoD Analysis Teams
Air, Land, Sea	Reliance Panels
Space and Missile Defense	Reliance Panel, SMD JAT, IIPT, OIPT, WG Successor to JAT/OIPT
Cyberspace	IO EXCOM, Reliance Panel
Artificial Intelligence	USD (P) Autonomy Policy Working Group, Strategic Planning WG
Biometrics	**DoD Biometrics T&E WIPT (PEO-EIS)**
Chemical-Biological Warfare	CSOG-ChemBio, DUSA TE CBRND TECMIPT
Electronic Warfare / Anti-Access	TEWTCS, JIEDDO, and JTB
Hypersonics	Joint Technology Office on Hypersonics IPT
Nuclear Weapons Effects	CSOG-N, Defense Science Board
Spectrum Efficient Technologies	Range Spectrum Requirements Working Group (RSRWG) and the C-Band Working Group
Testing in Joint, Net-Centric, Distributed Test Environments	TRMC T&E/S&T Program Net-Centric Test Technology Area, TRMC-led DIACAP Tiger Team
Targets and Threats	Threat Systems Working Group (TSWG), Target Investment Working Group (TIWG), Reliance Panel
Unmanned and Autonomous Systems	UAS Task Force, Joint Program Robotics Office, and Joint Ground Robotics Integration Team (JGRIT)



Tracing T&E Capability Needs

- T&E Funding
- T&E Infrastructure
- T&E Workforce

Threats to Biometric Capabilities

- Privacy of information, including U.S. citizens
- Vulnerabilities to data, networks, devices
- Biometric Exploitation, Counter-Biometrics

Capability Requirements and Warfighter Needs

- Real-Time Analysis
- Mobile Capabilities
- Interoperable devices, networks
- Wide-Area Coverage
- Data Fusion

Primary Systems/Programs

Biometric Enabling Capability (BEC) Increment 0

- Includes Next Generation ABIS capability
- Status – Acquisition strategy approved; FDDR scheduled for 4 August; CPD and Interoperability Certification testing to follow FDDR

Joint Personnel Identification version 2 (JPIv2)

- Tactical collection devices
- Status – MS B FY13

DoD Biometrics T&E Infrastructure

Clarksburg, WV Biometrics T&E Capabilities	*Partial Capabilities - Clarksburg, WV*	***Infrastructure Absent***
• Installed Systems Testing (IST)	• *Limited* Distributed Testing (DT)	• **Digital Modeling and Simulation (M&S) Facility** - *M&S, time and space compressions on NG-ABIS system*
• Hardware in the Loop Testing (HITL)	• Open Air Range (OAR) - *Camp Dawson hosts demonstrations and operational assessments*	• **Measurement Facility** - *Government facility to validate and verify COTS measurements*
• Integration Laboratory (IL) - *Integrated Product List testing*		

Biometrics S&T Efforts

- The Accelerated Nuclear Deoxyribonucleic Acid (DNA) Equipment (ANDE), a field-deployable technology development effort enabling automated rapid DNA profiling. Rapid DNA profile matching will allow commanders to make actionable decisions concerning the release or detainment of persons of interest.

- Biometric Information Technology Evaluation (BITE) serves as the focal point for collecting the available information on the deployed biometric and forensic systems, how they are currently used, and how different employment concepts alter performance. The intent of this program is to produce: (1) a detailed simulation of the biometric and forensic operations as they are currently executed in Afghanistan; (2) operationally relevant metrics for the Defense Forensics Enterprise; (3) an analysis of the Iraqi biometric database looking at database size, enrolled populations, technologies, and operations; and (4) recommendations to maximize the biometric and forensic efforts in Afghanistan.

T&E Challenges over next 10 years

1. Reliable network connectivity, transmission IA
2. Understanding and resolving the individual and multiple threats to data quality in diverse mission environments
3. Accuracy of collect, match, store, and share capabilities
4. Operationally-realistic Biometric test environments
5. Classified handling and covert biometrics collection
6. DNA exploitation and non-cooperative persons
7. Reliance on human analysis in test loop; Lack of automated test tools; limited workforce

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