



SIPET Mission Brief

February 2022

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SIPET Briefing Purpose and Objectives

SIPET's purpose and background are part of the goals and objectives set by leadership.



What is the Purpose of this Briefing?

1. Review SIPET's mission, structure, and priorities :
 - Missions and Objectives
 - Priorities and I-Plan execution
 - SIPET Key Functions
2. Review SIPET's strategic initiatives and successes



What are the Objectives of this Briefing?

1. Summarize SIPET's mission, priorities, and organizational structure
2. Define SIPET's key functions and products to increase engagement with the organization
3. Provide examples of SIPET products and deliverables

SIPET History and Mission

In 2021, DOT&E established a new Deputate to focus on identifying and resolving emerging T&E challenges.



SIPET Mission

Drive continuous innovation to meet the T&E demands of the future. Support the development of a workforce prepared to meet the toughest T&E challenges. Nurture a culture of information exchange across the enterprise and update policy and guidance.

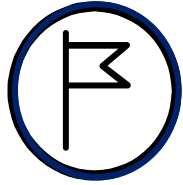


SIPET History

- DOT&E was created by Congress in 1983.
- DOT&E executed an organizational realignment and established the SIPET Deputate in 2021.
- DOT&E created SIPET to codify and implement the Director's strategic vision and keep pace with science and technology to modernize T&E tools, processes, infrastructure and workforce.

SIPET Key Functions

SIPET's main focus is on executing strategic initiatives, communications and automation, policy and training, and emerging technologies.



Strategy I-Plan Execution

SIPET manages I- Plan strategic initiatives to address T&E gaps and transform T&E infrastructure, processes, tools and workforce. SIPET manages I-Plan metrics and identifies project goals to meet the strategic intent.

Data Management

SIPET includes the DOT&E Chief Data Officer focused on implementing the DOD Data Strategy and T&E data management.



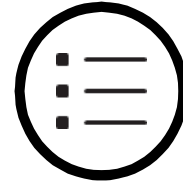
Workforce Development

SIPET includes the Chief Learning Officer to prioritize the training of new DOT&E staff and set out guidance for talent acquisition and training through competency modeling and coordination of training materials and activities.



Portfolio Management

SIPET oversees progress tracking of portfolios for all SIPET field activities, SIPET staff, and partnerships, which requires data management and project management tools and processes.

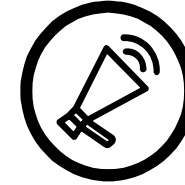


Report Generation

In addition to the SIPET inclusion in the Annual Report, it is responsible for special report generation, such as T&E resources or response to Congressional tasks.

Peer Review

SIPET reviews T&E documents to support quality control and increase awareness of T&E processes and challenges.



Policy and Governance

SIPET develops policy for OT&E and LFT&E, generates and reviews supplementary training courses, and participates in strategic planning for future months, quarters, years.



Market Research

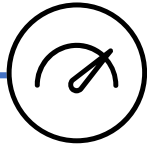
SIPET includes the Science Advisor to identify, research and conduct sensing to discover cutting edge technology for use in T&E.

Communications

SIPET drafts and implements communication strategy and plans to increase transparency and clarity on DOT&E initiatives, actions, and policy.

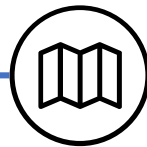
SIPET FY23 Priorities and Objectives

SIPET's high level priorities for FY23 to create a safer and more agile vision for DOT&E.



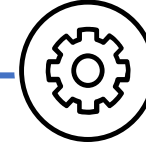
COORDINATE & EXECUTE DOT&E STRATEGY I-PLAN

The DOT&E Strategy Update and resulting Implementation Plan are intended to set a course for **transformative changes to T&E infrastructure, tools, processes, and workforce**. The I-Plan stipulates **DOT&E funded FY23 activities and provides an approach to develop a T&E enterprise-wide I-Plan in FY24**.



COLLABORATE ON UPDATES TO POLICIES

Update **requisite DODIs** (e.g., 5000.89, 5141.02) and **DODMs** (e.g., cyber T&E) and **communicate out impact of changes** to relevant stakeholder groups.



STAND UP SOFTWARE & CYBER INNOVATION CENTER

Aligned to the **Congressional mandate** to support a T&E Software and Cyber Center of Excellence. The Innovation Center will provide a **scalable, one-stop-shop of on-demand resources for cutting edge R&D, thought leadership, and collaboration across the T&E enterprise**.

Implementation Plan Pillars

The I-Plan is centered around five key pillars and associated lines of effort to reach desired end states to move the T&E community forward.

1. Test the way we fight



- Standardize the development of a scalable and adaptive representation of the multi-domain operating environment
- Implement measures, tools, and processes to efficiently evaluate kill webs and system-of-systems performance

2. Accelerate delivery of weapons that work



- Develop and implement an enterprise-level T&E data management solution
- Integrate T&E in model-based engineering to operationalize and optimize the Shift Left approach

3. Increase the survivability of DoD in contested environments



- Standardize and automate mission-based risk assessments
- Emphasize cyber and electromagnetic spectrum survivability
- Evaluate operational performance in a contested space environment

4. Pioneer T&E of weapon systems built to change over time



- Increase the use of credible digital twins in T&E
- Evaluate the operational and ethical performance of AI-based systems
- Advance the evaluation of software-reliant systems' operational performance

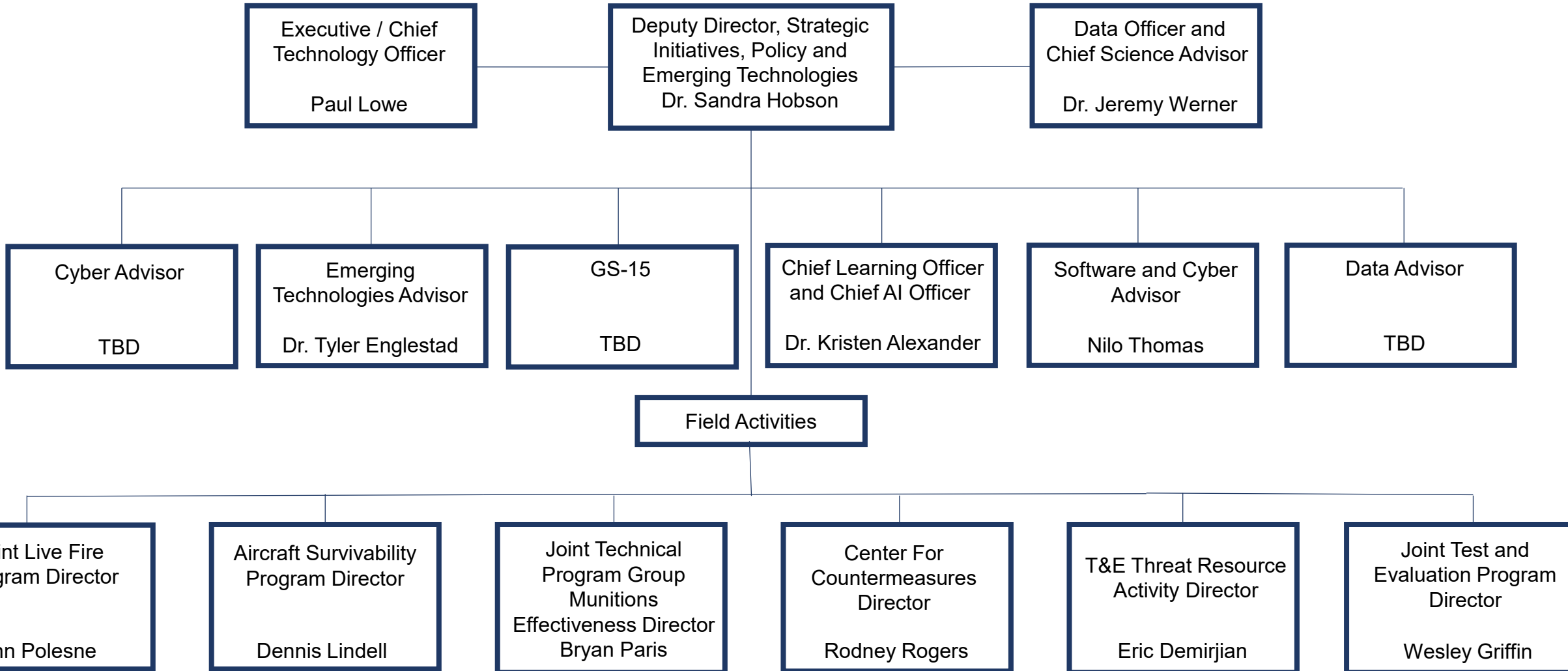
5. Foster an agile and enduring T&E enterprise workforce



- Identify and track T&E workforce competencies and capabilities
- Assess and address critical T&E workforce professional development needs

SIPET Org Chart

SIPET reports directly to the Director and Principal Deputy Director and is comprised of Action Officers and Scientific/Senior Level Staff who are advisors in function areas, as well as six Field Activities who report to the Deputy Director, SIPET.



Deep Dive: SIPET Field Activities (FA)

SIPET Field Activities have unique DOD functions that indirectly support the DOT&E mission and Strategy.

| Joint Live Fire Program | Joint Aircraft Survivability Program | Joint Technical Program and Munitions Effectiveness |
|--|---|---|
| Description | Description | Description |
| <p>The Joint Live Fire (JLF) advances tools, methods and processes to test and evaluate U.S. systems (across all domains) and U.S. weapons against full spectrum of actual adversary threats and targets encountered in combat.</p> | <p>The Joint Aircraft Survivability Program (JASP) develops cross-Service aircraft survivability solutions and evaluation methods needed to dominate the multi-domain battlefield and mitigate U.S. aircraft losses in combat.</p> | <p>The Joint Technical Coordinating Group for Munitions Effectiveness (JTTCG/ME) program develops validated weaponeering tools derived from the policy-approved Joint Munition Effectiveness Manuals (JMEMs) in support of Combatant Command strike authorities.</p> |
| Tasks | Tasks | Tasks |
| <ol style="list-style-type: none"> 1. Advance lethality evaluations of kinetic weapons including hypersonic weapons 2. Advance survivability and lethality assessment for maritime targets 3. Improve assessment of combat induced traumatic brain injuries 4. Enable full-spectrum survivability and lethality evaluations. | <ol style="list-style-type: none"> 1. Advance the capability and credibility of joint aircraft combat effectiveness tools and enterprise level modeling and simulation used in combat mission planning, training, weapon schools and operational and live fire T&E. 2. Support the Joint Combat Assessment Team to develop the requirements for joint aircraft survivability solutions that provide force protection and remedy operational shortfalls. 3. Leverages advances in science and technology to develop solutions to aircraft survivability gaps. | <ol style="list-style-type: none"> 1. Develop the Digital Imagery Exploitation Engine (DIEE) tool, used to geographically locate and characterize the target, weaponeer the target using JMEM Weaponeering Software, and estimate collateral damage effects using the Digital Precision Strike Suite Collateral Damage Estimation (DCiDE) tool 2. Develop weaponeering tools capable of estimating lethal effects for directed energy weapons (DEW), cyber, and electromagnetic spectrum (EMS) fires. |

Deep Dive: SIPET Field Activities

SIPET Field Activities assist with DOT&E testing, data analysis, report production, and the development of testing procedures.

| Center For Countermeasures | T&E Threat Resource Activity | Joint Test and Evaluation Program |
|---|---|--|
| Description | Description | Description |
| <p>The Center for Countermeasures (CCM) operates and deploys specialized mobile test instrumentation capable of simulating an array of threats to measures and evaluate operational effectiveness of countermeasures employed by US. DOD and foreign weapon systems.</p> | <p>Test and Evaluation Threat Resource Activity (TETRA) is a joint duty activity between DOT&E and the Defense Intelligence Agency (DIA) focused on confirming that OT&E and LFT&E plans and warfighter training are adequately informed by the latest and emerging intelligence data.</p> | <p>The Joint Test and Evaluation (JT&E) Program considers emerging technologies and the dynamic, joint, multi-domain operational environment to plan and execute joint tests intended to deliver non-materiel solutions (TTPs, CONOPS, CONEMP) and enhance the United States' operational effectiveness, suitability, and survivability in combat.</p> |
| Tasks | Tasks | Tasks |
| <ol style="list-style-type: none"> 1. Expedite the development and fielding of countermeasure systems. 2. Pioneer credible testing and evaluation of directed energy-based countermeasures. 3. Enable credible testing and evaluation of counter small unmanned aerial systems. 4. Provides threat environments for pre-deployment training. 5. Leverages Allies' support to advance testing and evaluation of aircraft survivability equipment. | <ol style="list-style-type: none"> 1. Generate products that include intelligence-based analysis of current and emerging threats 2. Facilitate the acquisition of foreign materiel needed for testing or development of threat surrogates 3. Oversee threat and target surrogate development include the verification and validation process. 4. Leverage science and technologies to stay ahead of emerging threats and targets. | <ol style="list-style-type: none"> 1. Develop products that have implications beyond TTP. Products from JT&E projects have been incorporated into joint and multi-Service documents through the Joint Requirements Oversight Council process, Joint Staff doctrine updates, Service training centers, and coordination with the Air Land Sea Application Center. 2. Develop operational testing methods that have joint application. |

SIPET Products

SIPET’s main products that are leveraged to bring meaningful change and guidance across the entire DOT&E organization.

SIPET Products

AO Course Materials

Updates to AO Course agenda and materials and develops courses to support the DOT&E continuous learning agenda.

DoD Instructions and Manuals

Development and coordination of DOD instructions and Manuals for OT&E and LFT&E to increase T&E efficiency, rigor and to respond to advanced emerging technologies and threats.

AO Feedback and Communications Products

Surveys to generate consistent feedback from DOT&E staff.

Creation of DOT&E newsletters, journal articles, and conference briefings.

Congressional Reports

Collaboration with the DOT&E to produce congressional reports on T&E test trends, resources, funding and innovations. SIPET generates products in support of T&E Staffer Day and similar engagements.

Annual Report

Summary of DOT&E’s funding, progress, shortfalls, and changes within the fiscal year. SIPET helps to provide the executive summary, the status of T&E resources, and updates on field activities.

Field Activity Reports

Status updates for the FA directors to provide insight into testing results, findings, advancements, and challenges facing their activity.

I-Plan Products

25 key actions and a range of use cases, pilots, prototypes, concepts to support the desired end-state outlined in the Strategy.

Key Audiences

- DOT&E Leadership
- DOT&E Staff
- T&E community

- SecDef
- DOT&E Leadership
- DOT&E Staff
- T&E Community

- DOT&E Leadership
- DOT&E Staff

- DOT&E Leadership
- T&E Community
- Congressional Defense Committees

- SecDef
- DOT&E Leadership
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- DOT&E Leadership
- SIPET Leadership
- DOT&E Staff
- T&E Community

- DOT&E Leadership
- DOT&E Staff

SIPET Field Activity Products

SIPET's Field Activity main products that are leveraged to bring meaningful change and guidance across the entire DOT&E organization.

Field Activity Products

Weaponizing & Mission Planning Tools

- Strike authorities with predictive capabilities in multi-domain operations including collateral damage effect estimates. Underlying analytical tools are beneficial to T&E.
- Database of target vulnerability data for use in T&E and mission planning.

Reports on Updates to TTPs, CONOPS

- Joint tests and quick reaction test reports offer new solutions for testing mission threads, emerging technologies, multi-domain operations, TTPs, CONOPS, CONEMP.

M&S Management and Support

- Updates to survivability and lethality M&S tools
- Updates to M&S in support of hypersonic T&E
- Full spectrum survivability and lethality solutions

Threat and Target Intelligence Support

- Latest threat intelligence updates and their effect on T&E strategy and plans across warfare domains
- Delivery of threat and target surrogates and their VV&A reports critical to upcoming T&E strategy and plans
- Adversary TTP reports that may affect T&E strategy and plans
- Detailed assessment of existing and emerging threat capabilities as a function of different theaters of operations

Testing & Data Analysis Distribution

- Advanced capabilities to support T&E of countermeasure effectiveness
- Testing capabilities and methods to support T&E of Directed Energy Weapons
- Testing capabilities to counter counter-small unmanned aerial systems

Key Audiences

- Combatant Commands
- Joint Staff
- DOT&E Leadership and Staff
- T&E Community
- Congressional Defense Committees

- Combatant Commands
- Joint Staff
- DOT&E Leadership and Staff
- T&E Community

- DOT&E Leadership
- Congressional Defense Committees
- T&E Community

- DOT&E Leadership and Staff
- T&E community
- Defense Intelligence Agency
- Congressional Defense Committees

- DOT&E Leadership and Staff
- T&E community
- Congressional Defense Committees

Requesting SIPET Support

SIPET has a variety of avenues to support the T&E community and key partners depending on the need and request, including:



Policy Engagement

SIPET helps develop policy and guidance for OT&E and LFT&E in conjunction with DOT&E leadership and USD(R&E).



Testing Guidance

SIPET works to develop innovative and effective testing tools, methods and processes in collaboration with Field Activity Directors and Action Officers.



Data Analytics

SIPET delivers analytics, reviews test plans and reports, and provides summaries of key findings made by SIPET Field Activities and test results



Workforce Engagement

SIPET delivers products to help engage with and train DOT&E employees by creating trainings and materials to onboard and update the workforce.



Innovation

SIPET staff engages with the DOT&E community to drive innovation and push the limits of our testing and warfare capabilities.

Resources for Use

DOT&E Annual Report

Testing Procedures

Implementation Plan

AO Course

Innovation Center

Special Topic Reports

FA & AO Reports

Competency Model

Market Sensing

Published Research

SIPET Example Deliverables

SIPET's high level accomplishments after being established within the DOT&E.

1

Published and Executed Implementation Plan

SIPET published the [DOT&E Strategy Update 2022](#) and DOT&E Strategy Implementation Plan 2023 to transform test & evaluation to enable delivery of the world's most advanced warfighting capabilities at the speed of need. SIPET initiated 25 Key Actions to make progress against the Strategic Intent and began tracking progress within an Enterprise Performance Dashboard to improve visibility and transparency of initiatives.

2

Initiated and Supported a Soft Launch of the T&E Innovation Center

DOT&E responded to the HASC task by providing an implementation plan for a Cyber and Software Test and Evaluation Center of Excellence. The plan provides a strategy for a scalable, one-stop shop for cutting edge research and development, thought leadership, and collaboration across the T&E enterprise with three major objectives: 1) nurture a culture of information exchange across the T&E enterprise; 2) drive continuous innovation across cyber and software T&E; and 3) build a pipeline for talent acquisition, training, and retention through multiple key actions.

3

Conducted DOT&E Workforce Assessment

DOT&E conducted an internal workforce assessment to better prepare and position its T&E professionals to execute its mission as the T&E landscape and DoD weapon systems evolve. During the assessment, DOT&E developed a clear picture of its workforce's T&E and technical skills proficiencies, defined seven DOT&E-specific competencies comprised of 149 knowledge, skills, and abilities (KSAs), and detailed how DOT&E should develop and deploy its T&E professionals to build their collective KSAs

Outputs from the workforce assessment serve as the foundation for future DOT&E workforce development and talent management activities, allowing DOT&E leadership to focus on recruiting, developing, and promoting the right KSAs within its workforce given emerging mission requirements.

4

Increase test capabilities acceleration in advanced technologies

DOT&E received additional funds across operational T&E, LFT&E, and operational test activities and analysis for test capabilities acceleration in advanced technologies, which include electromagnetic spectrum, hypersonic, directed energy, space, data management, Artificial Intelligence (AI), autonomy, software, cyber, and next generation threats.

SIPET Example Deliverables

SIPET's high level accomplishments after being established within the DOT&E.

5

Identified Process Automation for Key DOT&E Functions

After working collaboratively with DOT&E process owners across Deputates on a process automation assessment, findings identified 12 high-impact processes that can be reallocated annually through automation. Prioritized processes will be improved through business process improvement, new process implementation, robotic process automation, and intelligent optical character recognition.

6

Completed the Naval Aviation OT Congressional Study

At the direction of the FY22 NDAA, DOT&E submitted an assessment of proposed cuts to Naval Aviation Operational Test workforce and infrastructure. Calculating the current and future capacity and infrastructure with the proposed reductions, the report found 22 impacts on cost, schedule, and efficacy of OT by tasking other non-test designated units, units whose primary mission is not operational test, to conduct OT. DOT&E evaluated six courses of action based on the ability of the OT squadrons to meet FY23 test requirements and provided a recommendation to Congress and CAPE on the path forward.

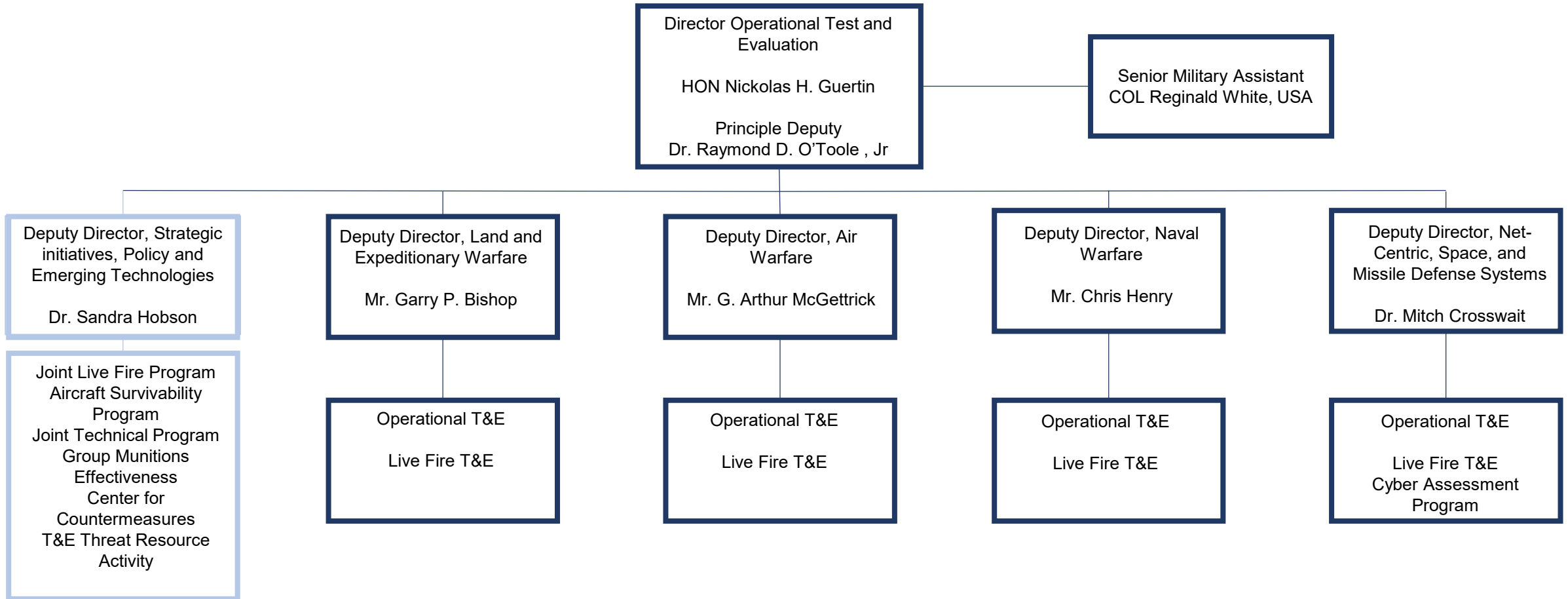
7

Established DOT&E Communications Plan

In 2022, DOT&E developed an enterprise-wide communications plan to better engage with the DOT&E workforce, T&E community, and key public and private stakeholders. DOT&E thoroughly reviewed its communications channels and vehicles, discussed communications gaps and needs with staff and partners, and determined 16 possible new or changes to existing communications channels or vehicles. DOT&E will use these means to build awareness and understanding among the DOT&E workforce, provide progress on current initiatives, establish two-way feedback mechanisms, share success stories, further DOT&E'S brand, and enhance Partnerships

DOT&E Org Chart

The organizational chart of the DOT&E and SIPET structures shows where SIPET falls under the DOT&E umbrella.



SIPET Key Messages

SIPET key messages are essential for explaining the background to SIPET’s strategy.

| | |
|--|---|
| <p>Mission</p> | <p>Drive continuous innovation to meet the T&E demands of the future. Support the development of a workforce prepared to meet the toughest T&E challenges. Nurture a culture of information exchange across the enterprise and update policy and guidance.</p> |
| <p>Linkage to DOT&E Mission</p> | <p>SIPET strives to provide policy, strategic planning, and oversight to the T&E community as emerging technologies are acquired by the DoD.</p> |
| <p>What does SIPET do?</p> | <p>SIPET identifies and helps resolves gaps in OT&E and LFT&E and documents them in the I-Plan. As new T&E methods, processes, tools are uncovered – SIPET updates policy and guidance to update. SIPET delivers products to increase communication and transparency internally and externally. SIPET reviews T&E documents to support standardization across Deputates and increase awareness of common T&E challenges. SIPET delivers training courses for the organization and new capabilities to improve business processes.</p> |
| <p>How does SIPET do it?</p> | <ul style="list-style-type: none"> • SIPET proactively looks forward to identify OT&E/LFT&E needs, gaps, and potential solutions; craft new ways of doing business; and help Service and agency operational test organizations solve problems. • Working with stakeholders across the department, SIPET develops and refines operational test policy guidance in the areas of T&E including cyber, EMSO, hypersonics, directed energy, interoperability, software, modeling and simulation, Artificial Intelligence. • SIPET also identifies the skillsets needed for the T&E workforce in the future and helps to connect them to trainings, rotation programs, and conferences that will build those competencies for success in the future. |
| <p>Where to find more information on SIPET?</p> | <p>DOT&E Website DOT&E Annual Report Action Officer Course</p> |

SIPET I-Plan Pillar Products

These are the pillars of critical SIPET initiatives and the organizations responsible each activity.



Test the Way We Fight

- **T&E Report** (Collecting and prioritizing range capability requirements and costs)
- **Range Capability Dashboard** (T&E requirement dashboard)
- **GAP** (concept requirements for a credible M&S domain architecture for virtual, live, and constructive testing)
- **JT&E Project** (DOD manuals with key measures and methodologies to evaluate missions)
- **Threat Systems Program TSP Portal** (Data Dashboard for comparing threats)



Accelerate Weapons that Work

- **Guidehouse Data Standards** (Standard setting for data storage)
- **Enterprise T&E Data Management** (Pilot activities to set data standards)
- **Edaptive Smart Word Processing** (Document discovery tool)
- **Develop a Process for OTE Testing process for ZTA**
- **Metron Bayesian Decision Support System** (retrospective Exemplar)
- **Develop T&E Concepts** (digital model prototype)



Improve Survivability

- **NDA Task** (Concept prototype for facing kinetic and non kinetic threats)
- **TSP Portal** (Infrastructure concept for agile threats)
- **ECRAM** (integrated test evaluation system)
- **Space EW Task** (Space representation in testing and training. Report of requirements and capabilities for the space environment)



Pioneer Continuous T&E

- **AI Enabled Systems** (T&E research material display tool)
- **OT&E xBom Pipeline Pilot** (Updates to the T&E companion guide)
- **Software Pipeline Government Software Test Survey** (Guidance for advanced tools in OT test generation)
- **CEEF & CLEF** (Metric characterization, procedures, and assessment of offensive cyber capabilities)



Foster an Agile T&E Workforce

- **Competency Model** (Professional competency model for knowledge and skills)
- **PCD Recommendations** (T&E functions database and capabilities)
- **DOT&E Learning Strategy** (Learning needs assessment for to discover T&E learning style)
- **DOT&E Course Catalog** (Training and education courses)
- **DOT&E Architecture** (Recommendations for making education delivery more agile)
- **T&E Initial Software& Cyber Standup** (KM solutions to enhance knowledge)