DoD Manual 5000.100

Test and Evaluation Master Plans and Test and Evaluation Strategies

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Purpose: In accordance with the authority in DoD Directive (DoDD) 5141.02 and DoD Instruction (DoDI) 5000.98, this issuance implements policy, assigns responsibilities, and provides procedures for developing operational test and evaluation (OT&E) and live fire test and evaluation (LFT&E) input to the test and evaluation master plan (TEMP), a test and evaluation (T&E) strategy, or an equivalent product (referred to in this issuance as "TEMP/T&E strategy") for DoD systems and services (referred to in this issuance as "DoD systems") acquired via the Defense Acquisition System or via other non-standard acquisition systems.

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SECTION 1: GENERAL ISSUANCE INFORMATION

1.1. APPLICABILITY.

This issuance applies to:

a. The OSD, the Military Departments, the Office of the Chairman of the Joint Chiefs of Staff and the Joint Staff, the Combatant Commands, the Office of Inspector General of the Department of Defense, the Defense Agencies, the DoD Field Activities, and all other organizational entities within the DoD (referred to collectively in this issuance as the "DoD Components").

b. DoD systems acquired via the Defense Acquisition System, pursuing any adaptive acquisition framework pathway, in accordance with DoDD 5000.01 and DoDI 5000.02.

c. DoD systems under special access controls, in accordance with DoDD 5205.07.

d. Non-standard acquisition systems (e.g., Missile Defense System).

1.2. POLICY.

In accordance with DoDI 5000.98 and relevant DoD manuals (DoDMs) and guidance, the DoD will develop, fund, and execute the TEMP/T&E strategy required to:

a. Support the acquisition strategy and key decisions in developing, producing, and delivering DoD systems to the user(s).

b. Codify an agreement between the DoD system program manager and T&E stakeholders outlining and justifying the focus and scope of T&E activities required to evaluate the technical requirements and operational effectiveness, suitability, survivability, and lethality (as applicable) of DoD systems as they mature across the acquisition life cycle.

SECTION 2: RESPONSIBILITIES

2.1. DIRECTOR OF OPERATIONAL TEST AND EVALUATION (DOT&E).

Pursuant to Sections 139, 4171, 4172, and 4231 of Title 10, United States Code; Section 223 of Public Law 117-81; DoDD 5141.02; and DoDI 5000.98, the DOT&E reviews and approves exceptions and procedural deviations from this issuance for DoD systems on the T&E Oversight List for OT&E and LFT&E.

2.2. UNDER SECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING (USD(R&E)).

The USD(R&E):

a. For acquisition category ID programs under T&E oversight for developmental test and evaluation (DT&E), assesses the adequacy and approves DT&E strategies documented in TEMPs/T&E strategies.

b. For all other acquisition programs under DT&E oversight, advises the milestone decision authority (MDA) by conducting an independent analysis of test data, reports, modeling and simulation (M&S) results and the adequacy of the DT&E plan in the TEMP/T&E strategy.

2.3. UNDER SECRETARY OF DEFENSE FOR ACQUISITION AND SUSTAINMENT (USD(A&S)).

The USD(A&S) enforces this issuance for DoD systems for which the USD(A&S) is the MDA.

2.4. DOD CHIEF INFORMATION OFFICER.

The DoD Chief Information Officer coordinates with the DOT&E, USD(R&E), USD(A&S), and the Under Secretary of Defense for Intelligence and Security (USD(I&S)) to synchronize the OT&E and LFT&E processes in this issuance with the DoD Cybersecurity Program and the DoD Strategic Cybersecurity Program.

2.5. USD(I&S).

The USD(I&S) oversees intelligence support to the acquisition life cycle and advises the DOT&E concerning intelligence supportability requirements that affect OT&E and LFT&E.

2.6. CHIEF DIGITAL AND ARTIFICIAL INTELLIGENCE OFFICER.

The Chief Digital and Artificial Intelligence Officer:

a. Establishes policy and issues guidance on the definitions of requirements and testability for artificial intelligence (AI)-enabled systems to implement and demonstrate adherence to the DoD AI Ethical Principles and the DoD Responsible AI Strategy and Implementation Pathway.

b. Issues guidance, methodologies, and best practices on T&E for AI capabilities in DoD systems.

c. Coordinates with the USD(R&E) and DOT&E on developing and using common tools and infrastructure for T&E and verification and validation (V&V) of AI capabilities in DoD systems.

2.7. DOD COMPONENT HEADS.

The DoD Component heads follow the procedures outlined in this issuance through:

a. Component acquisition executives.

b. Program managers.

c. LFT&E organizations.

d. Their designated operational test agency (OTA) or operational test organization (referred to in this issuance as "OTA").

SECTION 3: TEMP/T&E STRATEGY OVERVIEW

3.1. SCIENCE- AND TECHNOLOGY-BASED TEMP/T&E STRATEGY.

a. The planning and development of the TEMP/T&E strategy will be based on the latest advances in science and technology (e.g., science-based test design including, but not limited to, statistical inference methods, digital engineering and tools, automation) to enable the:

(1) Evaluation of technical requirements.

(2) Determination of preliminary and final operational effectiveness, suitability, survivability, and lethality (as applicable) of DoD systems with scientific rigor.

(3) Characterization and quantification, where possible, of the risk to the execution of the T&E program, the acquisition program, the warfighter, mission engineering outcomes, and DoD operations.

b. A science- and technology-based TEMP/T&E strategy:

(1) Optimizes the planning and execution of T&E.

(2) Enables dynamic and efficient evaluation of technical requirements, operational effectiveness, suitability, survivability, and lethality (as applicable) from multiple data sources as the DoD system matures across the acquisition life cycle.

3.2. TEMP/T&E STRATEGY ACROSS THE ACQUISITION LIFE CYCLE.

In parallel with the development of the acquisition strategy, the program manager will charter a T&E Working-level Integrated Product Team (WIPT), also known as the integrated test team (ITT), (referred to in this issuance as "T&E WIPT/ITT"), to develop a TEMP/T&E strategy in support of requests for proposals, acquisition contracts, and the initial acquisition or program decision. TEMP/T&E strategy updates will occur at each subsequent acquisition or program decision, as appropriate, or following any major program changes (e.g., funding, acquisition, capability updates) to optimize the use of available T&E activities; live data and M&S results; schedule; and resources.

a. In addition to available T&E-specific products, program-related products will inform the development of the TEMP/T&E strategy. See Table 1 in Appendix 4A for examples and descriptions of program-related products that inform the TEMP/T&E strategy or that are informed by the TEMP/T&E strategy.

b. The T&E WIPT/ITT will plan and execute the risk-based level of test assessment and mission-based risk assessments (MBRAs) to:

(1) Inform an appropriate scope of OT&E and LFT&E.

(2) Monitor and quantify, where possible, risk to meeting T&E objectives, and risk to the acquisition program, the warfighter, mission engineering outcomes, and DoD operations.

c. The TEMP/T&E strategy will include an integrated decision support key (IDSK) to:

(1) Identify and align the acquisition and program decisions (as appropriate) with relevant technical requirements, and operational effectiveness, suitability, survivability, and lethality (as applicable) measures, metrics, and evaluation criteria that the DoD system (or its sub-systems, components, and sub-components) needs to meet (given its maturity) before proceeding to the next acquisition or program decision.

(2) Identify live data and M&S results required to evaluate the identified measures and metrics and track progress towards determining operational effectiveness, suitability, survivability, and lethality (as applicable) as the DoD system matures across the acquisition life cycle.

3.3. OT&E.

The TEMP/T&E strategy identifies the integrated T&E and OT&E events and resulting live data and M&S results required to:

a. Incrementally evaluate progress towards meeting operational effectiveness and suitability while taking into equal consideration survivability and lethality effects, to inform interim acquisition decisions.

b. Determine operational effectiveness and suitability of the DoD system while taking into equal consideration survivability and lethality effects to inform fielding or full-rate production decisions.

c. Support the evaluation of any risk to operational effectiveness and suitability, the next phase of OT&E, the acquisition program, the warfighter, and DoD operations.

d. Inform the evaluation of realistic full spectrum survivability and lethality.

(1) Operational Effectiveness.

The TEMP/T&E strategy includes measures, metrics, and methods to evaluate the operational effectiveness of the DoD system with scientific rigor in an operationally representative and relevant contested, congested, and constrained environment including operational users, DoD system defenders, and maintainers. These measures, metrics, and methods will be detailed in relevant guidance and will include, but are not limited to:

(a) Relevant technical measures that enable and derive from operational requirements, concepts of operations, or as specified in other technical specifications supported by contractor test and evaluation (CT&E), DT&E, and LFT&E.

(b) Operational and mission-focused performance for determining mission effectiveness including system-of-systems operational effectiveness and interoperability.

(c) As applicable, aspects of autonomous and AI-enabled systems, in accordance with DoDM 5000.101.

(2) Operational Suitability.

The TEMP/T&E strategy will include measures, metrics, and methods to evaluate operational suitability of the DoD system with scientific rigor in an operationally representative and relevant contested, congested, and constrained environment including operational users, DoD system defenders, and maintainers. These measures, metrics, and methods will be detailed in relevant guidance and will include, but are not limited to:

(a) Reliability, availability, and maintainability for both hardware and software.

(b) The program's failure reporting, analysis, and corrective action system, including the program's reliability growth strategy.

(c) Human systems integration, including user workload, system usability, situational awareness, capacity for responsible use, and user trust in the system, in accordance with DoDI 5000.95.

(d) Safety hazards; mitigations; and risk to hardware, software, system and human interfaces, intended use or application, operational environment, and emerging technologies capabilities (e.g., AI-enabled systems, autonomous systems).

(e) Training and associated documentation.

(f) System-of-systems performance including:

1. Mission critical interfaces and interoperability with other systems required for timely and accurate data transactions, interpretation of such data transactions, and timely actions based on the interpreted data.

2. The ability of forces, systems, and components to work together efficiently with other existing or planned forces, systems, and components to execute objectives using standardized, defined, and agreed upon interfaces and operational processes.

(g) Logistics, including transportability and storage, and any effects of the contested environment on logistics.

(h) As applicable, aspects of autonomous and AI-enabled systems, in accordance with DoDM 5000.101.

3.4. LFT&E.

The TEMP/T&E strategy integrates the LFT&E strategy and identify the integrated T&E and LFT&E events and resulting live data and M&S results required to:

a. Incrementally evaluate progress towards meeting full spectrum survivability and lethality (as applicable) and identify any full spectrum survivability and lethality effects on operational effectiveness and suitability to inform interim acquisition decisions.

b. Determine the full spectrum survivability and lethality (as applicable) and identify any full spectrum survivability and lethality effects on operational effectiveness and suitability to inform fielding or full-rate production decisions.

c. Support the evaluation of risk to full spectrum survivability and lethality, the next phase of LFT&E, the acquisition program, the warfighter, mission engineering outcomes, and DoD operations.

d. Inform the evaluation of operational effectiveness, suitability, and collateral damage effects.

(1) Survivability.

The TEMP/T&E strategy includes measures, metrics, and methods to evaluate realistic full spectrum survivability of the DoD system with scientific rigor in an operationally representative and relevant contested, congested, and constrained environment. These measures, metrics, and methods will be detailed in relevant guidance and will support the evaluation of the DoD system survivability kill chain, including:

(a) The susceptibility of the DoD system to kinetic and non-kinetic attacks, including but not limited to threats to AI components of the DoD system (if applicable).

(b) Identification of mission critical vulnerabilities in the DoD system design; training; and tactics, techniques, and procedures as well as the performance of any kinetic and non-kinetic survivability enhancement (or vulnerability reduction) features, when attacked.

(c) The recoverability from kinetic and non-kinetic attacks including the effectiveness and timeliness of the repair or recovery processes, procedures, manuals; the ability to resume mission critical functions during or after the attack; and any effects of the recoverability outcome on operational effectiveness and suitability. For non-kinetic threats, recoverability evaluation may include the ability to adapt to the attack to preclude it from occurring again.

(d) The effect of the kinetic and non-kinetic attacks on user casualties (i.e., force protection), if applicable.

(e) Coordinated, full spectrum attack effects (i.e., a combination of kinetic and non-kinetic attacks).

(f) As applicable, aspects of autonomous and AI-enabled systems, in accordance with DoDM 5000.101.

(2) Lethality.

Lethality evaluation of DoD offensive capabilities requires detailed and unique adversary target data from the Intelligence Community. The TEMP/T&E strategy will include measures, metrics, and methods required to support an evaluation of realistic full spectrum lethality of the DoD system with scientific rigor in an operationally representative and relevant contested, congested, and constrained environment. These measures, metrics, and methods will be detailed in relevant guidance. They will consider the adversary tactics, techniques, and procedures and the adversary kill-chain, and will include, but are not limited to:

(a) Offensive capability lethal mechanism or effect, including the required number of weapons on the target to achieve the required lethal effect. Examples of this include:

1. Kinetic weapon systems: penetration (e.g., projectile, fragmentation), shock, and fire.

2. Offensive cyber capabilities: deny, degrade, disrupt, deceive, destroy, exploit, and influence.

3. Electromagnetic spectrum fires including directed energy weapons, such as electromagnetic attack, spectrum effects, particle beams, laser, and microwave.

4. Other lethal effects capabilities.

(b) Offensive capabilities against operationally representative and realistic functional, physical, or information materials and targets, as fired from the host platform or the warfighter.

(c) Offensive capabilities in the presence of adversaries' susceptibility and vulnerability reduction effects

(d) Effect of an offensive attack on collateral damage in support of the development of validated weaponeering tools.

(e) As applicable, aspects of autonomous and AI-enabled systems, in accordance with DoDM 5000.101.

3.5. CERTIFICATIONS.

a. The TEMP/T&E strategy identifies any required certifications (e.g., interoperability, air worthiness, safety, safety releases, nuclear), their schedule, required testing, and the representatives of applicable certifying authorities (e.g., Joint Interoperability Test Command).

b. For interoperability certification, the TEMP/T&E strategy will identify the integrated T&E, OT&E, LFT&E, and M&S, as applicable, that will be required to support the interoperability evaluation, including but not limited to:

(1) The list of interfaces and standards the DoD system must use to interoperate.

(2) The list of and basic information on other systems and programs that the system intends to interoperate with, including systems requiring access across multiple security classification levels.

(3) For each network architecture in which the DoD system can operate, sufficient information to determine what resources are needed to recreate it.

(4) Measures such as information exchange completeness, accuracy, and timeliness to support and evaluate interoperability in military operations.

(5) Measures of performance of information sharing mechanisms, such as communication systems, data exchange formats, and encryption protocols.

(6) Reliability, security, accuracy, and speed of information sharing.

(7) Any requirements for government-furnished equipment to test the DoD system's interoperability.

3.6. M&S.

a. The TEMP/T&E strategy includes the M&S verification, validation, and accreditation (VV&A) strategy or master plan and deliverables for M&S V&V and accreditation plans with schedules to meet OT&E and LFT&E objectives.

b. The M&S VV&A strategy, V&V plans, and accreditation plans will be developed and executed in accordance with DoDM 5000.102.

3.7. T&E PROGRAM MANAGEMENT.

The TEMP/T&E strategy must identify the members of the T&E WIPT/ITT and their responsibilities in accordance with DoDI 5000.98. The TEMP/T&E strategy must include an appendix with up-to-date points of contact for key WIPT/ITT members.

a. The program manager, in coordination with the T&E WIPT/ITT, must develop and implement a data management strategy and a data management plan before the initial acquisition decision in accordance with procedures outlined in Paragraph 3.8. of DoDI 5000.98.

b. The T&E WIPT/ITT will:

(1) Plan and execute the risk-based level of test assessment and MBRA to inform T&E concepts and the TEMP/T&E strategy.

(2) Coordinate lethality plans and data with the Joint Technical Coordinating Group for Munitions Effectiveness.

c. The OTA, in coordination with LFT&E organizations, will develop a T&E concept for OT&E in time to inform the TEMP/T&E strategy.

d. LFT&E organizations, in coordination with the OTA, will develop a T&E concept for realistic full spectrum survivability and lethality evaluation in time to inform the TEMP/T&E strategy.

3.8. DATA MANAGEMENT.

The TEMP/T&E strategy describes the data management strategy and include a deliverable for a data management plan to make live data, M&S results, and other program data critical to meeting OT&E and LFT&E objectives visible, accessible, understandable, linked, trusted, interoperable, and secure.

3.9. DOT&E OVERSIGHT.

a. For programs on the T&E Oversight List for OT&E and LFT&E, the program office must coordinate the draft TEMP/T&E strategy with DOT&E staff early and often and must submit the final product for the DOT&E's review and approval no later than 30 calendar days before the decision point that the TEMP/T&E strategy is informing. The timeline for the delivery of these products may be tailored with mutual consent among the DOT&E, OTA, and LFT&E organizations and the program office. OT&E and LFT&E will not be conducted until the DOT&E has approved the program's TEMP/T&E strategy, including the projected level of funding.

b. For programs that are not on the T&E Oversight List for OT&E and LFT&E, the program manager must submit the final TEMP/T&E strategy to the designated MDA for review and approval no later than 30 calendar days before the decision point that the TEMP/T&E strategy is informing. The timeline for the delivery of these products may be tailored with mutual consent among the MDA, OTA, LFT&E organizations, and program office. OT&E and LFT&E will not be conducted until the MDA has approved the program's TEMP/T&E strategy, including the projected level of funding.

SECTION 4: TEMP/T&E STRATEGY PROCESS

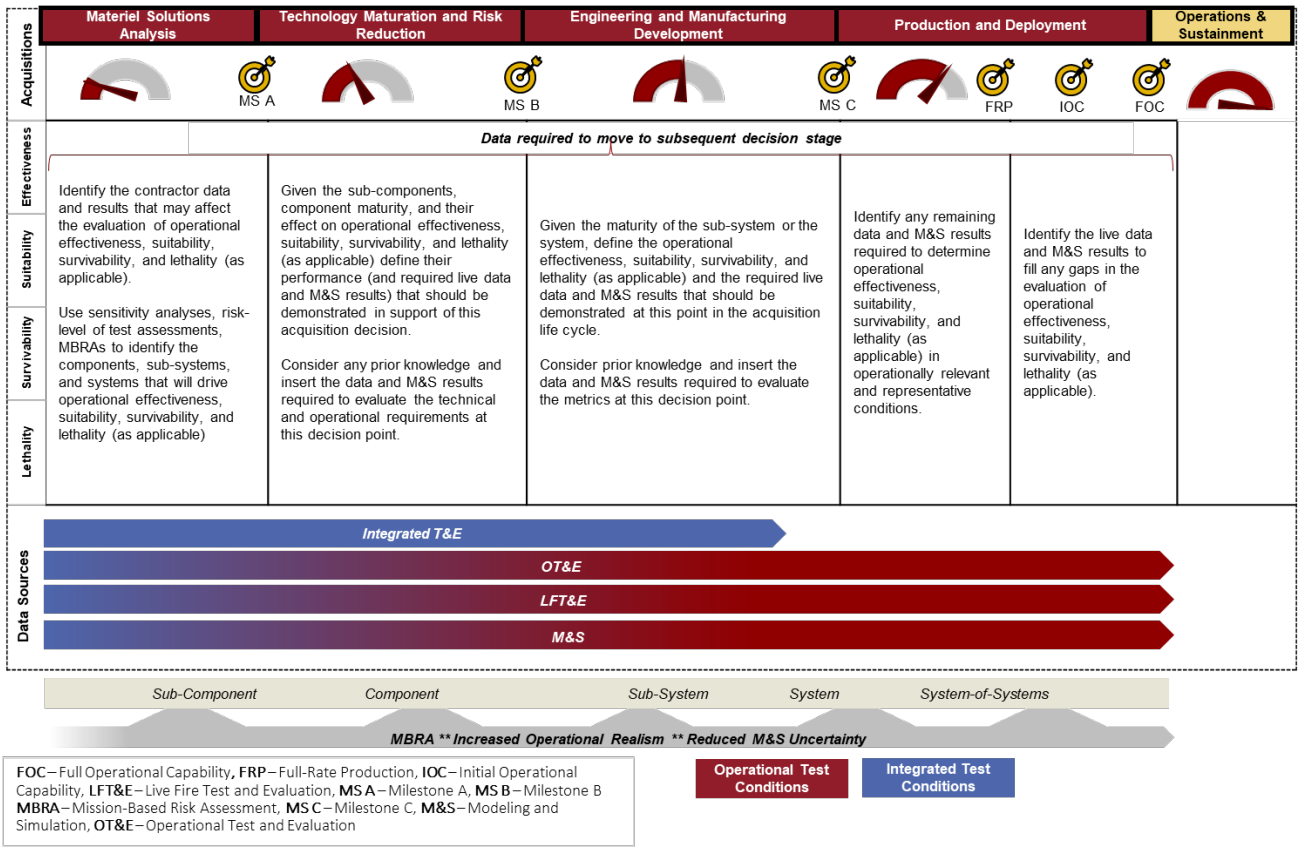
4.1. TEMP/T&E STRATEGY PLANNING.

TEMP/T&E strategy planning must include the review of program products. See Table 1 in Appendix 4A for a list of products that inform or are informed by the TEMP/T&E strategy. The TEMP/T&E strategy must include sufficient context to justify the proposed T&E scope and resources. The TEMP/T&E strategy may be delivered in a digital environment or a traditional document format. Table 2 in Appendix 4A lists the three main sections of a TEMP/T&E strategy and the level of information that must be included in TEMP/T&E strategy regardless of the chosen delivery format or acquisition pathway. If the TEMP/T&E strategy is delivered in a digital format (e.g., smart document), it must include a configuration management plan to ensure traceability and visibility of any TEMP/T&E strategy changes to key stakeholders.

a. IDSK.

(1) The TEMP/T&E strategy planning includes the development of an IDSK. An overview of the intent of an IDSK is shown in Figure 1 for a program using the major capability acquisition (MCA) pathway.

Figure 1. Notional Overview of the Intent of the IDSK



(2) The T&E WIPT/ITT must plan and update the IDSK for acquisition and other program decisions to maximize the value of the planned T&E events in support of the next acquisition or program decision(s). The IDSK must identify the data and M&S results at the sub-component, component, sub-system, system, and system-of-systems level that need to be collected during these events to support the evaluation of operational effectiveness, suitability, survivability, and lethality (as applicable) in support of:

(a) Interim Acquisition Decisions.

Live data and M&S results in support of this decision will inform preliminary DoD system operational effectiveness, suitability, survivability, and lethality (as applicable).

(b) Minimum Capability Fielding and Full-Rate Production Decisions.

Live data and M&S results in support of this decision will inform determination of operational effectiveness, suitability, survivability, and lethality (as applicable) tailored to the intended release (for programs will multiple planned minimum capability fielding releases) or full-rate production decision.

(c) Post-fielding Incremental Updates.

A program may have multiple post-fielding updates or releases. Live data and M&S results in support of these releases will inform updates to operational effectiveness, suitability, survivability, and lethality (as applicable).

b. Risk-Based Level of Test Assessment

(1) The TEMP/T&E strategy planning must include a risk-based level of test assessment to determine how much independent testing is necessary and how much data can be pulled from earlier tests for each of the identified program or acquisition decisions. Example factors that may inform the level of test include, but are not limited to:

(a) Complexity of the system under test.

(b) Degree of user engagement.

(c) Quality of requirements.

(d) Quality of fielding planning.

(e) Degree to which test environments reflects operations.

(f) Adequacy of CT&E and DT&E.

(g) Quality and extent of contractor support.

(h) Insight into current development processes and product quality.

(i) Sensitivity to system failures or compromise.

(2) Periodic updates of this assessment throughout the DoD system's acquisition life cycle will enable a more accurate evaluation of the risk profile.

c. MBRA.

(1) The TEMP/T&E strategy planning must include the MBRA to inform OT&E and LFT&E scope. Figure 2 in Appendix 4A describes the MBRA steps using the system-theoretic process analysis to enable adequate and efficient characterization of system designs, prioritization of vulnerabilities, discerning potential attack engagement conditions, and the ultimate evaluation of threat effects on the mission. The MBRA will consider the mission (e.g., unit equipped with the system), the operationally relevant environment (e.g., climate, terrain, vegetation), and opposing forces including but not limited to kinetic, non-kinetic threats, and threats unique to AI components of the DoD system, if applicable.

(2) The MBRA must evaluate the risks and vulnerabilities of the DoD system against the full spectrum of expected threats, including their combined effects, within the context of its intended operational missions. The evaluation includes, but is not limited to:

(a) System and mission integration to evaluate how individual system components, tactics, and support elements collectively contribute to mission success. This integrated assessment ensures that risks are not viewed in isolation but in the context of the system's overall mission performance.

(b) Threat-based scenarios to ensure the MBRA is grounded in realistic threat scenarios, considering current and future adversarial capabilities. This involves analyzing potential adversary actions and their impacts on the mission, allowing for a more comprehensive understanding of vulnerabilities in support of each acquisition decision.

(c) Dynamic process to reflect the dynamic nature of technology and threats as the system matures through its development life cycle, incorporating new data and insights from testing, operational feedback, and intelligence updates.

(d) Quantitative and qualitative analysis, including but not limited to statistical models and simulations, expert judgment, and scenario-based evaluations.

(e) Decision support to provide decision-makers with actionable insights. This involves identifying critical vulnerabilities, prioritizing risk mitigation strategies, and offering recommendations to enhance system design, testing, and tactics.

d. Input to Acquisition Contracts.

An early TEMP/T&E strategy outlining T&E focus, scope, and resources must be included in requests for proposals to inform the development of acquisition contracts. The terms of acquisition contracts must enable T&E personnel to secure access to contractor information, including, but not limited to:

(1) Contractor's test plans before testing begins, test data and reports, inclusion of the T&E WIPT/ITT as observers of CT&E events and design reviews, and delivery of a requirement traceability matrix supporting contractor test plans.

(2) Physical access to contractor facilities, the system's developmental networks, cloud infrastructure, M&S tools, digital engineering artifacts including digital twins, and supplier environments.

(3) Data on system evaluations of relevant prime contractor facilities and supplier environments including developmental, test, and manufacturing environments, processes, and tools to the fullest extent possible.

(4) Contractor support for T&E WIPT/ITT and T&E activities (e.g., use of contractor systems integration laboratories, attack surface analysis, MBRAs).

(5) Contractor's mitigation or remediation plans and outcomes in case government testing identifies mission capability impacting deficiencies and exploitable vulnerabilities.

(6) Data used in the training process of AI algorithms documented in data cards, a methodology and metrics for conducting T&E on AI components of the DoD system, and data from algorithm evaluations.

4.2. TEMP/T&E STRATEGY PREPARATION.

The program manager, in conjunction with the T&E WIPT/ITT, must develop the TEMP/T&E strategy in accordance with the requirements outlined in Table 2 in Appendix 4A. T&E WIPT/ITT must establish a TEMP/T&E strategy readiness review process to monitor the status of the TEMP/T&E strategy preparation and its readiness for final approval. The readiness review process will ensure that the TEMP/T&E strategy complies with this issuance.

APPENDIX 4A: DETAILED TEMP/T&E STRATEGY PRODUCT REQUIREMENTS

Table 1. Program Products that Inform or are Informed by the TEMP/T&E Strategy Development

Program Products	OT&E and LFT&E Equities
Acquisition Program Baseline	States the threshold and objective values for the cost, schedule, and performance requirements for a program. The performance requirements are linked to the program goals, including T&E goals.
Acquisition Strategy	Identifies and describes the acquisition approach to manage program risks and meet program objectives. Guides program execution across the entire program life cycle and is updated at every major milestone and review. Affects TEMP/T&E strategy focus and scope.
Analysis of Alternatives	Assesses critical technology elements associated with each proposed materiel solution, including technology maturity, integration risk, manufacturing feasibility, and technology maturation and demonstration needs. T&E stakeholders' input is critical to this analysis.
Capability Development Document or Requirements Document	Specifies capability requirements in terms of developmental key performance parameters, key system attributes, additional performance attributes, and other related information necessary to support development of one or more increments of a materiel solution. T&E stakeholders' input is critical to the development of this document.
Capability Needs Statement, Concept of Operations, or Concept of Employment	Captures, at a high level, mission deficiencies or enhancements to existing operational capabilities as they relate to the overall threat environment. Describes a proposed system concept and how that concept would be operated in an intended environment. Capability needs, concepts of operations, and employment will affect the TEMP/T&E strategy focus and scope.
Cost Analysis Requirements Description	Describes the acquisition program for purposes of preparing both the DoD Component cost estimate and the independent cost estimate. T&E activities must be accounted for in these estimates.
Cybersecurity Strategy	Details how a program will ensure that a DoD system can protect and defend itself from a cyberattack. The strategy is created and maintained by the program office and appended to the program protection plan and will be used to inform the TEMP/T&E strategy.
Information Support Plan	Describes systems dependencies and interface requirements in sufficient detail to enable T&E, and verification of information technology and national security systems' interoperability and supportability requirements.

Table 1. Program Products that Inform or are Informed by the TEMP/T&E Strategy Development, Continued

Program Products	OT&E and LFT&E Equities
Intellectual Property Strategy	Identifies and describes the management of delivery and associated license rights for all software and related materials necessary to meet operational, cybersecurity, and supportability requirements. T&E stakeholders' input is critical to the development of this document.
Joint Capabilities Integration and Development System (JCIDS) Documentation	Ensures the capabilities required by the joint warfighter are identified, along with their associated operational performance criteria or requirements, to successfully execute the assigned missions. T&E stakeholders' input is critical to the development of the JCIDS document.
Life Cycle Mission Data Plan	Defines specific intelligence mission data requirements for a program and becomes more detailed as the DoD system progresses throughout the acquisition life cycle. Affects the focus and scope of the TEMP/T&E strategy.
Life Cycle Sustainment Plan	Describes the approach and resources necessary to develop and integrate sustainment requirements into the DoD system design, development, T&E, fielding, and operations.
Operational Mode Summary and Mission Profile	Contains a description of the concept of employment, describes all types of operational modes that apply to a system, and shows the anticipated relative frequency of occurrence of these modes during the life of the system as it functions across the anticipated operational environment. It is a roll-up of the DoD system's wartime usage for the number of missions and combat operations (i.e., mission profiles) that are being analyzed to determine (as appropriate) the total operating time, alert time, and calendar time associated with each mission profile.
Program Management Plan	Contains the overall program governance, information on initiatives and projects, benefits realization, related management plans and procedures, timelines, and the methods used to plan, monitor, and control the program as it progresses through the acquisition life cycle.
Program Protection Plan	Manages the risks to U.S. capability element that contributes to the warfighter's technical advantage, mission-critical functions and components, critical technical information, and DoD system data. Affects the focus and scope of the TEMP/T&E strategy.
Requirements Management Plan	Documents the necessary information required to effectively manage project requirements from definition, through traceability, to delivery. It is created during the planning phase of the program.
Security Plan or Security Assessment Plan	Documents DoD system's security requirements, such as system boundary description, system interconnection agreements, contingency plan, security configurations, and incident response plan. Affects the focus and scope of the TEMP/T&E strategy.

Table 1. Program Products that Inform or are Informed by the TEMP/T&E Strategy Development, Continued

Program Products	OT&E and LFT&E Equities
Supply Chain Management Plan	Captures customer-driven materiel requirements through the acquisition, maintenance, transportation, storage, and delivery of materiel to customers; managing materiel returns, movement of reparable materiel to and from maintenance facilities; and ensuring the exchange of information among customers, maintainers, supply chain managers, and suppliers. Affects the focus and scope of the TEMP/T&E strategy.
Systems Engineering Plan	Details the execution, management, and control of the technical aspects of an acquisition program from conception to disposal. Outlines how the systems engineering process is applied and tailored to meet objectives for each acquisition phase. Affects the focus and scope of the TEMP/T&E strategy.
User Agreement	A commitment between the sponsor and the program manager for continuous user involvement and assigned decision making authority in the development and delivery of software capability releases. Is critical to the development of the TEMP/T&E strategy.
Validated Online Lifecycle Threat Report	Supports capability development and program management assessments of mission needs and capability gaps against likely threat capabilities. Is critical to the focus and scope of the TEMP/T&E strategy.

Definitions of the terms used in Table 1 are maintained on the Defense Acquisition University Website at https://www.dau.edu/tools/t/DAU-Glossary.

Table 2. TEMP/T&E Strategy Requirements

Sub-Section	Description
Section 1.1: Purpose	• Describe the purpose of the TEMP/T&E strategy and state whether this document is new, an addendum, or an update. • Indicate the program's acquisition pathway and describe or reference the overarching acquisition strategy, including incremental capability delivery, if applicable. Include a summary of any previous programmatic decisions to date. • State the upcoming acquisition or program decisions that the TEMP/T&E strategy supports.
Section 1.2: Mission and DoD System Description	**Mission Description and Operational Environment** • List or reference the joint warfighting functions or concepts that this DoD system is intended to support and the criticality of this DoD system to the success of its intended mission threads. • Describe the intended mission threads of the units equipped with the DoD system, concepts of employment and operations, theaters of operation, and users. Reference relevant artifacts, including any in development. Include a graphic that depicts the intended mission of the DoD system and its dependencies on other systems. • Describe the DoD system's intended operating environments, and the relevant kinetic and non-kinetic threats that the system (hardware and software) will encounter. Describe and justify the threats that the DoD system will be evaluated against. Reference the Validated Online Lifecycle Threat Report or equivalent threat intelligence products. Describe any constraints imposed by the operating environments. **Description of DoD System, Capabilities, and Requirements** • Describe the capabilities that the DoD system is intended to deliver and their significance to support joint warfighting functions or concepts. Provide comparison to any related legacy systems, including new features or capabilities intended to provide improvements, or address obsolescence issues, if applicable. • Describe the DoD system design with a focus on those features that would affect the test design or scope. Such features include both hardware (e.g., sub-components, components, and sub-systems) and software (e.g., architecture, supply chain components, system and user interfaces, and security levels) for the planned increments. Include survivability enhancement features. • Describe the DoD system configuration and variants, if applicable. • Document mission critical interfaces to external systems or programs. Using an appropriate format (e.g., a system view-1) as an example of a network architecture diagram, detail interoperability requirements with existing or developing systems, and identify the logical and physical points where the system interfaces with its environment. • Describe how software is hosted in the development environment, production environment, and end user location(s). Include the architecture of the production environment (e.g., cloud, distributed), if applicable. • Describe: – Software-enabled features of the system, including control systems, databases, algorithms, system boundaries, and any AI-enabled or autonomous capabilities. – The software integration environment, if applicable. – Who controls access to data and how users gain access, giving special consideration for data classification. • Identify the technical and operational performance requirements (e.g., key performance parameters, key system attributes, survivability requirements) as determined by the user. Reference requirements and concept of operations documents.

Table 2. TEMP/T&E Strategy Requirements, Continued

Sub-Section	Description
Section 1.3: T&E Management	• Identify key members of the T&E WIPT/ITT including its sub-groups and their members. Provide accurate contact information. Include roles and responsibilities and describe established agreements on how OT&E and LFT&E members will be integrated early into the developmental activities and throughout the system life cycle.
Section 1.4: Data Management	• Describe the data management plan for making live data, M&S results, and other information critical to meeting T&E objectives visible, accessible, understandable, linked, trusted, interoperable, and secure. For example, describe: – How data will be collected and hosted. – Who controls access to data and how users gain access, giving special consideration for data classification.
Section 2.1: IDSK	• Briefly describe the risk-based level of test assessment and MBRA approach and outcome. • Include the IDSK that identifies the acquisition and program decisions and the live data and M&S results that will be collected in the identified CT&E, DT&E, integrated T&E, OT&E, LFT&E, and M&S events to evaluate the technical and operational performance in support of those decisions. The IDSK will include: – Operational effectiveness, suitability, survivability, and lethality (as applicable) measures and metrics, in accordance with Paragraphs 3.3. and 3.4. to track their progress across the acquisition life cycle. – Live data and M&S results required to support the evaluation of either preliminary or final operational effectiveness, suitability, survivability, and lethality (as applicable) for each identified acquisition or program decision. The IDSK will identify opportunities for integrated T&E. – Live data required for M&S VV&A across the acquisition life cycle in accordance with DoDM 5000.102.
Section 2.2: Integrated Test Program Schedule	• Display a schedule that includes timelines relative to acquisition and program decisions and associated T&E plans, and reporting requirements to support those decisions, in alignment with the IDSK. Include timelines related to delivery of test assets and the development and VV&A of critical test enablers (e.g., threats). – Ensure sufficient time between test periods and between M&S events to allow for corrections of deficiencies. – Ensure sufficient after-test periods for analysis, reporting, and stakeholder review prior to the supported decision. • List all required certifications and dates. The certifications will not be granted before the required test events. The certifications are entrance criteria or requirements to support acquisition decisions.

Table 2. TEMP/T&E Strategy Requirements, Continued

Sub-Section	Description
Section 2.3: Data Sources, Test Event, and M&S Event Descriptions	• Describe T&E events identified in the IDSK, including interoperability testing and certification in accordance with DoDI 8330.01 (when applicable). The level of information for such events may vary depending on the execution date. The scope will vary depending on the acquisition pathway and the acquisition decision. The details must be sufficient to adequately justify scope, secure the required resources, and must include but not be limited to: – The name, rationale, and objective of each event. – Description of major live test data or M&S results that will be generated to inform the evaluation of operational performance in support of relevant program decisions. For integrated T&E events, specify the data or M&S results intended to be used to support OT&E and LFT&E objectives. – Description of the event environment, to include the configuration of the sub-component, component, sub-system, system, or system-of-systems under test; presence of any operators or users during test; environmental conditions; and the threat laydown. – The scope of the event (e.g., length of time, number of tests or runs) or the process by which scope will be determined. – Description of the relevant response variables (e.g., factors and levels), sample size, and where appropriate, supporting statistical measures of merit (e.g., power and confidence). – Descriptions of any entrance criteria. – References to any current or future artifacts that will provide additional detailed information, such as test plans. – Information about the live data to be used for any M&S VV&A to inform acquisition and program decisions, pursuant to DoDM 5000.102.
Section 2.4: Test and M&S Event Table	Include a document approval matrix listing the T&E events and: • The organization responsible for delivering the test or M&S plan and the required V&V plan and accreditation plan for each component of testing supporting the VV&A. • The approved test or M&S dates, including the V&V dates. • The test or M&S plan reviewers and approval authorities, including accreditation authorities for M&S.
Section 2.5: T&E Program Risks and Limitations	• Discuss and quantify where possible any T&E risks and limitations, including but not limited to test design, test environment, and test execution that may affect: – The understanding of the technical and operational performance. – The warfighter. – Program cost and schedule. • Examples of potential risks and limitations may be related to unavailability of the operational test asset; deficiencies in test infrastructure, instrumentation, targets, M&S, and threat surrogates; logistics supportability; and test delays. • For each limitation and identified risks, offer mitigation solutions and identify the additional resources required to implement those solutions.

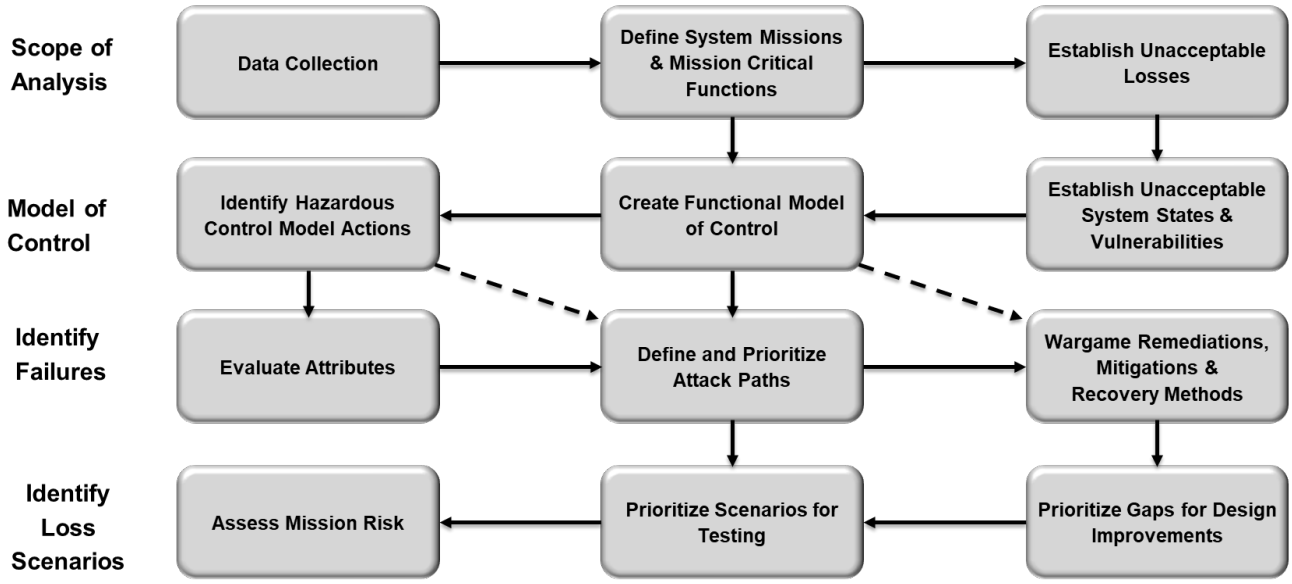
Table 2. TEMP/T&E Strategy Requirements, Continued

Sub-Section	Description
Section 3.1: T&E Resources – Test Articles, Threats, Targets, and Facilities	Summarize the test resources required to execute the TEMP/T&E strategy. Map the resources to the specific test events or data sources, outlined in Section 2.3. in this table, and to the organization that will provide the resource. Include long lead items and estimated costs for integrated T&E, OT&E, LFT&E, and M&S VV&A for these resources at the specific program element-level by fiscal year. **Test Articles** • List the number of and timing requirements for all test articles. • Indicate whether prototypes, test fixtures (e.g., sub-systems developed specifically for testing), or production-representative articles are to be used and how they will be configured. • Include external systems (e.g., networks, ground support, platforms) with which the DoD system under test must interoperate if testing a system-of-systems or family-of-systems. **Test Facilities, Sites, and Ranges** • List all test facilities or sites required to meet the identified T&E and VV&A objectives. Include when each range, facility, or system will be required to support the test and M&S activities and any special characteristics that will be required. • For software systems, describe needs of the environments where testing will occur, including proposed test platforms, infrastructure, and plans to accredit the test environments for OT&E and LFT&E. • Summarize the results of a cost/benefit analysis in those cases where available government test facilities (or other resources) are not used and identify the authority that reviews the cost/benefit analysis and approves the use of non-government test facilities. **Test Instrumentation and Support Equipment** • List all required test instrumentation (embedded or add-on), support equipment, and special tools or automated software, including government-furnished equipment or tools that must be built or acquired specifically to conduct the test program. • Identify any special tools or software that analysts or evaluators will need to read or analyze the data from the instrumentation. • Identify how VV&A will be accomplished for M&S critical to the evaluation of operational effectiveness, suitability, survivability, and lethality (as applicable), and acquisition decisions. **Threat Representation, Intelligence Mission Data, Test Targets, and Expendables** • List threat systems, targets, and expendables. If surrogates are used, include resources needed to accredit the surrogate and describe any limitations. **M&S** • Provide a table of all M&S that will support the evaluation, including resources needed to support VV&A (e.g., resources needed to collect, reduce, and analyze the live test data in support of VV&A). **Data** • Summarize information about instrumentation, special tools, software, storage equipment, and any other resources needed to manage, distribute, handle, document, store, and protect the data.

Table 2. TEMP/T&E Strategy Requirements, Continued

Sub-Section	Description
Section 3.2: T&E Personnel and Special Requirements	**Test Personnel and Operator Training** • List units and operators for test articles during events, including size, location, and type of unit required. Include operator training and test support facility personnel as well as the system subject matter experts. Include contractor personnel and specify the kinds of support that they must provide. • List support for friendly and threat operational forces needed during test. • Include number of T&E personnel and resources for the WIPT/ITT. **Federal, State, and Local Requirements** • List permits and appropriate agency notifications needed for all test efforts to comply with Federal, State, and local environmental regulations. • Specify any National Environmental Policy Act documentation that must be completed before specific test activities can take place. • Describe how environmental compliance requirements will be met. **Special Requirements** • Describe any special requirements that drive resources, such as explosive ordinance disposal, on-orbit space system considerations, shock and vibration, or corrosion prevention and control. • List electromagnetic spectrum deconfliction and management and environmental control requirements.
Section 3.3: T&E Budget	**Test Budget** • Detail the costs of T&E and the VV&A outlined in the IDSK. Cost for M&S used in testing should be included as a sub-category under CT&E, DT&E, OT&E, or LFT&E. • Show the allocations of that funding to specific tests, organizations, and contracts by fiscal year and its alignment with the program objective memorandum funding levels. • Identify where non-government test resources are used.

Figure 2. Example of an MBRA Process



SECTION 5: TEMP/T&E STRATEGIES FOR DIFFERENT ACQUISITION PATHWAYS

The program manager must charter a T&E WIPT/ITT at the initiation of the acquisition program, in parallel with the development of the acquisition strategy, to deliver the TEMP/T&E strategy following the outline in Table 2 of Appendix 4A for any acquisition pathway or TEMP/T&E strategy format. The approved TEMP/T&E strategy will support the initial acquisition decision and will be updated and re-approved for each subsequent acquisition decision outlined for each of the adaptive acquisition framework pathways. The scope of the TEMP/T&E strategy will be tailored to provide the live data and M&S results required to evaluate operational effectiveness, suitability, survivability, and lethality (as applicable) needed to meet the acquisition strategy and decision objectives unique to each of the acquisition pathways.

a. Urgent Capability Acquisition Pathway.

To support the development milestone decision, the program manager will charter a T&E WIPT/ITT in the pre-development phase to inform the tailored acquisition strategy and acquisition program requirements and develop a T&E strategy, pursuant to this issuance. The T&E strategy for a program on the urgent capability acquisition pathway will include the sections and sub-sections outlined in Table 2 of Appendix 4A, with caveats unique to the urgent capability acquisition pathway highlighted in Table 3.

Table 3. Urgent Capability Acquisition Pathway T&E Strategy Sections

Sub-Section	Unique Considerations for the Urgent Capability Acquisition Pathway
1.1 Purpose	See Table 2.
1.2 Mission and DoD System Description	See Table 2 – Include the joint urgent operational need, joint emergent operational need, or urgent operational need.
1.3 T&E Management	See Table 2.
1.4 Data Management	See Table 2.
2.1 IDSK	See Table 2 – Testing will be rigorous enough to rapidly evaluate critical operational issues.
2.2 Integrated Test Program Schedule	See Table 2.
2.3 Data Sources, Test Event, and M&S Event Descriptions	See Table 2: • Provide a top-level description of each type of T&E event. • For OT&E and LFT&E, focus on capturing pre-deployment LFT&E and operational assessments, post-deployment LFT&E, and the post-deployment assessment.
2.4 Test and M&S Event Table	See Table 2 – For programs on T&E Oversight List for OT&E and LFT&E: • Pre-deployment OT&E and LFT&E plans must be submitted to the DOT&E for approval at the development milestone. • Post-deployment OT&E and LFT&E plans must be submitted to the DOT&E for approval at the production and deployment milestone.
2.5 T&E Program Risks and Limitations	See Table 2.
3.1 T&E Resources – Test Articles, Threats, Targets, and Facilities	See Table 2.
3.2 T&E Personnel and Special Requirements	See Table 2.
3.3 T&E Budget	See Table 2.

b. Middle Tier of Acquisition (MTA) Pathway.

The program manager must charter a T&E WIPT/ITT in the planning phase to inform the acquisition strategy and acquisition program requirements and to develop the TEMP/T&E strategy, pursuant to this issuance, in support of the transition plan and outcome determination. The TEMP/T&E strategy for a program on the MTA pathway must:

(1) Be proportionate with technology, program, system, and mission objectives.

(2) Consider the OT&E and LF&E requirements in the context of the intended transition plan.

(3) Be treated as entrance criteria to formally enter the MTA pathway and meet the condensed MTA pathway timelines.

(4) Include the sections and sub-sections outlined in Table 2 of Appendix 4A, with caveats unique to the MTA pathway highlighted in Table 4. The TEMP/T&E strategy may be included as part of the acquisition strategy.

(5) Be approved by the DOT&E by the end of the planning phase for DoD systems on the T&E Oversight List for OT&E and LFT&E.

Table 4. MTA Baseline TEMP/T&E Strategy Sections

Sub-Section	Unique Considerations for the MTA Pathway
1.1 Purpose	See Table 2.
1.2 Mission and DoD System Description	See Table 2 – Capture approved requirements that validate the rationale for using the MTA pathway.
1.3 T&E Management	See Table 2.
1.4 Data Management	See Table 2 – Ensure access to operational demonstration (Ops Demo) and other live data, M&S results, and program information.
2.1 IDSK	See Table 2 – Include the risk-based level of test assessment and MBRA approach and outcome, and the IDSK. **Rapid Prototyping** • In IDSK, describe the T&E events, data, and M&S results necessary to measure technology maturity and prototype performance and how the program will achieve a residual operational capability in support of the outcome determination. • Include evaluation criteria that measure operational performance, including, but not limited to, safety, interoperability, reliability, and survivability. **Rapid Fielding** • In IDSK, describe the T&E events, data, and M&S results necessary to evaluate how the proposed products and technologies meets performance for current operational purposes. • Include evaluation criteria and milestones to demonstrate operational performance of the proposed products or technologies for current operational purposes.
2.2 Integrated Test Program Schedule	See Table 2.
2.3 Data Sources, Test Event, and M&S Event Descriptions	See Table 2. **Rapid Prototyping** • For OT&E and LFT&E, focus on capturing Ops Demo and LFT&E events informed by previous testing (e.g., during prototype development). **Rapid Fielding** • For OT&E and LFT&E, focus on capturing Ops Demo and LFT&E events informed by prior testing and specify the additional testing necessary to address differences between the tested prototype and the planned production configuration to support production within six months of program start.
2.4 Test and M&S Event Table	See Table 2 – For programs on the T&E Oversight List for OT&E and LFT&E, the TEMP/T&E strategy, OT&E plans, and LFT&E plans must be submitted to the DOT&E for approval prior to test execution.
2.5 T&E Program Risks and Limitations	See Table 2.
3.1 T&E Resources – Test Articles, Threats, Targets, and Facilities	See Table 2.
3.2 T&E Personnel and Special Requirements	See Table 2.
3.3. T&E Budget	See Table 2.

c. MCA Pathway.

(1) The program manager must charter a T&E WIPT/ITT in the materiel solutions analysis phase to inform the acquisition strategy and acquisition program requirements and to develop a TEMP, pursuant to this issuance, required to support the Milestone A decision and inform the entry into the technology maturation and risk reduction phase. The TEMP at Milestone A must include an early operational assessment strategy and the LFT&E strategy. The TEMP must be updated and re-approved for each subsequent MCA pathway decision outlined in DoDI 5000.98.

(2) The TEMP at Milestone B must include CT&E, DT&E, the operational assessment, initial OT&E (IOT&E), and updated LFT&E strategies to inform the remaining acquisition decisions. The MDA will approve entry into the engineering and manufacturing development phase with the TEMP as one of the inputs and formally initiate the program by approving the acquisition program baseline.

(3) The TEMP at Milestone C is an update of the TEMP at Milestone B given the increased knowledge of the operational effectiveness, suitability, survivability, and lethality (as applicable) of the DoD system. The MDA's approval at Milestone C will authorize the program to proceed to the production and development phase, enter low-rate initial production, or begin limited deployment, and award contracts for the applicable phase.

(4) The MDA will assess the results of IOT&E, LFT&E, and initial manufacturing to determine whether to proceed to full-rate production decision. The TEMP must be updated to capture any follow-on OT&E and LFT&E events in accordance with DoDI 5000.98.

(5) The TEMP in support of each of the MCA decision must include an IDSK, updated risk-based level of test assessment and MBRA outcomes, and the detailed scope of T&E events focused on the evaluation of technical requirements, operational effectiveness, suitability, survivability, and lethality (as applicable) required to inform each of the MCA decisions.

(6) The T&E WIPT/ITT must leverage all available live data and M&S results to update the TEMP in support of the next decision. The TEMP will include the sections and sub-sections outlined in Table 2 of Appendix 4A with caveats unique to the MCA pathway highlighted in Table 5.

Table 5. MCA Baseline TEMP/T&E Strategy Sections

Sub-Section	Unique Considerations for the MCA Pathway
1.1 Purpose	See Table 2.
1.2 Mission and DoD System Description	See Table 2 – Include JCIDS requirements.
1.3 T&E Management	See Table 2.
1.4 Data Management	See Table 2.
2.1 IDSK	See Table 2. • **Milestone A –** In IDSK, describe the T&E events, data, and results necessary to measure technology maturity and prototype performance and to determine operational effectiveness, suitability, survivability, and lethality (as applicable). • **Milestone B –** In IDSK, describe the T&E events, data, and M&S results necessary to necessary to demonstrate compliance with contractual and technical requirements; to demonstrate the ability to achieve key performance parameters and key system attributes; and to determine operational effectiveness, suitability, survivability, and lethality (as applicable). • **Milestone C –** In IDSK, describe T&E events, data, and M&S results necessary to determine operational effectiveness, suitability, survivability, and lethality (as applicable).
2.2 Integrated Test Program Schedule	See Table 2.
2.3 Data Sources, Test Event, and M&S Event Descriptions	See Table 2.
2.4 Test and M&S Event Table	See Table 2.
2.5 T&E Program Risks and Limitations	See Table 2.
3.1 T&E Resources – Test Articles, Threats, Targets, and Facilities	See Table 2 – Identify quantity of test articles procured for IOT&E and LFT&E test events no later than Milestone B.
3.2 T&E Personnel and Special Requirements	See Table 2.
3.3 T&E Budget	See Table 2.

d. Software Acquisition Pathway.

(1) The program manager must charter a T&E WIPT/ITT in the planning phase to inform the capabilities needs statement, acquisition strategy, acquisition contracts, and intellectual property strategy and to develop a TEMP/T&E strategy, pursuant to this issuance, to successfully transition to the execution phase. The TEMP/T&E strategy must:

(a) Focus on the evaluation of technical and operational requirements and operational effectiveness, suitability, survivability, and lethality performance (as applicable) of the capabilities and features in support of the delivery of the minimum viable product, minimum viable capability release, and subsequent releases.

(b) Identify how T&E will inform annual value assessments and operational acceptance.

(c) Include the sections and sub-sections outlined in Table 2 of Appendix 4A, with caveats unique to the software acquisition pathway highlighted in Table 6.

(2) The T&E WIPT/ITT must leverage all available data and M&S results, including any updates to the capability needs statement, to update the TEMP/T&E strategy in support of the next decision(s).

Table 6. Software Acquisition Baseline TEMP/T&E Strategy Sections

Sub-Section	Unique Considerations for the Software Acquisition Pathway
1.1 Purpose	See Table 2.
1.2 Mission and DoD System Description	See Table 2. Capture capability needs statement or JCIDS documents information about mission deficiencies or enhancements to existing operational capabilities, features, interoperability needs, and legacy interfaces. • **System Software –** Describe the software under test as known at the time the TEMP/T&E strategy is written. Identify those aspects of the software that will influence test design. This section will answer questions such as: – Is it commercial off-the-shelf/government off-the-shelf or new development? – Is it a single configuration item or multiple applications? – Are the applications independent (severable) or interdependent? – If there are multiple applications, who is the systems integration lead to bring the applications together? – What legacy system(s) does this system replace, if any? – Which legacy systems (if any) will still be operational at minimum viable capability release and will these systems be tested concurrently? • **System Hardware –** Describe the hardware that will host the software in the development environment, production environment, and at the end user location as well as the construct of the production environment (e.g., cloud, distributed). For the software embedded in a DoD system, the description of the DoD system on which the software will reside is the hardware at the end user location.
1.3 T&E Management	See Table 2.
1.4 Data Management	See Table 2.

Table 6. Software Acquisition Baseline TEMP/T&E Strategy Sections, Continued

Sub-Section	Unique Considerations for the Software Acquisition Pathway
2.1 IDSK	See Table 2. • Document risk-based level of test assessment and MBRA outcomes. • Document the integration approach of OT&E and LFT&E into the development process. • In IDSK, capture live data and M&S results required to inform capability release or acquisition and program decisions (e.g., unique software factory control gate determinations) across the development life cycle. • Describe how automated test management tools will support IDSK adjustment over time to capture both the progress against software requirements and the changes to those requirements. • Include evaluation criteria that measure operational effectiveness, suitability, survivability, and lethality (as applicable) including software performance, reliability, suitability, interoperability, survivability. • For embedded software, align test and integration with the testing and delivery schedules of the overarching system in which the software is embedded, including aligning resources and criteria for transitioning from development to test and operational environments.
2.2 Integrated Test Program Schedule	See Table 2. • Identify T&E events aligned with product roadmap. • Overlay T&E process to regular and iterative deliveries of software capabilities.

Table 6. Software Acquisition Baseline TEMP/T&E Strategy Sections, Continued

Sub-Section	Unique Considerations for the Software Acquisition Pathway
2.3 Data Sources, Test Event, and M&S Event Descriptions	See Table 2. • Describe the application and role of automated and manual T&E. • Describe the process for identifying and escalating software deficiencies and feedback mechanisms throughout the acquisition life cycle. • Describe plans to evaluate operational suitability (leveraging users throughout the development life cycle) within the rapid software development cadence, to include human-systems integration (e.g., human machine interface, system usability, user workload, user trust in the system, reliability, maintainability, availability, and training). • Note how OT&E and LFT&E will leverage software health-related reporting (e.g., performance, security, anomalies). • Describe plans to leverage users throughout the development life cycle. • Describe the VV&A for the digital representation of the production environment, used as the software test environment and pre-production or staging. • Describe the approach for testing the software in the context of the hardware with which it will eventually be integrated. This will include information on resources such as model-based environments, digital twins, and simulations as well as plans for tests on a production-representative system. • Include additional certification requirements for data and release restrictions.
2.4 Test and M&S Event Table	See Table 2.
2.5 T&E Program Risks and Limitations	See Table 2.
3.1 T&E Resources – Test Articles, Threats, Targets, and Facilities	See Table 2 – Identify tools and resources necessary to assist in data collection and transparency. For embedded software, describe type and quantity of host platforms required to support testing.
3.2 T&E Personnel and Special Requirements	See Table 2.
3.3 T&E Budget	See Table 2.

e. Defense Business Systems (DBS) Acquisition Pathway.

(1) The program manager must establish a T&E WIPT/ITT during the capability need identification phase to inform the capability and information requirements and acquisition strategy and to develop a TEMP/T&E strategy, pursuant to this issuance, in support of the limited deployment authority to proceed (ATP) and the full deployment ATP.

(a) Limited Deployment ATP(s).

The MDA and the functional sponsor must consider the results of testing and approve deployment of the release to limited portions of the end user community. Multiple limited deployments may be authorized at the same decision point or delegated to a lower decision authority.

(b) Full Deployment ATP.

The MDA considers the results of limited deployment(s), OT&E, and LFT&E, and approves deployment to the entire user community. IOT&E will be conducted before the full deployment ATP.

(2) The TEMP/T&E strategy must include the sections and sub-sections outlined in Table 2 of Appendix 4A with the caveats unique to the DBS pathway highlighted in Table 7.

Table 7. DBS Baseline TEMP/T&E Strategy Sections

Sub-Section	Unique Considerations for the DBS Pathway
1.1 Purpose	See Table 2.
1.2 Mission and DoD System Description	See Table 2 – Capture functional sponsor business requirements.
1.3 T&E Management	See Table 2.
1.4 Data Management	See Table 2.
2.1 IDSK	See Table 2. • Document initial risk-based level of test assessment and MBRA outcomes. • Describe the integration approach of OT&E and LFT&E into the development process. • In IDSK include evaluation criteria that measure operational effectiveness, suitability, survivability, and lethality (as applicable) including software performance, reliability, suitability, and interoperability.
2.2 Integrated Test Program Schedule	See Table 2.
2.3 Data Sources, Test Event, and M&S Event Descriptions	See Table 2. • Describe the application and role of automated and manual T&E. • Describe plans to leverage users throughout the development life cycle.
2.4 Test and M&S Event Table	See Table 2.
2.5 T&E Program Risks and Limitations	See Table 2.
3.1 T&E Resources – Test Articles, Threats, Targets, and Facilities	See Table 2.
3.2 T&E Personnel and Special Requirements	See Table 2.
3.3 T&E Budget	See Table 2.

f. Acquisition of Services.

The program manager must establish a T&E WIPT/ITT early to define the requirements and develop the acquisition and TEMP/T&E strategies pursuant to this issuance. The TEMP/T&E strategy will primarily focus on evaluating and assessing risk to survivability in contested cyberspace and interoperability. The TEMP/T&E strategy for the acquisition of services will include the sections and sub-sections outlined in Table 2 of Appendix 4A, with caveats unique to the acquisition of services pathway highlighted in Table 8.

Table 8. Acquisitions of Services Baseline TEMP/T&E Strategy Sections

Sub-Section	Unique Considerations for the Acquisitions of Services
1.1 Purpose	See Table 2.
1.2 Mission and DoD System Description	See Table 2 – Capture requirement sources, the outcomes to be achieved and, if performance-based, the metrics that will be used to measure the outcomes.
1.3 T&E Management	See Table 2.
1.4 Data Management	See Table 2.
2.1 IDSK	See Table 2.
2.2 Integrated Test Program Schedule	See Table 2.
2.3 Data Sources, Test Event, and M&S Event Descriptions	• See Table 2 – Plan T&E events for mission critical components and functions and potential supply chain risks in emulated and live environments. • Plan interoperability testing and certification.
2.4 Test and M&S Event Table	See Table 2.
2.5 T&E Program Risks and Limitations	See Table 2.
3.1 T&E Resources – Test Articles, Threats, Targets, and Facilities	See Table 2.
3.2 T&E Personnel and Special Requirements	See Table 2.
3.3 T&E Budget	See Table 2.

GLOSSARY

G.1. ACRONYMS.

ACRONYM	MEANING
AI	artificial intelligence
ATP	authority to proceed
DBS	defense business systems
CT&E	contractor test and evaluation
DoDD	DoD directive
DoDI	DoD instruction
DoDM	DoD manual
DOT&E	Director of Operational Test and Evaluation
DT&E	developmental test and evaluation
IDSK	integrated decision support key
IOT&E	initial operational test and evaluation
ITT	integrated test team
JCIDS	Joint Capabilities Integration and Development System
LFT&E	live fire test and evaluation
M&S	modeling and simulation
MBRA	mission-based risk assessment
MCA	major capability acquisition
MDA	milestone decision authority
MTA	middle tier of acquisition
Ops Demo	operational demonstration
OT&E	operational test and evaluation
OTA	operational test agency
T&E	test and evaluation
TEMP	test and evaluation master plan
USD(A&S)	Under Secretary of Defense for Acquisition and Sustainment
USD(I&S)	Under Secretary of Defense for Intelligence and Security
USD(R&E)	Under Secretary of Defense for Research and Engineering
V&V	verification and validation

ACRONYM	MEANING
VV&A	verification, validation, and accreditation
WIPT	working-level integrated product team

G.2. DEFINITIONS.

Unless otherwise noted, these terms and their definitions are for the purpose of this issuance.

TERM	DEFINITION
accreditation	Defined in DoDI 5000.98.
acquisition decision	Defined in DoDI 5000.98.
collateral damage effects	Defined in DoDI 5000.98.
congested environment	Defined in DoDI 5000.98.
constrained environment	Defined in DoDI 5000.98.
contested environment	Defined in DoDI 5000.98.
digital engineering	Defined in DoDI 5000.98.
digital twin	Defined in DoDI 5000.98.
human systems integration	Defined in DoDI 5000.98.
IDSK	Defined in DoDI 5000.98.
integrated T&E	Defined in DoDI 5000.98.
interim acquisition decision	Defined in DoDI 5000.98.

TERM	DEFINITION
Joint Technical Coordinating Group for Munitions Effectiveness	A group chartered with the development and maintenance of DoD tools in support of the joint targeting cycle in accordance with its charter in the January 16, 2018 Memorandum for Record.
key performance parameters	Key system capabilities that must be met to support the evaluation of operational effectiveness, suitability, survivability, and lethality (as applicable).
kinetic threat	Defined in DoDI 5000.98.
LFT&E	Defined in DoDI 5000.98.
LFT&E organizations	Defined in DoDI 5000.98.
live data	Defined in DoDI 5000.98.
MBRA	Defined in DoDI 5000.98.
mission thread	Defined in DoDI 5000.98.
model	Defined in DoDI 5000.98.
M&S VV&A	Defined in DoDI 5000.98.
non-kinetic threat	Defined in DoDI 5000.98.
operational effectiveness	Defined in DoDI 5000.98.
operational suitability	Defined in DoDI 5000.98.
operationally relevant	Defined in DoDI 5000.98.
operationally representative	Defined in DoDI 5000.98.
OT&E	Defined in DoDI 5000.98.
preliminary evaluation	Defined in DoDI 5000.98.
program decisions	Defined in DoDI 5000.98.

TERM	DEFINITION
realistic full spectrum lethality	Defined in DoDI 5000.98.
realistic full spectrum survivability	Defined in DoDI 5000.98.
recoverability	Defined in DoDI 5000.98.
risk-based level of testing	Defined in DoDI 5000.98.
scientific rigor	Defined in DoDI 5000.98.
simulation	Defined in DoDI 5000.98.
susceptibility	Defined in DoDI 5000.98.
system view-1	Addresses the composition and interaction of systems.
system-of-systems	Defined in DoDI 5000.98.
system-theoretic process analysis	Systems approach to hazard analysis based on a premise that mission degradation or accident occurs with loss of control.
T&E	Defined in DoDI 5000.98.
T&E Oversight List	Defined in DoDI 5000.98.
T&E resources	Defined in DoDI 5000.98.
validation	Defined in DoDI 5000.98.
verification	Defined in DoDI 5000.98.
vulnerability	Defined in DoDI 5000.98.

REFERENCES

DoD Directive 5000.01, "The Defense Acquisition System," September 9, 2020, as amended

DoD Directive 5141.02, "Director of Operational Test and Evaluation (DOT&E)," February 2, 2009

DoD Directive 5205.07 "Special Access Program (SAP) Policy," July 1, 2010, as amended

DoD Instruction 5000.02, "Operation of the Adaptive Acquisition Framework," January 23, 2020, as amended

DoD Instruction 5000.95, "Human Systems Integration in Defense Acquisition," April 1, 2022

DoD Instruction 5000.98, "Operational and Live Fire Test and Evaluation," December 9, 2024

DoD Instruction 8330.01, "Interoperability of Information Technology, Including National Security Systems," September 27, 2022

DoD Manual 5000.101, "Operational and Live Fire Test and Evaluation of Artificial Intelligence-Based and Autonomous Systems," December 9, 2024

DoD Manual 5000.102, "Modeling and Simulation Verification, Validation and Accreditation in Test and Evaluation," December 9, 2024

DoD Responsible AI Working Council, "U.S. Department of Defense Responsible Artificial Intelligence Strategy and Implementation Pathway," June 2022

Memorandum for Record, "Joint Technical Coordinating Group for Munition Effectiveness Aberdeen Proving Ground, Maryland 21005," January 16, 2018

Public Law 117-81, Section 223, "National Defense Authorization Act for Fiscal Year 2022," December 27, 2021

United States Code, Title 10