OPTEVFORINST 3980.2J CH-1
01A
20 Oct 21

OPTEVFORINST 3980.2J CHANGE TRANSMITTAL 1

From: Operational Test and Evaluation Force

Subj: OPERATIONAL TEST AND EVALUATION MANUAL

1. Purpose. This revision is administrative in nature. There are three changes that implement policies already enacted by the Commander.

2. Action. Review the instruction in its entirety. To view the administrative comment resolution matrix (CRM) submit a request to 01A at cotf.policy@cotf.navy.mil. The following policy changes are included in this revision:

   a. PMT Views. Multiple changes made within Chapter 4 (test design), including an entire

new paragraph 4.2 with associated definitions and procedures.

   b. Interdivisional Briefs. Implementation of our cross-domain briefings, including the briefing schedule for the various divisions; para 3.4.

   c. Recommendations in Commanders Test Reports. The Commander may recommend a timeframe for correction of deficiencies, or whether to continue program development, or to introduce a system to the Fleet, but OPTEVFOR personnel will not make recommendations for how to correct deficiencies; 3.6.

3. Records Management

   a. Records created as a result of this instruction, regardless of format or media, must be maintained and dispositioned for the standard subject identification codes 1000 through 13000 series per the records disposition schedules located on the Department of the Navy/Assistant for Administration (DON/AA), Directives and Records Management Division (DRMD) portal page.

   b. For questions concerning the management of records related to this notice, please contact the local records manager or the DON/AA DRMD program office.

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Chief of Staff

Releasability and distribution:
This change transmittal is not cleared for public release and is available electronically only via OPTEVFOR KMS website https://kms.cotf.navy.mil

Operational Test and Evaluation Manual

Commander, Operational Test And Evaluation Force

Version 1.0

20 October 2021

RECORD OF REVISIONS

Number of Change	Summary of Changes	Updated
	This is the initial Operational Test and Evaluation Manual	26 Aug 20
1	This is the updated Operational Test and Evaluation Manual	20 Oct 21

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SECTION 1 - INTRODUCTION

1.1 THE MISSION

OPTEVFOR's mission is to ensure naval forces can fight and win, by evaluating warfare capabilities in realistic combat environments with Fleet warfighters. Our test reports rapidly inform Navy, Marine Corps, and Coast Guard Warfighters and support acquisition decisions.

1.1.1 Vision

Our vision is to be recognized as the voice of operational truth with the Fleet. We will lead the Operational Test (OT) community with highly skilled testers and staff that adapt to change, and provide credible, prompt, warfighting-focused test results to Navy, Marine Corps and Coast Guard forces, and acquisition leadership.

1.1.2 Strategic Objectives

We place a high priority on:

- Informing the Fleet, by making warfighting information readily available, and by reporting test results to the Fleet.

- Supporting Acquisition, by providing timely, accurate, and impactful information, and establishing a team culture among stakeholders.

- Improving OPTEVFOR, by improving organizational effectiveness, and aligning our purpose and priorities.

1.1.3 The Admiral's Priorities For 2020

- Improve communications and coordination across warfare domains

- Implement the Operational Test Agencies' (OTA) six core test principles (see below) and Capabilities-Based Test and Evaluation (CBTE)

- Develop enterprise-wide efficient and effective cyber tests

- Modernize how we educate and train our workforce

1.1.4 The Six OTA Core Principles of Adaptive, Relevant Testing (ART):

In support of the National Defense Strategy (NDS), the OTA Commanders determined that the OTAs must adjust our focus of purpose from solely supporting the acquisition and warfighter communities, to that of support for "delivering combat capability at the speed of relevance". To that end, the OTA named six core test principles designed to ensure the future relevance, credibility and timeliness of OT. Each Service OTA along with the Joint Interoperability Test Command (JITC) have agreed to these principles as a framework to achieve the NDS vision:

- Early OT Involvement – OTA engaged from the very inception of the program, truly part of the team, more than just a seat at the table

- Tailor to the Situation – Each OT focused on the warfighter, tailored processes to ensure rapid fielding of capability

- Continuous and Cumulative Feedback – sharing test results with the program almost as soon as we know them, OT is independent, but also a partner

- Streamline Processes and Products – remove bureaucratic constraints that slow the process

- Integrated and Combined Collection/Test – "One Team" approach to all testing, utilize all test events to meet Contractor Testing (CT), Developmental Testing (DT), and OT objectives

- Adaptive – willing to adjust test designs and processes to apply lessons learned and address the real needs of the warfighter, testing at the "speed of relevance."

The details of these six principles are provided by an OTA Joint Memorandum of May 2019, available at Y:\OT&E Reference Library\Memorandums of Agreement (MOA). These core principles were subsequently endorsed by the Director, Operational Test and Evaluation (DOT&E) and emphasized in the 2019 DOT&E Annual Report.

1.1.5 Purpose

The purpose of this manual is to familiarize the reader with the role of Operational Test and Evaluation (OT&E) in the Navy acquisition process and to prescribe policies for the planning, conduct, and reporting of OT&E on various new and improved systems. This manual provides policy and high-level guidance on the methods and processes used by Operational Test and Evaluation Force (OPTEVFOR) in the conduct of OT&E. Specifics associated with the actual conduct of OT events and the generation of test plans and writing of test reports are provided in handbooks associated with the specific topic; these handbooks provide the reader the details of "how to" actually conduct the task or event. Throughout all processes and in the application of all guidance, OPTEVFOR testers are required to use critical thinking and maintain a questioning frame of mind.

1.1.6 Background

By direction of the CNO, Commander, Operational Test and Evaluation Force (COMOPTEVFOR) is chartered to conduct OT&E of systems in Acquisition Category (ACAT) I, II, III, and IVT (Test) procurement programs. OT&E is conducted in as near a realistic operational environment as possible with Fleet personnel operating and maintaining the System Under Test (SUT). Wherever possible, simulated hostile threat action is employed to stress the system. Operational experience and judgment of the naval personnel conducting OT&E is of utmost importance to the validity of OT&E results, conclusions, and recommendations. To that end, meticulous planning, preparation, conduct, and reporting of OT&E are mandatory. It is also important to note that although COMOPTEVFOR works very closely with the acquisition process, the command is the Navy's independent OTA, works for the CNO, and must represent the equities of the warfighter to the acquisition community.

1.1.7 The Role of COMOPTEVFOR

It is important to put the role of OT&E in context to best understand the responsibilities of COMOPTEVFOR. In addition to the statutory missions assigned by law, COMOPTEVFOR has additional responsibilities assigned by the CNO to assist the Service Acquisition Executive by

providing early assessments of the operational effectiveness and operational suitability of major acquisition programs being developed by the Department of the Navy (DoN). These early assessments are intended to help senior leaders identify risks and benefits of systems under development so that the best acquisition decisions can be made.

During program development, OPTEVFOR will typically provide a series of one or more operational assessments (OA) to help inform the Service Acquisition Executive and the Resource Sponsor on the progress being made with particular focus on the risks that are likely to be observed at Initial Operational Test and Evaluation (IOT&E).

During IOT&E, OPTEVFOR exercises its statutory responsibility to evaluate the operational effectiveness, operational suitability, and cyber survivability of the SUT. In addition, the Commander evaluates the operational effectiveness and the operational suitability of the SUT's performance as part of the overall System of Systems (SoS). As will be discussed later, it is not uncommon to find a SUT that performs exactly as desired within a larger SoS, but that the SoS does not accomplish the intended mission.

Depending on the structure of the program, there will likely be additional phases of test designed to support the Verification of the Correction of Deficiencies (VCD) found in IOT&E or to assess delivery of additional capability. Depending on the success of the IOT&E and/or the scope of future changes, these additional test periods will vary significantly in size and scope.

In addition to acquisition program OT&E; COMOPTEVFOR supports the CNO and Fleet Commanders by participating in Warfare Capability Baseline (WCB) assessments. These assessments examine specific kill or effects chains identified by Fleet Commanders and report on the Navy's capability across all kill/effects chain platforms, networks, weapons, and sensors. Often led by a Warfighting Development Center (WDC), the WCB assessment is intended to draw on OT and Fleet data to display an objective view of the level of integration and interoperability associated with the SoS capability for each chain. WCB assessments are inextricably linked to the kill/effects chain used to inform SUT evaluations during OT&E because each system must work within a SoS to provide warfighting capability. As each OPTEVFOR warfare division collaborates with the WDCs to conduct fleet relevant OT&E, they should ensure OT&E knowledge, insight, and data are used as part of WCB assessments; while simultaneously drawing upon these assessments to inform the operational context for mission based test designs, plans, and analyses. To enable this relevant fleet and OPTEVFOR insight, each OT&E risk or deficiency should articulate the mission task impacted by that deficiency.

1.2 THE OT&E PROCESS

1.2.1 Mission Based Test Design (MBTD)

Once a program is assigned to a warfare division, the first step is to employ a process known as MBTD to develop an evaluation strategy. Chapter 4 and the Integrated Evaluation Framework (IEF) Checklist provide a detailed discussion of the MBTD process. In basic terms, MBTD begins with the Navy Required Operational Capability/ Projected Operational Environment (ROC/POE) mission areas and then examines the specific mission contributions ascribed to the system. To accomplish this, the standard mission threads (first-level subtasks) are decomposed (as needed) into second-, and third-level subtasks. Conditions, measures, and Data Requirements (DR) are identified and traced to subtasks. MBTD also incorporates Design of Experiments (DOE) to create

defendable, minimum-adequate test designs for key SUT concerns. The product of this effort is a document known as the IEF. The IEF provides the foundation for the input of the Operational Test Agency (OTA) to the TEMP. It also enables the OT community to become a full-fledged partner in Integrated Testing (IT) with members of the CT and DT communities. Beyond its evident support of the acquisition process, the mission-task breakdown developed in the MBTD process serves as the foundation for the creation of effects chains used in other analyses.

1.2.2 Test and Evaluation Master Plan (TEMP)

The TEMP is the controlling directive for managing the test and evaluation of an acquisition program. It is directive in nature, and defines and integrates test objectives, Critical Operational Issues (COI), test responsibilities, resource requirements, and test schedules. While the Program Manager (PM) is responsible for the development and submission of the TEMP, COMOPTEVFOR is responsible for the development of those portions dealing with OT. COMOPTEVFOR is a signatory on all TEMPs developed in the DoN, as well as those for joint/multiservice programs that have Navy equities.

OPTEVFOR's input to the TEMP process is based on the IEF. In short, the TEMP is a formal commitment between stakeholders on the IT strategy for a program to include resources, planning, and methodology.

The OT process should be seen as a continuum that supports all phases of program development. Using the IT construct, operational testers may participate in CT and government DT, in addition to stand-alone OT. The intent is to use every opportunity to gather relevant data in the most efficient and economical manner. All test communities (CT, DT, and OT) have unique roles and responsibilities; however, there is generally a significant intersection of the data sets necessary to inform their respective evaluations. OPTEVFOR's commitment is to use all qualified data, regardless of source, to make the best, informed evaluation.

1.2.2.1 Master Test Strategy (MTS)

Programs that employ adaptive acquisition authorities in lieu of, or prior to, traditional acquisition program development may be required to develop a MTS as a streamlined document to capture the test approach, resources and schedule when a TEMP is not used by that program. Department of Defense (DoD) guidance is found in the DoDI 5000.80, Operation of the Middle Tier of Acquisition. DoN guidance is in draft, and may be signed in FY21. Refer further questions via the division chain of command to the COMOPTEVFOR Technical Director (TD).

1.2.3 OT PLANS

Formal, stand-alone OT phases are generally called out in support of a program's acquisition milestones. These test periods are conducted per an approved OT plan. For programs that fall under the oversight of the Director, Operational Test and Evaluation (DOT&E), the law (10 USC 2399) requires that the adequacy of the test plan (including the projected level of funding) be approved in writing by the Director prior to commencing OT. For all other programs, the Commander is the approval authority.

The OT plan is built from the IEF. Depending on the stage of program development, the test plan may only involve a subset of the capability described in the IEF. The OT plan expands upon the

IEF with an additional level of detail on the execution of the specific events and the details associated with specific test configurations, range instrumentation, and Fleet participants.

1.2.4 OT PERIODS

There are five general types of dedicated OT periods, which may be executed as required within a typical major acquisition program. Each test period that is outlined within the program test strategy as documented by the TEMP shall result in a test report to officially document the operational evaluations from the test period. The nature of those reports, their content, and the decisions they inform are synopsized below.

1.2.4.1 Early Operational Assessment (EOA) and Operational Assessment (OA)

The first formal assessment is usually an EOA. This assessment occurs before the start of the Engineering and Manufacturing Development phase of the acquisition program. Most programs will have only a single EOA. Generally, this is limited to a review of the design documentation, preliminary manning and training plans, and, potentially, a demonstration of technology. The goal of the EOA is to identify system enhancements, as well as risks towards the successful completion of IOT&E. Each risk identified is categorized and documented with a "Blue" or "Gold" sheet. Blue sheets refer to the SUT risks, while Gold sheets address risks outside the SUT that impact mission accomplishment. These risk sheets are tracked through the life of the system until they are verified as corrected.

The second formal assessment period is generally an OA. This assessment occurs post-milestone B, during the Engineering and Manufacturing Development phase. The scope of the OA is most often determined by the maturity of the development program. As with EOAs, OAs identify system enhancements, as well as risks towards the successful completion of the IOT&E. Each identified risk is categorized and documented with a Blue or Gold sheet. Large complex programs will often have multiple OAs during the Engineering and Manufacturing Development phase. Major Defense Acquisition Programs typically require the results of an OA to support milestone decisions and other program reviews.

1.2.4.2 Initial Operational Test and Evaluation (IOT&E)

The third type of OT period is the IOT&E. This is the statutorily required, independent evaluation of the operational effectiveness and operational suitability of the SUT. This test is conducted on production-representative test articles during the Production and Deployment phase of an acquisition program. Specific deficiencies identified during test are documented as individual Blue or Gold sheets. Based on the results of IOT&E, COMOPTEVFOR makes a determination of the operational effectiveness, operational suitability, and cyber survivability of the SUT, as well as the operational effectiveness, operational suitability, and cyber survivability of the SUT within the overall context of the SoS in which it functions. The Commander makes a recommendation to the CNO on the Fleet introduction (or full introduction in the case of joint/multiservice programs). The results of IOT&E are a prerequisite for the Full-Rate Production (FRP) Decision Review (FRPDR).

1.2.4.3 Verification of Correction of Deficiencies (VCD)

The fourth type of OT period is the VCD. Typically, this is not a preplanned phase of testing, but is inserted into the test program after a formal phase of OT to verify that certain deficiencies have

been corrected. This provides the Milestone Decision Authority (MDA) with the independent assurance the deficiencies cited as corrected by the PM from a previous phase of OT have actually been corrected. When deficiencies are verified as corrected, the corresponding Blue or Gold sheet is closed. If the deficiency is not fully corrected, the results are reviewed to determine if the correction or mitigation to date has changed the risk to successful IOT&E, which may warrant a change in the deficiency categorization.

1.2.4.4 Follow-On Operational Test and Evaluation (FOT&E)

The final category of OT period is FOT&E. Because it nominally encompasses all OT conducted after IOT&E, it can take many different forms. In its original construct, FOT&E included completion of deferred or incomplete testing from IOT&E, as well as validation of the operational effectiveness and suitability of the actual production systems. In practice, FOT&E is often used to support the development of incremental improvements to systems that are in production. These improvements can range from minor hardware changes to periodic software system updates to major engineering changes that require extensive development. Given the variations in scope, FOT&E may be structured to resemble a subset of IOT&E, confirming production performance, or it may take the form of an OA, identifying risks to successful implementation of a major engineering change. Based on the focus of the test, Blue and Gold sheets may be closed as fixes are incorporated into the production articles or new Blue and Gold sheets may be created to document risks associated with the new development.

1.2.5 OPTEVFOR Tactics Guide (OTG)

There are four Navy and Marine Corps Squadrons that conduct OT&E under the direction of the Commander. OTGs are created, primarily by test squadrons, to communicate tactical guidance to the Fleet in conjunction with a given test period. They are developed on an as-needed basis, and they will utilize a format locally established within the test squadron. OTGs are generally not produced by the OPTEVFOR warfare divisions. Instead, tactical lessons learned are provided to the respective Warfighting Development Centers (WDC) for inclusion in their tactical guidance.

1.2.6 Quick Reaction Assessment (QRA)

QRAs are abbreviated OT&E events that provide assessments for specific warfighting solutions that address an urgent operational need or an accelerated acquisition program. A QRA provides an objective characterization of system operational capabilities, limitations, and considerations for deploying the system, using the criteria supplied by the end user in the rapid acquisition documentation. There is no assessment of operational effectiveness, operational suitability, or cyber survivability. Chapters 4-8 below delineate further details of the functional aspects of QRAs and other forms of tailored testing.

1.2.7 Middle Tier Acquisition (MTA)

DoDI 5000.80 Operation of the Middle Tier of Acquisition provides policy guidance for programs using MTA authorities. Specific SECNAV guidance is still in draft, and may be signed in FY21. SECNAVINST 5000.2F conveys applicability of Quick Reaction Assessment (QRA) within the test approaches for these programs. For oversight programs, DOT&E Memo dated 24 October 2019, subject "Operational and Live-Fire Test and Evaluation Planning Guidelines Middle Tier of Acquisition Programs" provides relevant amplifying guidance. This memo is available in the

Y:\OT&E Reference Library\DOT&E Guidance . The OPTEVFOR Tailored IEF (TIEF) and Level of Test Determination (LTD) processes have been adapted to account for the current guidance regarding MTA programs.

1.3 KEY DIRECTIVES

The Department of Defense (DoD) and Navy acquisition and test and evaluation processes are governed by statutes and directives as follows:

- **10 U.S. Code 139** - Director of Operational Test and Evaluation (DOT&E)

- **10 U. S. Code 2366** - Major systems and munitions programs: survivability testing and lethality testing required before full-scale production

- **10 U.S. Code 2399** - Operational test and evaluation of defense acquisition programs

- **DoD Instruction 5000.02** – Operation of the Adaptive Acquisition Framework - Establishes policy and prescribes procedures for managing acquisition programs, pursuant to the relevant sections of Title 10, United States Code

- **Defense Acquisition Guidebook (DAG)** - provides guidance on the process and procedures for managing risks through planning and executing an effective and affordable test and evaluation (T&E) program

- **DoD Cybersecurity T&E Guidebook v2.0** - provides data-driven, mission-impact based, analysis and assessment methods for cybersecurity T&E and supports assessment of cybersecurity, survivability, and resilience within a mission context

- **SECNAV Instruction 5000.2F** - Prescribes DoN-specific acquisition policies and procedures that supplement DoDI 5000.02

- **SECNAV Instruction 3960.1 (Draft)** - Will establish DoN-specific Test & Evaluation (T&E) policy and execution guidance

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SECTION 2 - ORGANIZATIONAL RELATIONSHIPS

2.1 INTRODUCTION

COMOPTEVFOR is an Echelon 2 Commander under the CNO reporting directly to the Vice Chief of Naval Operations. The missions, functions, and tasks of OPTEVFOR are delineated in OPNAVINST 5450.332A. OPTEVFOR serves as the service OTA for the Navy, as well as Marine Corps Aviation. In addition to the headquarters element, OPTEVFOR includes a Fleet-scheduling detachment in San Diego, and a detachment supporting the Joint Strike Fighter (JSF), Joint Operational Test Team (JOTT) at Edwards, Air Force Base (AFB), CA. There are four Navy and Marine Corps Squadrons that conduct OT&E under the direction of the Commander. Air Test and Evaluation Squadron ONE (VX-1), located at Patuxent River, MD, is under the administrative control of Commander, Naval Air Forces, Atlantic. Air Test and Evaluation Squadron NINE (VX-9), located at China Lake, CA, is under the administrative control of Commander, Naval Air Forces, Pacific. Marine Operational Test and Evaluation Squadron ONE (VMX-1), located at Yuma, AZ, is administratively aligned under the Deputy Commandant for Aviation. Marine Helicopter Squadron ONE (HMX-1), located at Quantico, VA, was historically assigned responsibility for United States Marine Corps (USMC) rotary wing OT. Due to the growth of its principal responsibilities for Presidential transport, most OT&E responsibilities have been realigned to other organizations; however, HMX-1 retains responsibility for OT of aircraft assigned for Presidential transport.

2.2 EXTERNAL ALIGNMENT

Figure 2-1. COMOPTEVFOR External Relationships
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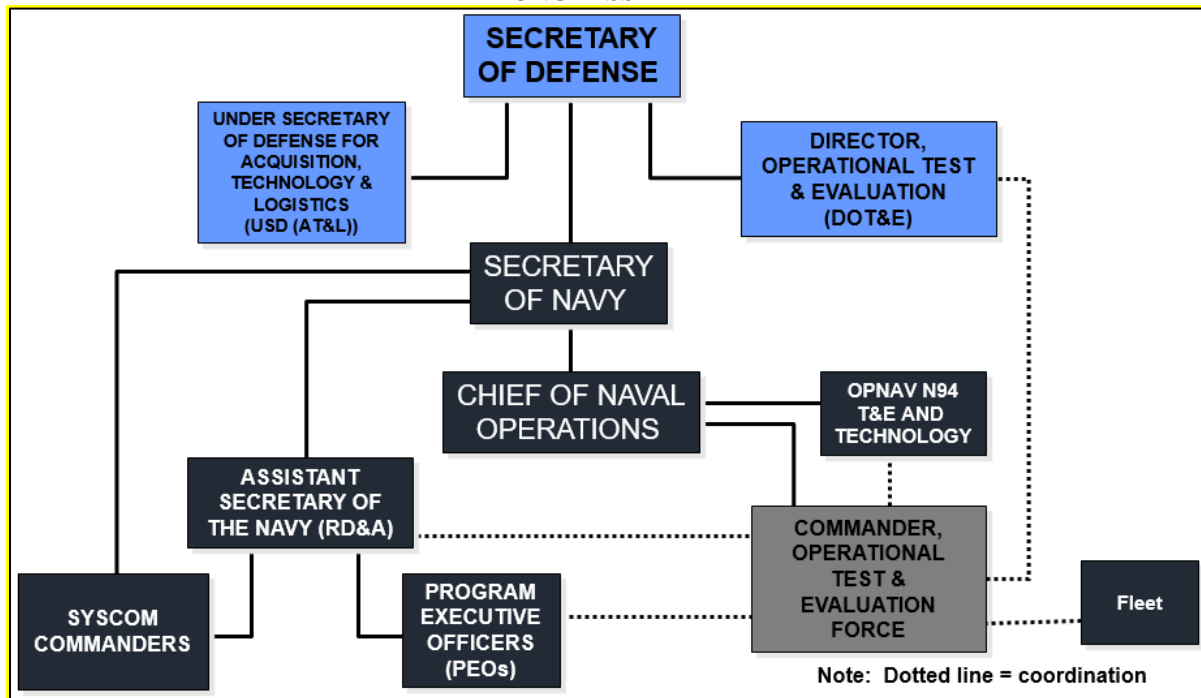
It is important to note that while OPTEVFOR provides reports to the Navy's Acquisition Executive the Assistant Secretary of the Navy (Research, Development, and Acquisition) (ASN(RDA)), the Commander is aligned under the CNO. The dotted line from the Office of the Chief of Naval Operations (OPNAV) N94 reflects that OPTEVFOR's mission funding is provided through the Director of Innovation, Technology Requirements, and Test and Evaluation. The Test and Evaluation (T&E) Executive also provides policy guidance on T&E within the DoN.

The DOT&E has statutory responsibility for the oversight of all OT&E carried out in the Department of Defense (DoD). The DOT&E statutory responsibilities include the approval of the adequacy of all OT plans that support programs designated for DOT&E oversight. By regulation, the DOT&E is the approval authority for TEMPs for programs designated for DOT&E oversight. While the DOT&E has no responsibility for the execution of T&E, the Director is required to provide a variety of reports on the results of testing to the Congress. Based upon this, he or she may designate observers for Service testing and has access to all data collected during OT.

There are three basic reports produced by the DOT&E. For Major Defense Acquisition Programs, the Director must submit a report to the Congress on the results of OT prior to the approval to proceed beyond Low-Rate Initial Production (LRIP). These are typically referred to as "BLRIP" reports. In cases where the Secretary of Defense determines that it is necessary to field a system before the completion of an IOT&E, the Director is required to submit a report to the Congress based on the available test results with an assessment of the risk being incurred by the early fielding. These are often referred to as "Section 231" reports. Finally, the DOT&E produces an annual report to the Congress with an overview of the testing accomplished on each of the programs under DOT&E oversight (including live-fire testing activities). This report also includes

recommendations for the Services and Defense Agencies. While there are other reports called out in various National Defense Authorization Acts, these three are the ones that impact most OPTEVFOR personnel. See appendix D for additional information on the role and staffing of the DOT&E.

2.3 INTERNAL ALIGNMENT

To promote command-wide teamwork that produces consistent, repeatable credible results, OPTEVFOR operates under a Competency-and Warfare-Aligned organizational structure. The subsequent paragraphs describe the key roles within the organization and discuss the interrelationships among them.

2.3.1 TOP LEADERSHIP

Top leadership below the Commander includes the Deputy (00D), the Chief of Staff (CoS) (01), the Commanders Action Group (CAG), and the Technical Director (00TD). Their broad areas of responsibility are as follows:

2.3.2 Deputy (00D)

The Deputy reports directly to the Commander. He or she, with the CoS, ensures the mission of the command is carried out in conformance with the policies, plans, and intentions of the Commander. The Deputy acts for and in the name of the Commander when the Commander is temporarily absent. He or she actively participates in final reviews and presentations of test results documents arriving for the Commander's approval, and represents the Commander in the executive oversight and command approval of Navy OT&E policy. The Deputy recommends potential improvements in test and evaluation methodology, endorses OT&E policy, and represents COMOPTEVFOR at high-level meetings involving the DoD and the DoN. He or she oversees command resource planning in conjunction with the resources sponsor; and develops and revises the command's business and strategic plans.

2.3.3 CoS (01)

The CoS is the executor for and principal assistant and advisor to the Commander and the Deputy. He or she ensures the administration, training, and operations of the command are carried out per the Commander's intentions. The CoS is responsible for daily command operations and the use of command resources. He or she coordinates with the Deputy Commander for the final approval for government civilian hires, and serves as the command point of contact with the CNO and other offices pertaining to the command missions, functions and tasks. He/She provides routine supervision for the CAG to ensure their attentiveness to the strategic priorities of the Commander and Deputy Commander. The CoS exercises the full scope of leadership responsibilities in the development and maintenance of military and civilian manpower; while further presiding over command internal integrated project teams to facilitate diversity of participation and results relevant to the Commanders intentions.

2.3.3.1 Commanders Action Group (CAG)

The CAG is a small staff element that is accountable to the Commander for strategy management. The CAG's purpose is to facilitate the OPTEVFOR strategy development, deployment,

communications and monitoring based on the Commander's priorities. The CAG is supervised by the CoS and meets routinely with the Commander, Deputy Commander and TD to ensure prioritization of effort and associated progress reporting. The CAG is led by a GS-15 or O-6 and supported by additional action officers as appropriate. They plan and execute strategy related off-site meetings and the OTA Roundtable when hosted by OPTEVFOR. The CAG is also responsible to track and assist in the coordination of external stakeholder engagements by the Commander and Deputy Commander, while also coordinating in-house execution of guest lecture presentations of strategic benefit to the command.

2.3.4 Technical Director (00TD)

The Technical Director (TD) serves as the principal advisor to the Commander and staff on technical aspects of T&E products. He works closely with the Commander, the Deputy Commander, and the Chief of Staff for strategic engagement and leadership facilitation across the breadth of OPTEVFOR internal and external stakeholders. By design, the role of the TD is broad and flexible to ensure adaptability in meeting the Commander's needs. The Commander has assigned the TD with a core responsibility to review all T&E products for technical acuity, credibility, and relevance. Product review responsibilities are applicable but not limited to: T&E Strategy (TES), TEMP, Master Test Strategy (MTS), IEF, Test Plan, Test Report, DT Assist letters, Assessment of Operational Capability (AOC) letters, Concept of Test and Operational Test Readiness Review (OTRR) briefs, CBTE documents, and Modeling and Simulation (M&S) accreditation documents. The TD signs the Data Analysis Summary (DAS) that underpins test reports and provides technical support to all divisions in the development of test products. He/she is further responsible to serve as the principal liaison with the DOT&E Science Advisor, Service OTA counterparts, and the DoN T&E governance structure. He/she represents the Commander in the coordination of DoD and DoN policy development, accelerated and adaptive testing concepts, and Service- and DoD-level technical initiatives related to the OT&E mission. Supporting all warfare and competency divisions, the TD chairs the Technical Leadership Team (TLT) as described in para 2.4-5 and serves as the Commander's champion for continuous process improvement.

2.3.5 COMPETENCY- AND WARFARE-ALIGNED ORGANIZATION

OPTEVFOR is a competency- and warfare-aligned organization. This is significantly different from the traditional Fleet organizations with which most military personnel are familiar. OPTEVFOR has Warfare Division Directors who are responsible for executing operational testing of all assigned systems, and for delivering test documents ready for the Commander's signature. OT&E competency division directors provide the disciplined policy and process support, and technical expertise to complement warfare divisions; ensuring products meet the technical requirements and the Commander's standards. This collaborative structure aligns OT&E and warfighter expertise to achieve sufficient critical thinking and analytical rigor in all aspects of OT&E leading to a clear and accurate test report that is relevant to fleet needs.

There are six warfare divisions and a JSF Detachment at Edwards AFB that are supported by competency divisions. The warfare divisions include Undersea Warfare (40), Air Warfare (50), Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) (60), Surface Warfare (70), Expeditionary Warfare and Littoral Combat Ship (LCS) (80), and Advanced Programs (90). Each warfare division typically has a Navy Captain as the division

Director with a senior civil servant as the Deputy or a senior civil servant as the division Director and a Navy Commander as the Deputy. The JSF Detachment manages Navy requirements in T&E of the F-35 and is a member of the JOTT.

The warfare divisions represent the traditional core of the OPTEVFOR organization. This is where the active duty fleet operational experts who are assigned to test programs reside. It is their perspective that allows OPTEVFOR to bridge the technical to the tactical views commensurate with the OT&E mission.

There are four competency divisions: Policy and Operations (01A), Test Design (01B), Test Planning and Evaluation (01C), and Cybersecurity Testing (01D). Other support divisions include the Staff Commanding Officer and Administration (10), Chief Information Officer (CIO) (20), Contracts (01K), and the Comptroller (30). The matrix organizational concept that relates the warfare, competency, and support divisions is depicted in figure 2-2.

The members of the competency divisions work within the test team to ensure that the Commander's policies are adhered to and that best practices are applied. Should there be a disagreement that cannot be resolved between warfare and competency division directors, the issue should be raised to the Deputy and, if necessary, the Commander, for resolution. For process and technical matters, division directors shall obtain the TD's input and/or recommendations prior to requesting audience with the Deputy Commander. The warfare division directors and the competency division directors have the right and the duty to raise an issue for Flag-level adjudication if they believe the proposed outcome is not in the best interests of the Service.

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Figure 2-2. COMOPTEVFOR Internal Relationships
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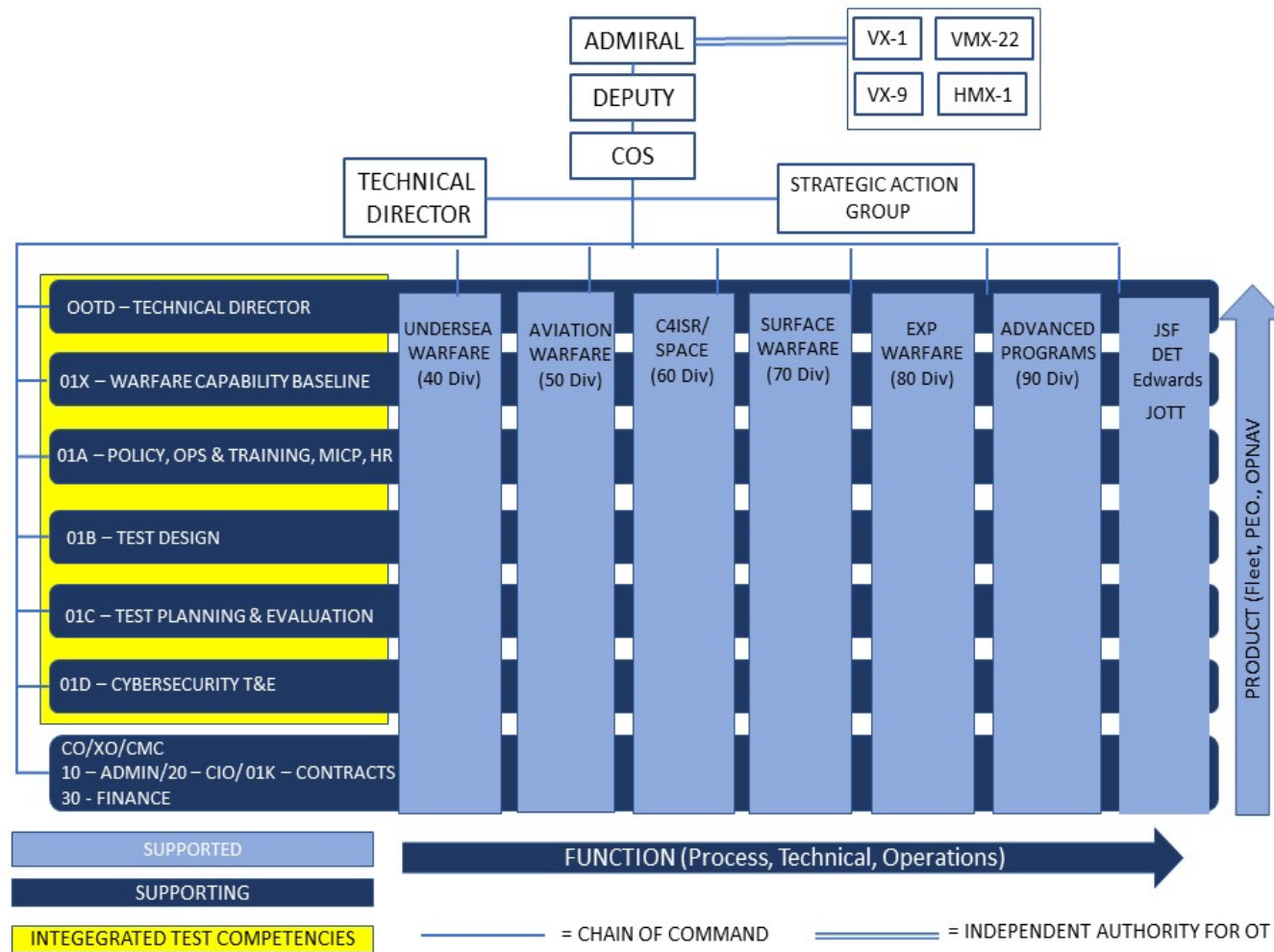
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2.4 PROCESS OWNERS

The broad areas of responsibility for the process owners are as follows:

2.4.1 01A Policy and Operations

01A Policy and Operations is responsible for representing the Commander to external organizations in the development of T&E policy. It is responsible for ensuring compliance with governing directives, specifically Secretary of the Navy (SECNAV) Instructions and DoD Directives. As the Operations Director, 01A tracks the status of ongoing testing and reporting, as well as managing the response to external requests for document coordination and review. The editorial staff and training staff fall under the Policy and Operations Director.

2.4.2 01B Test Design

01B Test Design is responsible for the implementation of MBTD across all products associated with OT at OPTEVFOR. It oversees the development of all IEFs and subsequent revisions and updates. It is responsible for managing the authoritative database of mission threads, subtasks, conditions, measures, and DRs. The management of the Core Team Facilitators (CTF), who co-chair the test design teams, and the statistical staff falls under the Test Design Director. As the senior expert in MBTD, the Test Design Director is responsible for the development of the associated training curriculum. The Test Design Director is also responsible for the policies on the use of M&S in OT, the Verification, Validation, and Accreditation (VV&A) process for OT, response variable (RV) analysis, test targets, and the Test Resources Requirements document, and all related training curricula.

2.4.3 01C Test Planning And Evaluation

01C Test Planning and Evaluation is responsible for the analytical rigor applied to all test planning documents and reports generated at COMOPTEVFOR. It oversees the development process for all test plans and reports. 01C Division is comprised of the Director, a Deputy Director, and Assistant Directors assigned as process owners. The management and professional development of all Lead Test Engineers (LTEs), Center for Naval Analysis (CNA) representatives, and division analysts, whether assigned directly to 01C staff or the warfare divisions/squadrons (01C forward), falls under Test Planning and Evaluation Director. As the Subject Matter Expert (SME) in test planning, execution, and report writing, the Test Planning and Evaluation Director is responsible for the development of the related training curricula.

2.4.4 01D CYBERSECURITY TESTING

01D Cybersecurity OT&E Division supports all aspects of the cybersecurity operational test and evaluation across all OPTEVFOR warfare divisions including VXs, VMX-1, and HMX-1. 01D Division is composed of two mission areas: Cyber Survivability OT&E and Cybersecurity Assessment Program (CAP). Cyber Survivability OT&E supports acquisition decisions and informs the Fleet of the mission risks and associated impact. CAP integrates with fleet and Combatant Command exercises to plan, conduct, evaluate and report assigned elements of the DOT&E CAP. 01D leadership is comprised of the Director, Deputy Director, Test Operations Director, and a CAP Director.

2.4.4.1 Cyber Survivability OT&E

Cyber survivability testing determines a system's capability to survive and operate after exposure to cyber threats intent on disrupting a system's operational mission. There are two 01D supporting roles within the cyber survivability OT&E mission: Test Strategy and Policy (TSP) and Operations. 01D TSP establishes OPTEVFOR cyber test planning and reporting processes and templates. TSP also oversees cyber survivability test strategy development and planning through the test plan checkpoint processes. TSP is warfare divisions' liaison to DOT&E for vetting overarching cyber test concepts and strategy as well as supporting adjudication of DOT&E comments on cyber survivability test plans. Further, TSP provides training for Cyber Test Engineers and Operational Test Directors on cyber survivability test planning. The Operations team manages and executes the cyber survivability testing with the OPTEVFOR Red Team (CRT) who has the authorization from the Navy Authorizing Official and Navy Intelligence Designated Authorizing Official to conduct test operations on Navy operational environments up to TS/SCI. 01D will augment OPTEVFOR's organic cyber capabilities with external resources tailored to the system's requirements as needed. The warfare division is responsible for providing a Cyber Test Engineer (CTE) to work with the TSP representative and the CRT to develop a test plan using the established OPTEVFOR cyber test planning process. Once the test plan is signed and approved by the Commander and DOT&E (if a program is on DOT&E oversight), the CRT executes the test and coordinates the post-test process with the warfare divisions to develop the final report products.

2.4.4.2 Cybersecurity Assessment Program (CAP)

CAP is a DOT&E managed, congressionally funded program mandated in the National Defense Authorization Act of 2002. Each service OTA has a CAP team. CAP monitors and reports on DoD efforts to improve cybersecurity, cyber functionality, and interoperability. While the CAP does not conduct OT, it employs MBTD and Cyber Survivability principles to develop, design, and execute assessments. The CAP mission has four primary objectives:

- Conduct operationally relevant cybersecurity assessments of fielded systems, networks and processes during Combatant Command and Service Tier I exercises featuring representative cyber threats, to evaluate how realistic cyber conditions affect the subject commands' ability to execute their assigned missions.

- Provide timely feedback to Combatant Command, Service, and Department of Defense leadership on identified problems, associated mission effects, and successful defensive strategies.

- Share relevant information with, and support, those organizations authorized and able to provide remediation and mitigation assistance and verify that remediation and mitigation activities are effective.

- Report overarching cybersecurity observations and trends for inclusion in the DOT&E Annual Report to Congress.

The CAP Director holds ACOS administrative authorities.

2.4.5 TECHNICAL LEADERSHIP TEAM (TLT)/ CHANGE CONTROL BOARD (CCB)

The TLT is chaired by the TD and composed of the directors of 01A, 01B, 01C, and 01D, with other command leadership participation included as necessary. Their purpose is to review the technical implications of OT&E processes, lessons learned, best practices, and internal and external trends in order to maintain alignment of command policies and processes to the needs of the Navy and the OPTEVFOR mission. This continuous review and coordination forum helps to ensure that command guidance and policies are well considered and do not conflict. Serving as the OT&E guidance and policy Change Control Board (CCB), the TLT will periodically meet and approve all proposed changes to OPTEVFOR OT&E-related policy and subordinate guidance handbooks. Handbooks approved by the CCB chair will be signed by the cognizant competency or support division director. Changes that require an update to the OT&E Manual will be endorsed by the CCB chair before seeking the Commander's final approval. The 01A competency division will promulgate and maintain the manual and handbooks upon signature, and work with the corresponding content owner to incorporate the associated changes into command training programs.

2.5 WARFARE DIVISION ROLES AND RESPONSIBILITIES – PRIMARY DUTIES

The warfare divisions are composed of predominantly active-duty military personnel (officer and enlisted), government civilian, and contract support personnel working together with a product focus to execute the OT&E mission for assigned programs. Whereas the competency divisions are generally comprised of civilian and contractor support personnel to provide process and technical expertise in support of the warfare division mandate. The aggregate of personnel across warfare and competency divisions work collaboratively to create a team-centric organizational construct to ensure each assigned System Under Test has collective expertise to support OT&E mission accomplishment. The various positions and associated responsibilities of the warfare divisions are defined with the intent to accomplish this team-based execution of the OT&E mission.

2.5.1 Division Director or Assistant Chief of Staff (ACOS)

The Division ACOS is responsible for all operational testing performed within the division and is the primary interface with O-6 PMs and DOT&E Deputy Directors and Action Officers (AO). The ACOS is to ensure that all Division products are ready for Flag-level review. The ACOS represents COMOPTEVFOR at high-visibility test events and at Operational Test Readiness Reviews (OTRR)/mission control panels, Working Integrated Product Team (WIPT) executive level meetings, and DOT&E Concept of Test (COT) briefs. He or She provides leadership for the engagement with fleet commands to ensure relevancy of OPTEVFOR testing and results to fleet interests.

2.5.2 Division Deputy Director or Deputy Assistant Chief of Staff (DACOS)

The Division DACOS is responsible to the ACOS to ensure that all products are ready for Flag-level review. The DACOS provides the long-term continuity for the Division and is the key interface with 01A, 01B, 01C, and 01D competency division leadership. The DACOS is responsible for the timely scheduling and execution of internal test product reviews; and monitoring timely scheduling and execution of external test functions, such as OTRR and briefs

to DOT&E. The DACOS also manages the divisions assigned program portfolio, allocation of personnel to each program, contract support vehicles, and financial resources. In cases when Navy Working Capital Funded government agencies provide OT&E support, the DACOS is responsible to staff and maintain documented agreements applicable to the nature of that support.

2.5.3 Section Head (SH)

The section head (SH), typically a mid-grade officer or civilian, is primarily responsible for portfolio management of assigned programs of record. The SH provides leadership to the assigned team to ensure external engagement and communications are aligned with internal policy and processes. The SH also manages assigned manpower to efficiently provide program-focused OT&E support to associated Program Managers, while guiding the team through contracting, financial, and fleet resource allocation requirements to ensure mission success within the section. The SH is responsible to the ACOS for all assigned military personnel meeting military requirements, to include administrative support and identifying OT&E training required. The SH is a facilitator bridging tactically realistic OT&E with OPTEVFOR processes and, therefore, acts as the liaison with 01A, 01B, 01C, and 01D action officers. The SH is also accountable to the DACOS for the timeliness, accuracy, and format of all test products assigned to them. The SH ensures the timely scheduling and execution of internal test product reviews and the timely scheduling and execution of external test functions, such as OTRR and briefs to DOT&E.

2.5.4 Operational Test Director (OTD)

Qualification as an OTD ensures the individual is capable of providing military leadership, fleet experience, and tactical acumen to OT&E, specifically regarding the direction of operational test execution. The OTD is assigned to one or more programs. The OTD is responsible for overseeing tactically realistic, detailed test planning, thorough test execution, to include detailed data collection, and that the observed results are accurately documented in the Test Report. In addition to ensuring that the requisite phase of test execution is conducted properly, the OTD leads the test team in ensuring associated documentation is "Flag-signature ready" and in compliance with current policies and procedures. The OTD is accountable for following Section Head guidance to provide clear and consistent communications with internal action officers (01A, 01B, 01C, 01D), program office(s), and other external organizations (DOT&E, OPNAV, etc.), and attending OT&E meetings as required. The OTD will also act as a mentor to Test Program Managers (TPM). To document decisions made, issues identified, and serve as a running record of project history, OTDs shall maintain a separate OTD Journal for each assigned project as a written, chronological record of the project. Each OTD Journal will be a pass down item for subsequent OTDs assigned to each project.

2.5.5 Test Program Manager (TPM)

The TPM is assigned to one or more programs as a tactical expert and manager of the OT&E program administration. The TPM is critical member of each warfare division test section who performs a role akin to an OTD while working to meet the training and certification requirements associated to the OTD position. The TPM is responsible for ensuring that the requisite phase of test is planned properly and that associated documentation is "Flag-signature ready" and in compliance with current policies and procedures. The TPM is responsible to follow guidance from the Section Head regarding the proper management of all program funds in support of the assigned programs. He or she is also accountable for following Section Head guidance regarding clear and

consistent communications with internal action officers (01A, 01B, 01C, 01D), program office(s), and other external organizations (DOT&E, OPNAV, etc.), and attending OT&E meetings as required. TPMs may be assigned a variety of support staff, including military or government civilian OTD, contracted support, or an additional assistant TPM, as needed. To facilitate and support the wide variety of TPM responsibilities, TPMs shall maintain a separate TPM Journal for each assigned project as a written, chronological record of the project. Each TPM Journal will be a pass down item for subsequent TPMs or OTDs assigned to each project.

2.5.6 Lead Test Engineer (LTE)

LTEs are generally assigned to sections within the warfare divisions as an extension of the competency divisions. LTEs may also be assigned duties as Deputy Section Heads to provide long-term continuity within the warfare division. LTEs are administratively supervised, mentored, and trained by the Test Planning and Evaluation Division (01C). Once assigned to a warfare division, LTEs are operationally managed by and responsible to the warfare division Deputy Director for the execution of their responsibilities. LTEs support test teams throughout OT, providing process expertise, technical writing acumen, and ensuring development of quality test products, including MBTD and the preparation and development of TEMPs, M&S products, test plans, COT briefs, pre-test briefs, post-test iterative process Plan of Action and Milestones (POA&M), data analysis summaries, Blue/Gold sheets, and test reports. LTEs also assist the SH to maintain oversight of all testing to ensure the test is executed and data are collected per the test plan. Additionally, LTEs may be assigned other administrative or collateral responsibilities to support execution of the COMOPTEVFOR mission, as required.

2.5.7 STAT Analyst

The Scientific Test and Techniques (STAT) Analyst in Code 01B provides detailed analytical support to the TPMs/OTDs/Operational Test Coordinators (OTC) in their preparation of TEMPs, test plans, and final reports. The Analyst provides detailed analytical support to the TPMs/OTDs/OTCs in review of management-level program documentation, especially Initial Capabilities Documents (ICD), CDDs, and Capabilities Production Documents (CPD). The Analyst generally applies statistical analysis techniques in support of OT&E. The Analyst assists TPMs/OTDs/OTCs in establishing COIs and measures of effectiveness/performance. The Analyst ensures the appropriateness of test scenarios and adequacy of requested resources to resolve COIs.

2.5.8 Cyber Test Engineer (CTE)

Cyber Test Engineers (CTE) are cyber subject matter experts within the warfare divisions primarily assigned to lead the production of a Cyber Survivability test plan in accordance with COMOPTEVFOR policies and guidance. CTEs are responsible for coordinating and leading all aspects of the test plan Checkpoints to ensure all stakeholders are informed and test plan is generated in a timely manner. CTEs are responsible for conducting test plan site visits and working with the OPTEVFOR Red Team to establish test objectives and data requirements. CTEs are also expected to be part of the OPTEVFOR post-test process to provide continuity of the program's cyber OT effort within the warfare division. CTEs may also be assigned to support IEF and TEMP inputs for cyber OT as well as other supporting documents and briefs. CTEs are responsible for early engagement with 01D and ensure 01D is part of the review process for all cyber deliverables including IEF and TEMP inputs. Generally, CTEs are the central hub for cyber OT within the

warfare division. However, warfare division's management of the CTEs may vary depending on factors such as funding and contract limitations.

2.5.9 Operational Test Coordinator (OTC)

OTC positions are used in Air Warfare Division and, to a lesser extent, in other warfare divisions. The OTC coordinates the efforts between the OTD, who often is located in a VX/VMX/HMX squadron, and the division Section Head, DACOS, and ACOS. The OTC is responsible for all communications with DOT&E, coordination of Fleet Resources, arranging funding from the program office, staffing squadron documents for headquarters review, and scheduling briefings by squadron OTDs to OPTEVFOR leadership.

2.6 THE TEAM CENTRIC CONSTRUCT

Figure 2-3 Team-Centric Construct
UNCLASSIFIED
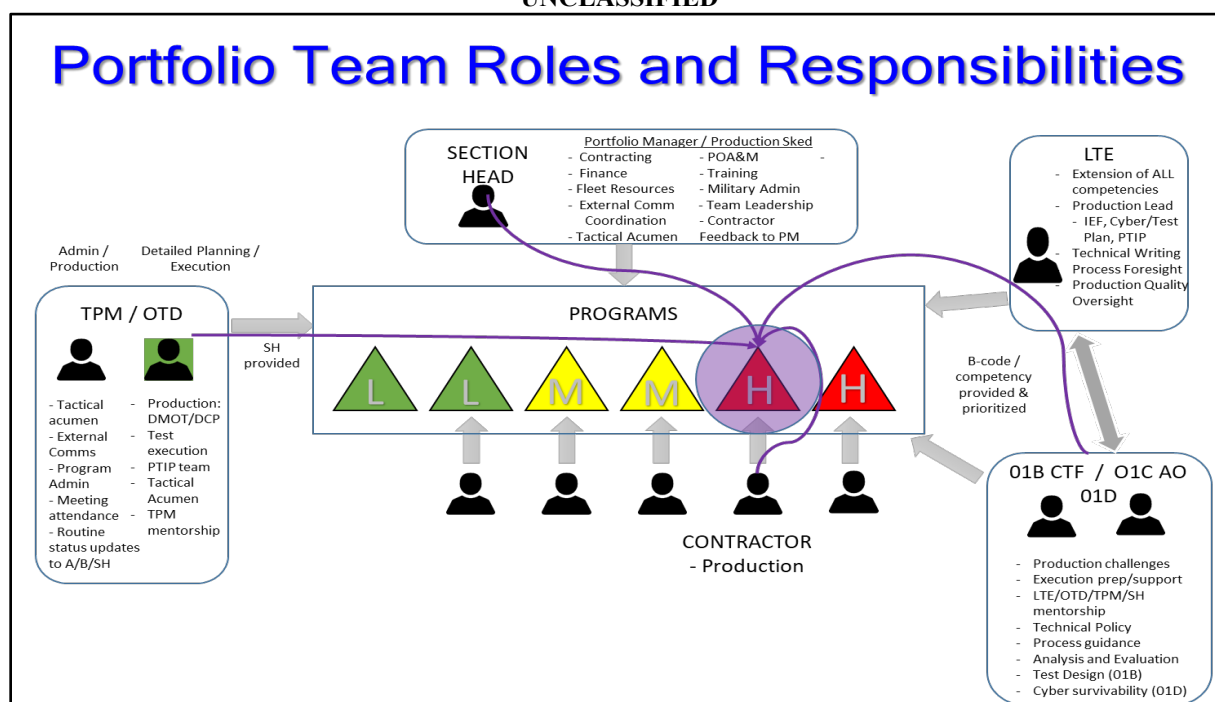
Collaboration and teamwork is the key to adaptive relevant testing (ART). The various roles described above are synergistically brought together in the team-centric construct. Figure 2-3 depicts a notional concept used within the warfare divisions to optimize effective use of workforce capacity, talent and expertise. Because each warfare division is structured to accommodate its specific acquisition, fleet, and test resource environment; the specific assignments within the team framework may be tailored to the needs of the division.

Each portfolio team is assigned multiple test programs under the cognizance of a SH. The goal is to ensure OT&E for all assigned test programs is successfully planned, executed, analyzed, and reported to inform decision-makers and stakeholders. Individual program activity levels tend to ebb and flow over time within the acquisition cycle (annotated using green for low activity level, yellow for medium activity level, and red for high activity level). Managing the collection of test

programs as a portfolio provides each SH with greater flexibility to prioritize and manage workload to ensure that programs OT&E needs are met at the pace required to keep all programs "on-track" or ahead of schedule. In some cases, the SH may personally manage inactive or low activity level programs to promote concentration of manpower on higher demand or higher priority programs. Since the SH provides the financial and contracting management and oversight for each program assigned within the portfolio, the members of the team maintain a focus on production. This further enables the SH to coordinate with subject matter experts within the operations support divisions such as finance and contracts to facilitate continuity. Each SH is allotted a cadre of Test Program Managers (TPM) for program assignment and tasking. When necessary, and with program resource availability, the TPM may work with the SH to acquire contract support. Not all programs will require contract support, as illustrated by the low activity level program with no contractor assigned.

When the program approaches test execution, an OTD will be assigned to oversee the detailed test planning, test execution, analysis and reporting. The SH, TPM, assigned OTD, and contract support are all directly supported by the LTE. The LTE has significant T&E expertise and in-depth knowledge of OPTEVFOR test design, test planning, and post-test iterative processes. The LTE supports the SH in establishing and maintaining a planned schedule for development of all required OT&E products. Additionally, the LTE supports the TPM in ensuring all Integrated Evaluation Frameworks, Test Plans, and Test Reports meet command accuracy and quality standards while ensuring the applicable process steps are satisfied. In some cases, a Cyber Test Engineer (CTE) will be assigned by the warfare division to assist with test planning for cyber survivability. The SH is encouraged to consult with 01B, 01C, and 01D competency experts when encountering specific production or process challenges that are beyond the capabilities of the core team to address. Additionally, if further support is required to accelerate production, support execution of test, or respond expeditiously to emergent requests from the Program Manager, the TPM should notify the LTE and SH and work with the division leadership to ensure resources are adjusted as necessary within the warfare and competency divisions.

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SECTION 3 - GENERAL ADMINISTRATIVE PROCESSES

3.1 INTRODUCTION

This chapter provides general guidance that pertains to the development of all briefings and correspondence associated with OT&E. The principal output of OPTEVFOR is information for decision makers within the Navy, the Marine Corps, and the DoD, as well as, ultimately, Congressional decision makers. Given this audience, it is essential that all communications on behalf of the command reflect the highest standards of professionalism. The impact of the command's work is directly tied to the credibility of its products.

3.2 GENERAL

As members of the headquarters staff and supporting squadrons, individuals must understand that their actions and demeanor will reflect directly on the entire Force. All communications, whether formal or informal, should be conducted in a professional manner. No conversation or e-mail can be assumed private or "off-the-record." OPTEVFOR personnel will deal with a broad variety of stakeholders with differing views on many issues. Whether or not there is agreement, individuals should be treated with appropriate respect. Each stakeholder is trying to do what is perceived as best from their respective vantage point. There is no room for denigrating or personal attacks on the character or intelligence of any stakeholder regardless of the circumstances. TPMs, OTDs and OTCs are likely to find themselves briefing Flag and General Officers and members of the Senior Executive Service (SES), as well as, from time to time, Presidential Appointees. These briefings should be conducted with decorum and respect. Briefers must avoid hyperbole, sarcasm, and flippant remarks. By the same token, the briefer must ensure that the salient points of the brief are clearly presented on behalf of the Commander. The briefer should not try to "game" an audience by over- or understating an issue. The briefer should clearly state the facts, present a well-reasoned analysis that ties the results clearly to the mission, and draw conclusions.

3.3 COLLABORATION

OPTEVFOR personnel must collaborate early and often with internal and external stakeholders. The best results are generally attained when all perspectives are considered. If a TPM or OTD is having difficulty bringing key stakeholders together, it is essential that the matter be brought to the attention of the warfare division leadership. Failure to engage early often leads to unnecessary rework or a less-than-optimal product. Key stakeholders in the test design phase include the program manager's staff, the resource sponsor's representative, the developmental test community, and WDC. For programs under the Office of the Secretary of Defense (OSD) oversight, representatives from DOT&E and the Deputy Assistant Secretary of Defense for Developmental Test and Evaluation, as well as the supporting analysts from various Federally Funded Research and Development Centers (such as the Institute for Defense Analyses) should be included as well. Internal collaboration will involve the various process owners and support divisions as outlined later in this manual. Regardless of whether the collaboration is internal or external, healthy collaboration involves individuals as critical-thinkers participating in professional constructive conflict, not "groupthink". Using a team-focused approach, we

challenge our assumptions and thoroughly consider the stakeholder implications of the actions being taken. This promotes a means to resolve issues at the lowest level empowered to do so while remaining attentive to the facts in an objective manner.

3.4 CROSS-DOMAIN POST-TEST BRIEFS

It is critical for warfare divisions to glean lessons obtained through all phases of the test design, planning, execution, and reporting cycles and apply them to improve the efficiency and effectiveness of operational testing. There is added benefit when this is done at the cross-divisional level, especially when opportunities for collaboration and synergy are identified and implemented. One method to enable this is for warfare divisions to identify suitable candidates for briefing and provide these lessons learned in a cross-divisional setting.

3.4.1 Planning and Coordination

In order to enable consistent and predictable planning, table 3-1 provides an enduring schedule, identifying months when various warfare divisions are responsible for providing briefings. The Command Action Group (CAG) is responsible for scheduling and managing the execution of this briefing effort.

Table 3-1. Warfare Division Brief Schedule UNCLASSIFIED	
Warfare Division	**Briefing Month**
40	July / January
50	August / February
60	September / March
70	October / April
80	November / May
90	December / June

3.4.2 Identifying Suitable Candidates

Not all test programs are good candidates for briefing. If a test executes uneventfully (i.e., test design/planning/executions/reporting processes were nominal, no resource issues were experienced, there were no opportunities to collaborate between warfare divisions, and post-test reporting required little to no additional stakeholder engagement), there might be little value in providing a briefing to the entire command. If, however, a test team dealt with tough problems, experienced something new/unique, or learned things of great potential benefit to other warfare divisions, it might be a good candidate. In general, good brief candidate programs possess one or more of the following characteristics:

- Cross-divisional tests (i.e., ones in which multiple SUTs were tested together)

- Tests in which Fleet resources were shared between warfare divisions (i.e., collaborations)

- Uncommon types of tests (e.g., EOAs, Middle Tier Acquisition, Agile/SWAP, etc.)

- Unique test concepts

- Highly tailored test designs or plans

- Post-test briefings were required

- Critical thinking was required to solve difficult problems in test design, planning, execution, or post-test reporting

- Challenges during test required adaptability of test design, resources, etc.

- Unique stakeholder engagement

These briefs should not be limited to tests that have completed the reporting process. It is more important to share lessons in a timely manner. If critical lessons are gained during the strategy development, test design or planning process, consideration should be given to sharing them before waiting until the post-test process has been completed, which can end up being more than six months or a year later. These may include lessons learned during TEMP or Master Test Strategy (MTS) development, CBTE coordination, test design, test planning, etc.

3.4.3 Monthly Battle Rhythm

A repeatable process must be used to ensure suitable candidate programs are identified and nominated. The following timeline will be used:

Table 3-2. Nomination and Review Timeline UNCLASSIFIED	
Days Prior to Scheduled Brief	**Required Action**
30	Warfare Division A-Code identify brief and inform senior staff at a Council of Captains Meeting
14	OTD review scope of brief with Warfare Division A/B-Codes
7	OTD submit draft slides to Warfare Division A/B-Codes and TD for final review
0	Conduct briefing

OPTEVFOR must operate as a learning organization, actively sharing information across warfare divisional boundaries and continuously improving our ability to conduct operational testing and inform decision makers. This requires deliberate effort. Routine, recurring cross-domain post-test briefs are a necessary part of this process.

3.5 TRAINING FOR NEW TESTERS

New TPMs typically arrive at OPTEVFOR with a wealth of Fleet and leadership experience, which is crucial to successful performance. However, they rarely have a background in T&E. Therefore, training is required. COMOPTEVFOR instruction 3500.1 specifies the training required for any new tester at OPTEVFOR.

COMOPTEVFOR does not expect the TPM to know everything; that is not possible, especially during a 2- to 3-year assignment. The Competency Divisions, 01A, 01B, 01C and 01D, were established to provide technical support and assist the TPMs and OTDs in developing test products. They are a key part of the "standing army" that assists the TPM/OTD in accomplishing the job.

OPTEVFOR recognizes the need for a comprehensive training period for new testers. There is simply too much to learn. A 3-4 day course is not enough. A Training Integrated Product Team is working on a new model for training of new OPTEVFOR testers. The solution will include weeks, vice days of dedicated OT training before the tester reports to a warfare division. Implementation is expected in 2022. Meanwhile, training will continue to start with the 4-day OTD Course. Other advanced courses are optional unless or until actually needed to perform the associated tasks, at which time they become mandatory. These include the IEF Course, Test Planning Course, Suitability Course, Post-Test Iterative Process (PTIP) Course, and the Blue and Gold Sheet Writing Course. Do not attempt to create an IEF without having attended the IEF Course. Do not attempt to write a Test Plan without having attended the Test Planning Course, and do not attempt to prepare a test report without having attended the PTIP Course.

All testers are also required to take some number of Defense Acquisition University (DAU) courses. At a minimum, all will take the online level-1 T&E courses. Officers and civilians in certain billets must proceed to level-2 courses, and some billets require level-3. For those in acquisition positions, DAU certification is more than an opportunity; it is a requirement and a condition of employment.

Training dates for COMOPTEVFOR courses are found at the OPTEVFOR public web site. Seats may be requested at the public site by clicking the link provided.

3.6 POLICY AND REFERENCES

Policy at OPTEVFOR is found in COMOPTEVFOR instructions, including this manual, handbooks, checklists, and various document templates. Temporary or unproven guidance may be captured in a best practice document by a competency division. Warfare divisions and OPTEVFOR personnel are encouraged to capture lessons learned and other recommendations relative to all policy and guidance in order to validate or refine those policies. Once the content of a best practice has been validated for inclusion within a policy directive, the corresponding handbook owner will coordinate policy updates via the CCB as described below.

Testers and others need access to a wide variety of references in the course of their work. Within COMOPTEVFOR Headquarters, the information resources division (Code 20) maintains local area networks (LAN) for both UNCLASS and SIPR domains. These shared drive resources warehouse official records and working files for all OPTEVFOR divisions and employees. OT&E guidance and policy references can be found on the Y-drive of the LAN within the OT&E Reference Library. Templates and checklists are found in the OT&E Production Library within the folder for the specific type of document or product involved. When a competency division document (template or checklist) is updated, the respective competency division (01A/B/C/D) will hold a TPM/OTD call to review the changes and provide training on new policy/procedures included in those documents.

- Policy or Process Changes. Policy and process changes will be allowed time for review and comment before being approved and implemented. In general, a draft policy/process change will be reviewed by Competency Divisions 01A/B/C, and D. Their comments will be incorporated, then warfare divisions and VXs will be provided the draft change, and allowed adequate time to review and comment. The final draft will be provided and/or briefed to the CCB and then to the Deputy and COMOPTEVFOR if required. Once approved, the change may be promulgated by e-mail, pending incorporation into this manual or a handbook.

- Handbook Changes. Policy and processes are primarily documented in this instruction and in handbooks. This instruction intentionally does not specify process and details; those are the subject of the handbooks. Handbooks can be changed quickly, as the need is determined by the respective process/handbook owners. Handbook owners will make necessary changes, provide warfare divisions an opportunity to review and comment, then submit them to the CCB for approval. Once approved, the revised handbook is signed by the owner and promulgated and maintained by 01A. Revisions to this manual should become less frequent, as process changes can be more rapidly implemented via the handbooks.

3.7 SUT/SOS REQUIREMENTS

The unique responsibilities and substantial influence of COMOPTEVFOR will sometimes lead PMs, developers, and even contractors to solicit the opinions of individual TPMs/OTDs as to system enhancements that are desired or required. Requirements may be found in formal requirements documents, such as the CDD or the CPD, or they may be derived from DoD, SECNAV, or OPNAV Instructions, or published Tactics, Techniques, and Procedures (TTP). The subject of requirements is problematic. Everyone wants full capability in all areas. Unfortunately, that is neither practical nor affordable. The CNO must make a difficult set of choices, reflected in the approved requirements documents such as the CDD and CPD. These documents reflect the CNO's unique perspective across all programs and his/her statutory responsibility to provide the best possible manned, trained, and equipped forces to the Combatant Commanders. It is not the role of COMOPTEVFOR or any associated personnel to make recommendations as to how to correct deficiencies or enhance system performance. The Commander may recommend a timeframe for correction of deficiencies, or whether to continue program development, or to introduce a system to the Fleet, but OPTEVFOR personnel will not make recommendations for how to correct deficiencies. There are two major concerns with any requirements recommendations: first, if given in front of a contractor, they could be misinterpreted as tacit contractual direction; second, even if shared exclusively with the government program office, any recommendation may be considered to taint the objectivity of future evaluations.

3.8 GENERAL WRITING STYLE

As noted above, the principal audience for OPTEVFOR is senior civilian and military leaders with broad responsibilities. In addition to being factual and unemotional, ensure that the product is readable. That is to say, grammatically correct and without spelling errors. Some specifics:

- In general, avoid the use of acronyms except where they are in broad general use (e.g., NATO for the North Atlantic Treaty Organization) or where they are commonly accepted on a particular platform, such as AESA (Advanced Electronically Scanned Array) for the AN/APG-79 series radars on the F/A-18 E/F and EA-18G. Surprisingly, many acronyms are used for different terms at different classification levels across the Services and defense agencies. For example, the acquisition community uses "DA" to refer to the Developing Agency. Joint Publication 1-02 defines it as "data adapter aerospace drift; data administrator; Department of the Army; Development Assistance; direct action; Directorate for Mission Services (DIA); double agent."

- Use the active voice and simple declarative sentences where possible. Strive for brevity. The goal is to maximize communication in the minimum amount of time. Use data tables and figures to provide large volumes of data in a cogent manner.

- Remember, words have specific meanings. Precise is not the same as accurate. As any weapons tester will affirm, a weapon may be very precise but woefully inaccurate. Likewise "electrical" is not a synonym for "electronic." As a writer, one must choose one's words carefully.

- All OPTEVFOR reports are built around the Blue and Gold sheet construct. As discussed in the Test Reporting Handbook, the Blue and Gold sheets employ a formalized structure that presents complex information in a logical, usable format. Blue sheets describe issues or deficiencies with the SUT, while the Gold sheets describe issues or deficiencies that are outside the purview of the program of record undergoing test (the SUT), but are nevertheless essential to the accomplishment of the required warfighting effect.

3.9 EDITORS

OPTEVFOR employs an editing staff (01AE) to review and correct documents as they move through the document router. They improve documents by checking for template compliance, format, grammar, spelling, tables, acronym definition and other editorial issues. While the editing staff is part of the default review chain, they are there to help testers at any stage of document preparation. Editors <u>will</u> be included in all T&E document routes, regardless of who will sign.

3.10 BRIEFINGS TO THE COMMANDER OR DEPUTY

Read aheads and visitor biographies are due to the Front Office 48 hours prior to the meeting. Attendees are invited by the Front Office; do not forward invitations to additional invitees; notify the Front Office if additional attendees are necessary.

3.10.1 Preparing External Briefs (Navy Gate Reviews, OSD Overarching Integrated Product Team (OIPT) Briefs, ETC.)

The cognizant division director must provide the following information to the Commander upon learning of a decision meeting involving a CNO project for which OPTEVFOR conducted OT&E.

NOTE

Specific guidance for COT briefings to the DOT&E is provided in the Test Planning Handbook.

- Type of decision forum
- Date, time, and place
- Purpose of the decision forum (Milestone (MS) and production level)
- Schedule of preliminary briefs
- Whether a formal presentation is required
- Recommended OPTEVFOR briefer and other attendees
- Whether attendance by the Commander or Deputy is recommended.

3.11 COMOPTEVFOR'S POSITION

The warfare division must ensure that the Commander's position is accurately conveyed at the proper time (i.e., during the brief and any discussions that may follow). If the TPM/OTD is unsure about the Commander's position, raise the question through the chain-of-command. The division is expected to propose a OPTEVFOR position with supporting rationale, provided it can be supported.

3.11.1 Document Routing, Distribution, and Archiving

T&E documents are routed at COMOPTEVFOR Headquarters within the Electronic Document Router in Knowledge Management System (KMS). Standard routes have been created for the typical documents. All T&E documents are expected to be routed using the Electronic Document Router, and not by other means. The signer of a document is generally determined by table 3-2 below, though there may be circumstances that require a different signatory. Regardless of signatory, T&E documents shall be reviewed by the TD prior to signature unless otherwise coordinated between the Division Director and the TD. Once the document has been signed, there are still actions required to ensure proper distribution and archiving.

After signature, the signing office will ensure the document is serialized. Then, the signed document (paper) and the latest version of the Microsoft Word document will be transformed into the final Portable Document Format (PDF) document. This is done by Flag Admin for classified documents and by the editors for all UNCLAS documents. The result is a searchable pdf document with a table of contents, with all embedded files attached. Only Flag Admin and the editors have the Adobe Pro software and the ability to embed files. Standard Adobe users can only produce a "picture" of the document, which is not sufficient. Flag Admin or the editors will provide the finished pdf to the appropriate division for distribution to the addressees, by e-mail. They will also provide the pdf to Code 01A for archiving at Y:\00 Signed Test Documents. Responsibilities for post-signature document handling are shown in table 3-1 below.

For test reports, the Commander sends an e-mail to Navy and acquisition leadership before the report is distributed. The e-mail is drafted by the warfare division and coordinated by Flag Admin. It is important for the warfare division to refrain from distributing the report until after the Commander's e-mail has been sent.

Table 3-3. Document Routing after Signature UNCLASSIFIED			
Warfare Division	**Flag Admin**	**Editors**	**01A**
Ensure the final pdf document is being created by Flag Admin or editors. For classified documents Flag Admin will serialize. For unclassified documents, division provides serial number obtained from Admin.	Create final pdf with embedded files for all SIPR documents, regardless of who signed. Serialize if signed in Front Office.	Create final pdf with embedded files for all NIPR documents, regardless of who signed	Check final pdf for correctness, rename per naming convention, and post to Y:\00\Signed Test Documents on SIPR or NIPR
If necessary, provide signed document and latest Word version to Flag Admin (SIPR) or editors (NIPR) for pdf creation.	Send final pdf to 01A for archiving on y-drive, and to the division for distribution	Send final pdf to 01A for archiving on y-drive, and to the division for distribution	
Receive final pdf, verify correctness and searchability of document, and	For NIPR docs signed by 00, 00D or TD, provide		

Table 3-3. Document Routing after Signature UNCLASSIFIED			
Warfare Division	**Flag Admin**	**Editors**	**01A**
distribute to recipients as attachment to e-mail.	signed document (doc) and related files to editors for pdf creation		

3.11.2 T&E DOCUMENT SIGNATURE AUTHORITY

Table 3-2 identifies OPTEVFOR signature authority for the various OT&E documents. The smooth documents for the VXs, and rough and smooth for VMX-1, are to be provided to OPTEVFOR Codes 50 or 01A, as appropriate, via e-mail.

Table 3-4. Signature Authority UNCLASSIFIED				
T&E Document	**Response Time**	**Brief Required**	**Signature Authority**	
			N0	**DIV Director**
TEMP and T&E Strategy	15 working days (Note 1)	No (Note 1)	X	
Oversight test plans (Note 2) (Includes IOT&E, FOT&E, OA, EOA, and Multiservice Operational Test and Evaluation (MOT&E) oversight test plans)	60 days prior to test	COT Brief only	X	
All evaluation report letters (Includes MOT&E Test Reports). Note that TD signs Data Analysis Summary. Div. Director signs Deficiency cover letter.	60-90 days after test (Note 3)	No. Covered by ESERB	X	
Interim Reports	As required	Yes	X	
VCD messages/reports in which COI resolutions are being changed from the previous phase of test	35 days after test	No. Covered by ESERB	X	
Quick Reaction Assessment (QRA) messages/reports	60 days after test	No. Covered by ESERB	X	
All OT&E support letters (Warfare Division responsible for drafting)	30 days prior to test	No	X	
Deficiency report messages	As directed	Yes	X	
M&S Accreditation Plan	ASAP after need identified in E-IPR, NLT 1 year prior to test	Yes	X	
All M&S Accreditation Letters	NLT 90 days prior to test	Yes (for programs on oversight list)	X	
IEF/IEF Revision	(Note 4)	No. Covered by E-IPR	X	
Tailored IEF where 1) Mid-Tier Rapid Fielding will be decided, or 2) RCRM requires flag-level resolution, or 3) Warfare Division Director believes flag signature is most appropriate		No. Covered by E-IPR	X	
Tailored IEF that does not meet any conditions requiring 00 signature (see above)		No		X
IA/Interoperability Assessment Reports	NLT 90 days post- test	Yes	X	
Integrated Assessment Plan (IAP)	60 days after program initiation	Yes	X	

Table 3-4. Signature Authority UNCLASSIFIED				
T&E Document	**Response Time**	**Brief Required**	**Signature Authority**	
			N0	**DIV Director**
Operational Utility Assessment (OUA), Military Utility Assessment (MUA), and Limited Military Utility Assessment (LMUA) reports	60 days after demonstration unless specified otherwise	Yes	X	
VCD messages/reports in which COI resolutions are NOT being changed from the previous phase of test	35 days after test	No		X
Level of Test Determination (LTD) Report		Yes (for programs on oversight list)		X (Note 13)
Administrative Updates to Previously Approved TEMPs	As required	No		X
Capabilities Documents, Initial Capabilities Document (ICD)/CDD/CPD Clarification Letter	As required	(Note 5)		X
TEMP comment letters (for O-6 level reviews)	30 days from receipt	Yes (Note 6)		X
O-6 level reviews of MOT&E Test Plans and Test Reports	14 days from receipt	Yes		X
Non-oversight test plans (Note 2) (includes IOT&E, FOT&E, OA, EOA, and MOT&E non-oversight test plans)	30 days prior to test	(Note 7)		X
Oversight and non-oversight QRA and VCD test plans, and IT data collection plans (Note 8)	30 days prior to test	Yes		X
Risk/Deficiency forwarding letter	Prior to the SERB	No		X
Joint Capabilities Technology Demonstration (JCTD) Demonstration Execution Document (DED)	30 days prior to demonstration	(Note 7)		X
Anomaly report messages		(Note 9)		X
TEMP input letters	90 days after program initiation	No (for programs on oversight list)		X (Note 10)
Standard/Combined DT/OT Memorandums of Agreement (MOA)	30 days prior to test (at test plan signing)	No		X
IEF Change Letter	(Note 4)			X
Support documentation (Integrated Logistic Support Plan (ILSP), Navy Training Plan (NTP), etc.)	15 days from receipt	No (Note 8)		X
M&S Operational Requirement Input Letter	During IEF development, as soon as need is identified	No		X
Letters of Instruction (LOI)	30 days prior to test	No		X (Note 11)
Adjunct tester forms	30 days prior to test	No		X
DT assist MOA-(if used)	30 days prior to test	No		Division Director/ VX CO
IT MOAs and Charters	As required	No		Division Director/ VX CO
AOC letters and DT Assist Letter of Observation (LOO)	30 days after test/ demonstration	As required		X
OT commencement messages or e-mails		No		X
OT completion messages or e-mails	End of test as	No		X

Table 3-4. Signature Authority UNCLASSIFIED				
T&E Document	**Response Time**	**Brief Required**	**Signature Authority**	
			N0	**DIV Director**
	determined by division director			
ACAT IVM & Abbreviated Acquisition Program (AAP) concurrence letters				X
OPTEVFOR Tactics Guides (OTG)	120 days after evaluation report	As required		VX CO (Note 12)

Notes:
1. Assumes a formal O-6 TEMP review has been completed and that all critical OPTEVFOR comments were satisfactorily resolved. If not, a brief to the Commander is required.
2. Commander signs all ACAT I, DOT&E oversight, and controversial test plans. Additionally, the Commander may sign all standard test plans, *when desired,* 30 days prior to testing.
3. Ninety days for ACAT I/IA and MOT&E; 60 days for all others.
4. For new programs, coordinate IEF completion to support initial TEMP development (MS-B). For existing programs, IEF must be approved in time to support next phase of test or MS. IEFs for programs on oversight list are forwarded to the DOT&E to support TEMP approval.
5. Briefs are on a case-by-case basis. The Commander may elect to sign comment letters with contentious issues.
6. Division Director shall brief Commander or Deputy on all TEMPS with critical OPTEVFOR comments.
7. Division director signs (provides a copy to Commander/Deputy for review; briefs on a case-by-case basis) standard ACAT II, III, and IVT test plans. Staff through 01A/C prior to division director signature.
8. QRA test plans for programs on oversight list are forwarded to the DOT&E. For the case of DOT&E oversight, the Commander will sign the QRA test plan.
9. Brief the Commander (or Deputy in his absence) prior to release.
10. Sign "By Direction."
11. LOIs prepared at VX/VMX/HMX may be released by the squadron Commanding Officer (CO).
12. VX COs authorized to sign "By direction." The Commander will sign controversial and special interest OTGs and all Naval Warfare Publications (NWP). Briefing requirements will be determined on a case-by-case basis.
13. If the LTD RCRM required Flag/SES-level intervention, the LTD will be signed by the Commander.

SECTION 4 - TEST DESIGN BASICS

4.1 MBTD

The OPTEVFOR MBTD process affects the full trade-space (cost, performance, and schedule) of OT. Early and continuous involvement by program stakeholders is key to efficient and accurate MBTD, resulting in strategies to integrate DT and OT, minimizing the number and duration of required test periods while maximizing the information provided to the Fleet and the acquisition community.

Figure 4-1. MBTD Process Flow Chart
UNCLASSIFIED
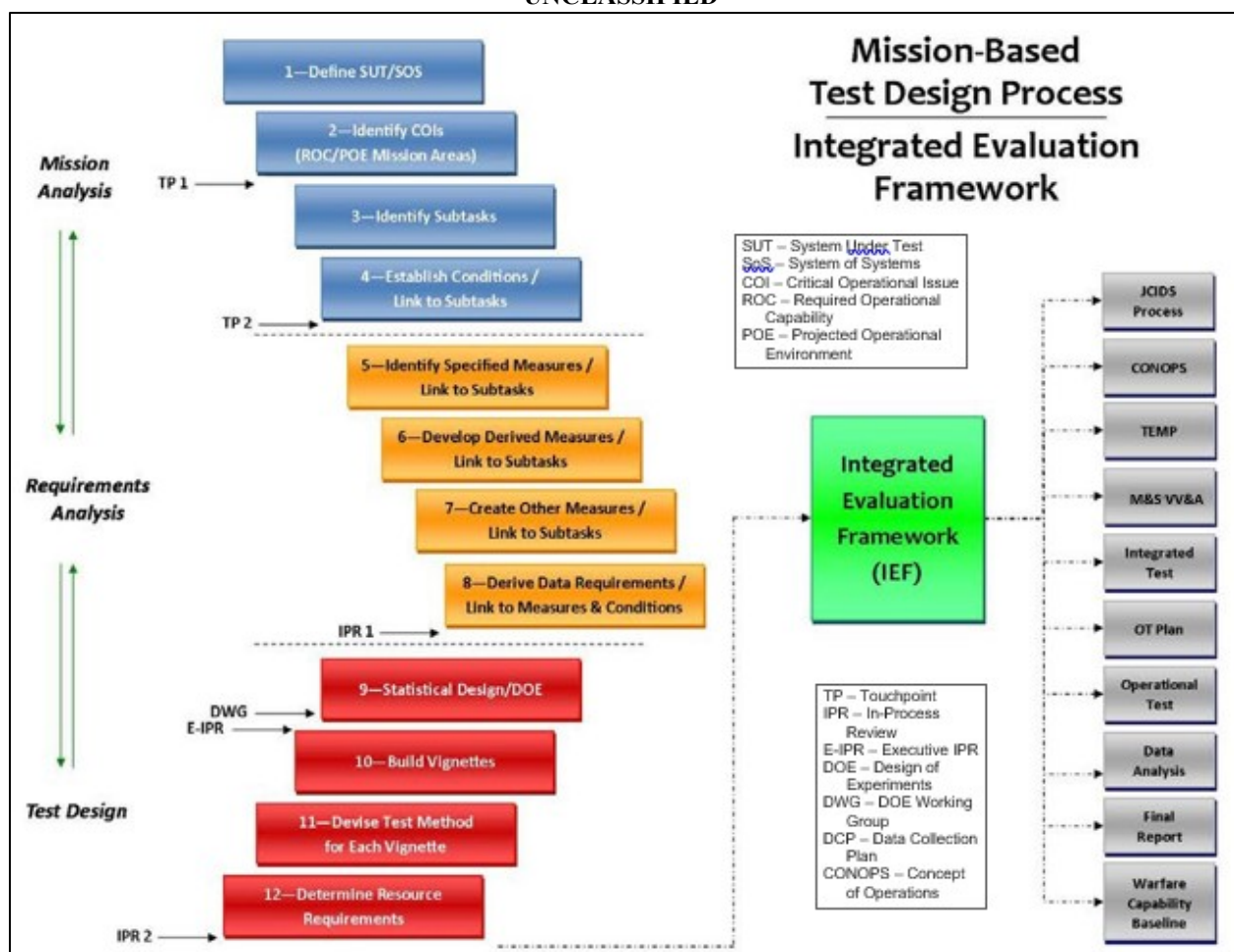
MBTD is an iterative, systems engineering approach to designing OT that is mission-focused and executable by the operational tester. It draws from, and informs many acquisition processes, to include those shown in the gray blocks of Figure 1. MBTD is divided into three phases, which are further subdivided into a total of twelve steps. The steps are sequential, but can be worked in parallel. The IEF is the written product developed using the MBTD process. This product provides

the OT measures, test vignettes, resources and other material required for TEMP inputs and OT Plan development. Though the IEF is an OPTEVFOR-approved document, all participating stakeholder inputs are formally resolved prior to COMOPTEVFOR approval. Disagreements between stakeholders that continue beyond the most important review meetings are adjudicated through the Running Comment Resolution Matrix (RCRM) process described at the end of this document.

Six reviews are completed as the IEF is being produced to ensure stakeholder alignment, and to provide course corrections to test teams when required. These reviews are decisional-working meetings, not final brief-outs of an approved test design. O6-level representation from the OPTEVFOR Warfare Division, Program office and DOT&E (if on oversight) attend with decisional authority. Reviews are stakeholder-collaborative events where all inputs and concerns are freely discussed and addressed. For all MBTD reviews, draft read-aheads are provided. Because of the iterative nature of the process, new information learned in later steps may require an adjustment of content from earlier steps; any changes to previously approved products will be discussed. The duration of the meeting is highly dependent on program size and whether the products are controversial.

4.1.1 Responsibilities:

Members of the "core team" who work together to execute MBTD, and their associated responsibilities are:

- TPM or OTD (50 Div OTC): Develop the IEF. The warfare division owns the product, providing final decision on IEF content. TPMs or OTDs (and support contractors) provide SME knowledge of the SUT/SoS and the mission, ensuring MBTD covers all necessary tasks, capabilities, and conditions so that test will be scoped to gather adequate/correct data. TPMs and OTDs must also verify that resultant STAT test designs, including DOE run matrices, are executable. Additionally, the TPM/OTD will track MBTD progress in the T&E Program System (TEPS).

- Squadron TPM or OTD (if applicable): Support headquarters MBTD efforts.

- CTF: Guide the TPM/OTD through the MBTD process. 01B owns the process, providing feedback on IEF content to the product owners. The CTF ensures MBTD products follow proper standards and result in logical design.

- LTE: Assist the TPM/OTD throughout the process.

- STAT/DOE Analysts: Join the core team when required to support STAT (including DOE) construction. Assist in balancing mathematical rigor and a scientific approach to testing, with a focus on providing timely and relevant information to the warfighter.

- A/DACOS: Chair (decisional authority) all MBTD reviews and ensure IEF content is ready for signature. The warfare division ACOS will sign TIEFs, as appropriate, per table 3-2. The warfare division ACOS also invites his/her O-6 counterparts (Resource Sponsor, PM, Fleet SME, WDC) to participate in the MBTD process as members of the core team.

- 0<u>1B</u>: The Test Design Director or his/her deputy co-chairs all MBTD reviews and ensures IEFs are developed per the MBTD process.

- 0<u>1C</u>: The Test Planning/Reporting Division participates as appropriate to ensures the MBTD is developed consistent with test planning, execution, and reporting policy.

- 0<u>1D</u>: The Cyber Division participates as appropriate to ensures the MBTD contains necessary cyber content, and the materials necessary for cyber test planning, execution, and reporting are being obtained in parallel.

- <u>Stakeholders</u>: External stakeholders, are important members of the core team and are critical to successful development of the IEF. This chapter provides program stakeholders insight on when and how to collaborate with OPTEVFOR on MBTD so that their concerns are properly addressed/incorporated.

4.1.2 Stakeholders:

The TPM/OTD must ensure the following stakeholders are aware of the MBTD effort, and are invited to participate:

- <u>OTA</u>: OPTEVFOR leads the MBTD effort, executes much of the resulting test, analyzes all the data, and reports to the stakeholders. Joint OTAs will be invited to participate. When OPTEVFOR is not the lead-OTA, MBTD is still used to develop Navy test design inputs.

- <u>Program Office / Developmental Tester / M&S Developers</u>: The program office engineers provide details on the systems, the envisioned program/test progression, the intended T&E resourcing, and more. The DT agency may adjust their events to provide IT, and will gather data needed by the OTA. The M&S developers will aid in determining feasibility of M&S to support OT data requirements.

- <u>Resource Sponsor</u>: The Resource Officer (RO) ensures requirements are understood/properly tested, T&E funds are justified/properly allocated, and the Fleet will be properly informed by test.

- <u>DoN T&E</u>: OPNAV N942 ensures the latest T&E policies are applied, facilitates target and range resources, and coordinates with resource sponsors to resolve program T&E funding shortfalls as necessary.

- <u>Testing Oversight</u>: Oversight organizations influence test designs they will need to approve. DOT&E reviews and concurs with the approved IEF via memo.

- <u>WDCs / Tactics Developers / Office of Naval Intelligence (ONI)</u>: WDCs provide the latest tactics to be used while ONI provides the latest insight on threat capabilities, tactics, and operating areas. Tactics development may also leverage planned events, including M&S.

- <u>Fleet Users, Trainers, and Planners</u>: The Fleet depends on accurate understanding of the system capabilities in order to use the system, train for use, and plan for use.

- <u>Others</u>: Anyone who can contribute to the MBTD process is invited to participate.

4.1.3 IEF development resources:

The following resources are available to support the MBTD process:

- 01B CTFs and STAT Analysts: Each SUT will be assigned a primary CTF, but all CTFs are available for TPM/OTD support. 01B statisticians aid TPMs, OTDs and CTFs in correct use of STAT.

- 01D Cyber Support: Cyber Survivability (CS) and cybersecurity are dealt with in multiple steps of the MBTD process. 01D assists per their processes. See Chapter 11 and the Cyber Survivability Handbook.

- IEF Checklist: The IEF Checklist is one of the handbooks. It provides detailed, step-by-step descriptions of what the TPM/OTD needs to accomplish to build an IEF.

- OT Analysis Handbook: An overview of STAT used at COMOPTEVFOR and a quick reference guide for warfare division personnel responsible for STAT-based test design, planning, and reporting. This handbook is not intended to be a statistical theory textbook, but rather a guide for warfare divisions on which STAT are most commonly used and what tools are available to assist TPMs, OTDs, LTEs, and contract support in calculating the results.

- M&S Handbook (under development): Most programs will have some elements of Modeling and Simulation (M&S) as part of their test design. Multiple MBTD steps include consideration of M&S support to the test and its inclusion in the IEF. This handbook offers guidance on the process and methods to identify M&S requirements and to ensure that M&S supporting OT&E is credible.

- Suitability Handbook: Direction on suitability testing within this handbook is vital to MBTD. This handbook also contains standard suitability measures and DRs to be considered for use.

- Templates: The document and brief templates include guidance and samples to aid in product development.

- Mission Based Test and Evaluation System (MBTES): MBTES, is the database tool which generates many of the tables used in an IEF (and test plans). It is maintained by 01B.

4.1.4 Timeline:

MBTD has the following timeline considerations and requirements:

- Initiation: MBTD starts early. Even before the WIPT begins TEMP construction, MBTD influences OPTEVFOR's review of the Capabilities Document (CD), and more. Stakeholder involvement supports the scope and sizing of not only OT, but DT, IT, M&S requirements, and if early enough, contractor testing as well. Problem identification, test resource reductions via shared DT/OT test data, system characterization in DT, and reductions in dedicated OT are all possible.

- Duration: IEF creation timeline depends on the program size/type, concurrent tasking of the test team, as well as the availability of input information. There will be many requests by the test team for information. Active stakeholder participation can greatly reduce the timeline.

- Completion: The IEF is signed for approval by the signature authority listed in table 3-2. TEMP OT input can, if required, be prepared after the E-IPR is complete (IPR-1 for TIEFs).

- Read-aheads: For the IPR-1, DWG, and IPR-2, read-aheads are required to be sent at least two weeks prior to the meeting. This enables stakeholders to review, provide feedback, and come to the meeting ready to represent a final position on the content being discussed and agreed to, thus supporting RCRM use. Under the accelerator team paradigm, as little as 48hr is allowed.

- Scheduling: Meetings should be scheduled with enough lead-time to allow desired attendees to sufficiently de-conflict their schedule. This is usually done when sending read-aheads.

- Meeting minutes: Within two days of the meeting, action items, meeting minutes, and a RCRM (IPR-1, DWG, and IPR-2) are distributed by the TPM/OTD for stakeholder comment.

4.1.5 Phases:

The MBTD process phases are:

- Mission Analysis: This phase identifies the SUT and SoS boundaries, and focuses on identifying mission areas supported by the SUT, creating a hierarchical decomposition of operator tasks to accomplish those missions, and association of conditions (physical, military, civil, etc.) that affect task performance.

- Requirements Analysis: This phase references required system capabilities and their established criteria to define measures of successful mission performance. SUT and SoS measures are linked to the subtasks to show how OT will evaluate the SUT as operators perform those tasks. Data Requirements (DR) for each measure and condition are also identified.

- Test Design: The test design phase leverages work to date to scope, schedule, and resource data collection for OT. The methods used to collect these data may range from a rigorous statistical DOE to simple demonstrations for problem identification. Vignettes logically organize data collection, setting the stage for test event construction. Test methods, including use of M&S are considered. Resources are detailed and limitations are recognized.

4.1.6 Steps:

The MBTD process has the following steps:

- Step 1, Define SUT/SoS: The hardware and software configurations of the fielded SUT are defined by the program office. The SoS, mission Concept of Operations (CONOPS)/Concept of Employment (CONEMP), employment TTPs, material support/sustainment concept, and cybersecurity implications are defined through stakeholder collaboration. These definitions

form the basis for the rest of MBTD, and are entirely dependent on accurate stakeholder input. When beyond IOT&E, the "in-scope SUT" concept often applies. The focus is new capabilities, enhancements and regression confirmation. Testing is not expanded to cover the out-of-scope SUT, though this remains open for evaluation if relevant issues are discovered.

- Step 2, Identify COIs: COIs are written by OPTEVFOR. For effectiveness COIs, use the standard mission threads based off the current ROC/POE (varying by exception only). For suitability, the standard four COIs (reliability, maintainability, logistic supportability, and availability) are considered, and can be expanded upon identification of need (e.g., training, personnel support). Cyber Survivability (CS), the third evaluation area, is generally assessed for all programs requiring OT.

- Step 3, Identify Subtasks: OPTEVFOR has defined first-level subtasks for each ROC/POE mission thread. Not all mission thread first-level subtasks may be applicable to mission accomplishment using the SUT. Missions are, as needed, further decomposed into lower-level subtasks that the user will perform per the CONOPS and TTPs. Suitability tasks may apply, depending on sustainment concept. Those tasks that are critical to mission accomplishment will later be classified as critical. A good subtask hierarchy is vital to correct identification of conditions/measures/DRs, construction of vignettes, reporting of results, and more. CS tasks are not currently written into the IEF.

- Step 4, Establish Conditions / Link Subtasks: It is not possible to test the SUT in every operating or environmental condition. However, the full breadth of the operating environment must be understood in order to select the testing conditions that are most critical to system success. Physical, military, and civil conditions are pulled from the Universal Joint Task List (UJTL)/Universal Naval Task List (UNTL) instructions, but in addition, custom conditions specific to the SUT mission tasks are almost always defined. Each condition is assigned levels (descriptors). Conditions are then linked to the lowest level of the subtask hierarchy base on whether task performance is impacted. CS conditions are not currently written into the IEF.

- Step 5, Identify Specified Measures / Link to Subtasks: A measure is a specific metric used to assess success of one or more subtasks. There are three measure types: specified, derived, and other. As the name indicates, specified measures are clearly defined in a resource sponsor-approved CD. The criterion assigned to a measure defines an acceptable level of system/task performance. Specified measure criteria are based on CD thresholds. When a threshold does not exist, the test team may establish a criterion to be used to evaluate the measure (specified, or otherwise), and will request resource sponsor concurrence. If the RO does not agree, the measure will remain, but with criterion of "No Threshold". Measures of Effectiveness (MOE) trace to effectiveness subtasks; Measures of Suitability (MOS) trace to suitability subtasks/COIs; SoS Measures can trace to effectiveness or suitability. At least one measure assigned to each critical task will be classified as a critical measure for those tasks. Measures may be assigned to more than one task if appropriate. Quantitative measures are preferred; good SUT documentation/requirements enable such measures. Thus, program

office and resource sponsor input is key to development of a comprehensive, testable set of measures. CS measures are not currently written into the IEF.

- Step 6, Develop Derived Measures / Link to Subtasks: Derived measures are sourced from some other agreed-to and authoritative document (e.g., system specification, CONOPS, tactical employment document). These link to subtasks.

- Step 7, Create Other Measures / Link to Subtasks: Other, or "OTA Created" measures are developed by test team when specified and derived measures are insufficient to evaluate effectiveness and/or suitability. These link to subtasks.

- Step 8, Derive Data Requirements / Link to Measures & Conditions: DRs must include the data element (what you are collecting), the unit of measure (e.g., yards, seconds, likert scale, qualitative), required data accuracy/frequency, and source of the data (where it comes from). Each measure or condition may have multiple DRs. DRs are categorized by similar sources. The DRs expected to come from DT require program office concurrence that the data will be available and collected during DT. OT will resource and collect the data if the PM does not agree to collect the data in DT. CS DRs are not currently written into the IEF.

- Step 9, Statistical Design / DOE: OPTEVFOR analysts, in consultation with the test team, will develop a quantitative test design using STAT. Per the Defense Acquisition Guidebook, STAT refers to the scientific and statistical methods (and associated processes) that are used to develop efficient, rigorous test strategies in order to yield defensible test results. DOE is recommended for use by the test community in DoDI 5000.02, and is the preferred STAT method when the test objective is SUT performance characterization across varying condition/factor effects. DOE refers to the process of planning an experiment so that appropriate data will be collected and analyzed by inferential statistical methods, resulting in valid and objective conclusions, which can be used by the Fleet for expected operational performance. Designs are only created for critical measures. The designed test must be executable, and defendable as the minimum adequate to support OT conclusions. Test is only sized for effectiveness data, but the validity of the scope of resulting suitability data is also examined. Resources/funding, agreed to in the TEMP, for IT/OT are driven by these designs. Stakeholder participation in this step is critical. This step, along with the existing DRs, prompts the team to identify needed M&S (e.g., targets, threat surrogates, computerized simulations). M&S is summarized at the E-IPR sufficient to understand objectives and resourcing.

- Step 10, Build Vignettes: Vignettes are groupings of subtasks that logically organize data collection for efficient test execution and resourcing. Often, they equate directly to test events. Vignettes are built for effectiveness, suitability, and CS. Each design created in step 9 must be associated with a vignette, which then has a matrix of runs to be completed under specific conditions. Ideally the run order is randomized. M&S details are added, to include enough to summarize intended uses and understand the path to accreditation. Cost savings are realized through vignettes taking advantage of IT, fleet exercises, or other test mechanisms/efficiencies. CS vignettes are added to the IEF.

- Step 11, Devise Test Methods: Specific test method write-ups for vignette execution can be added, but are not required for the IEF because Detailed Methods of Test (DMOT) are written in subsequent OT test plans (chapter 6). This level of detail is not necessary to provide a TEMP input. See Section 4.3 for specific guidance regarding Capabilities Based T&E (CBTE) programs.

- Step 12, Determine Resource Requirements: Resources are identified per vignette, and then combined in test events, periods, or phases (as appropriate for the TEMP input). With resources agreed to, the limitations to test are identified. Limitations represent data called for by the outputs of steps 1-9 that cannot be collected via the testing identified in steps 10-12.

4.1.7 Reviews:

The following reviews are completed between the MBTD steps:

- TP-1: This is a short (0.5-2hr), informal review, with phone-in (or on-site) participation by external agencies as they desire. Review section 1 of the IEF. TP-1 is often combined with TP-2.

- TP-2: This also is a short (0.5-2hr), informal review, with phone-in (or on-site) participation by external agencies as they desire. Review the subtask hierarchy, the conditions directory, and the tracing of conditions to subtasks (traceability matrix).

- IPR-1: This is the first formal review, more in-depth than the previous reviews and longer (2-6hr, or more). Stakeholder participation, to include the program office and resource sponsor, is critical at this phase. Review the measures matrix, the tracing of measures to subtasks (traceability matrix), the DRs for measures and conditions, and any prior products (as required).

- DWG: This is an exhaustive technical review of the test design, including assumptions and limitations, to ensure the test is properly scoped for live and/or M&S resourcing. It is scheduled for a minimum of 4hr. Stakeholder participation is perhaps more important than at IPR-1. Review IEF section 2, the design run matrices (if developed), and the Platform Mission Tasks (PMT) View Shell (PV-0).

- E-IPR: This flag-level review is often short (1-3hr). Stakeholder participation is not required, but program office attendance is encouraged. Review the PowerPoint brief summarizing all products to date and obtain Commander's concurrence with the work so far, and permission to continue.

- IPR-2: This final review is formal, but shorter (2-4hr) than IPR-1 or DWG. Stakeholder participation is not required, but program office attendance is encouraged. Review sections 3 and 4 of the IEF, to include vignette descriptions, run matrices, and resources, along with initial schedule, anticipated M&S, and limitation descriptions.

- Based on the iterative nature of MBTD, any material covered in a prior review can be discussed at a subsequent meeting.

4.1.8 The IEF:

The IEF is organized as follows:

- Section 1: The introduction section details document purpose, SUT/SoS descriptions, employment concept (mission, sustainment, and cyber), effectiveness COIs, suitability COIs, and CS applicability.

- Section 2: The test design section is often a direct input to the TEMP as the DOE appendix. It details the critical tasks and measures, experimental design and post-test analysis strategy by COI.

- Section 3: The test execution section is essentially the OT input to TEMP section 3. Vignettes are described with enough detail to understand resourcing. Leveraging the notional test schedule, vignette runs are matched up to testing phases/periods. M&S and limitations are here too.

- Section 4: The consolidated resources section provides OT inputs to TEMP resource tables, as well as resources by vignette.

- Appendices A/B: The MBTD products reviewed at TP-2, IPR-1, and IPR-2 are contained here. The PV-0 is also included.

4.1.9 Updating IEFs:

As a program evolves, new capabilities may be added, measures may be developed or changed for existing capabilities, lessons from testing may change the DOE for future test, and more. The changes must be documented/approved. The options for updating a signed IEF are:

- IEF Revision: A revised IEF leverages much of an existing IEF, but incorporates significant MBTD changes (addition or removal of capabilities, addition or removal of resources, and/or changes to test execution). The full MBTD process is executed to create revised IEFs. A full IEF document is routed for the Commander's approval signature. TIEFs are never revised.

- IEF Change Letter: An IEF change letter reflects small changes to the existing IEF content (tasks, measures, DRs, etc.) and has no impact on required resources. Complete only those MBTD steps and reviews applicable to the change. The updated IEF sections are attached to the change letter, using change format instructions in the Navy Correspondence Manual. The letter and the changed IEF sections are routed for Warfare Division ACOS approval signature. Signature authority for the IEF Change Letter can be elevated if the update includes high-visibility or controversial material. Copy 01A, 01B, and 01C on the signed letter. This ensures the support divisions are aware of the change approval and enables 01A to post the update to Y:\00\Signed Test Documents.

- Other: An IEF update is required if MBTD products will support test before any other OPTEVFOR document is signed. For example, an IEF revision should be signed by the Commander to update resources preceding a TEMP input. But often, MBTD changes can be approved via another signed document, such as a test plan. For these cases, no IEF revision or change letter is required.

4.1.10 Tailored IEF (TIEF):

The principal difference between a TIEF and a full IEF is that the TIEF may not execute all 12 steps of the normal MBTD process. This TIEF uses a template similar to a full IEF, but may not contain the same level of detail and may be abbreviated, as required. 01B and the Warfare Division Director will agree on how far in the MBTD process the TIEF should go. At a minimum, the first 8 MBTD steps will be fully completed, including conduct of IPR-1. TIEFs requiring the Commander's signature will complete E-IPR. A TIEF can be used to support:

- Programs in early development, to produce test design detail sufficient to support the Milestone A TEMP.

- Preparation for a QRA.

- Planning for, and input to programs where OPTEVFOR is not the lead OTA.

- Planning for, and input to nontraditional assessments of Navy programs (e.g., JCTDs) or MTA efforts.

4.1.11 Running Comment Resolution Matrix (RCRM):

The RCRM paradigm has been endorsed by DOT&E for use by all OTAs. A copy of the Joint OTAs RCRM MOA of July 2018 can be found in the MOA folder of the Reference Library. The RCRM serves to track/elevate (as needed) major disagreements between stakeholders. Comments that cannot be resolved at IPR-1, DWG, or IPR-2 are entered into the RCRM within 2 weeks following the meeting. The final RCRM is sent out to all stakeholders (even if blank), and a 90-day clock starts to resolve any documented comments. OPTEVFOR, the program office, and DOT&E each have a column in which to provide the specific language they want included in the IEF to resolve the comment. If stakeholder agreement cannot be achieved at the O6 level, unresolved comments are elevated to the Flag/SES level NLT 90 days from the RCRM issue date.

NOTE

An RCRM differs from a normal CRM in that it only lists unresolved comments with outside stakeholders as opposed to all internal and external comments, both resolved and unresolved. All programs use RCRMs, not just those on oversight.

4.2 PLATFORM MISSION TASKS (PMT) VIEW

The PMT View takes multiple forms and has multiple uses throughout test. It is required in all OPTEVFOR test efforts. Generation begins during MBTD as the system's missions are decomposed into subtasks, and as performance measures are selected and then linked to that subtask hierarchy. When the full PMT View concept is employed, it becomes a graphic depiction of the system's current, assessed/evaluated, mission-based capability. The primary use is clear and efficient communication of the overall development status of the SUT capabilities being introduced.

- Test Design: Within the IEF, the PMT view does not incorporate test results or capability evaluation. However, it still depicts the mission-based capability intended for delivery, along

with a graphical structure of how that capability will be evaluated. PMT View approval authority at this stage is consistent with the IEF/TIEF signature. The same is true if the PMT View is developed as part of a test plan. The IEF checklist details production of the PMT View Shell (PV-0).

- Test Results: The PMT View is populated using results of testing throughout the test continuum as those results are received. It provides a common, data-driven, and shareable perspective that is a useful reference real-time, on multiple levels. Population of results is completed as a part of the PTIP. The PMT View standardized format is relatively easy to update and share with stakeholders. The initial PMT View format is a Microsoft Excel-based tool. The Test Reporting Handbook details how the PMT View is populated.

4.2.1 PMT View Variants:

The PMT View is not a DODAF-defined view, such as an Operational View (OV), Capability View (CV), or System View (SV). However, for ease of understanding, DODAF-like nomenclature is used for the PMT View variants. The initial set of standard PMT View variants are listed below; these allow for consistent baseline use across all programs. The PV-0 is a direct product of the MBTD process. Each subsequent PMT View variant starts with the applicable portion of the PV-0 structure, and incorporate test results.

- PV-0: The PMT View Shell displays the uncolored formats for the various PV-1s. It is a set of Excel spreadsheets organized within a workbook and embedded in the IEF appendix A. When introducing PMT Views into established test programs, the PV-0 will be created, updated, or reviewed as an initial action.

- PV-1: The Performance PMT Views take several forms, displaying the colored status/results for tasks and/or measures on each COI, providing nuanced reporting over multiple tabs. As the PV-1 is built, it will be reviewed by the Program Manager and the OTA's senior representative prior to any Gate Reviews. The stakeholders should ensure approval at their appropriate levels prior to gate review.

4.2.2 PV-0 Revision:

The original PV-0 spreadsheets approved with the IEF should only be revised (e.g., capture changes in task structure or measures/conditions associated with those tasks) when the MBTD is revised or changed, which may occur during test plan development. The Warfare Division Director will approve these revisions.

4.2.3 PMT View Handling:

The PV-0 may be handled on NIPR and/or SIPR. All other PMT Views contain test results, and will normally be handled only on SIPR.

4.3 LEVEL-OF-TEST DETERMINATION (LTD)

Not every program requires formal OT. Not every acquisition decision within a program requires OT input. LTD is the process by which the type of OT involvement is determined to be: no OT,

observation of DT by OT personnel, or formal OT. It parallels MBTD steps 1-4, replacing the Risk Assessment Level of Test (RALOT) process. LTD only determines the level of OT required. If the LTD is formal OT required, then the MBTD process must be used to scope the amount of data collection necessary. A LTD briefing template (Y:\OT&E Production\IEF) is used to scope the information to be discussed at the LTD decision meeting.

4.3.1 Applicability:

LTD can, as required, be used on any SUT. The following are the most common use cases:

- Programs beyond IOT&E, when the need for FOT&E is in question.

- Concurrence with OT not being required, in support of ACAT IVM or AAP designations.

- Capabilities-Based Test and Evaluation (CBTE) test strategy development.

4.3.2 Considerations:

Considerations for LTD are similar to those of MBTD. The following amplifying information is provided:

- SUT: As with the in-scope SUT paradigm for FOT&E frameworks, the starting point for LTD is understanding changes to the system, and how those changes are expected to affect mission performance. SUT capabilities (new, enhanced, regression) are by far the most important LTD consideration. For example, OT is required for regression testing of a capability that previously required OT.

  o Consider the mission impact of, and operator involvement in, each capability. Is usability a concern for effectiveness?

  o Address HW/SW configuration changes. Is reliability impacted? Has accessibility changed for maintenance? Does the onboard-repair parts list add or eliminate items? Suitability alone can justify need for OT.

  o Cybersecurity must be taken into consideration.

  o Training on the SUT can affect performance. Training observation can be an OT event. Training changes may justify OT mission events. How much operator involvement is needed for task accomplishment using the SUT?

- SoS: Changes to the SoS can impact SUT task accomplishment. Identify such changes for consideration in LTD. However, SoS impacts alone cannot change the level of test, just as MBTD does not scope OT based on the SoS.

- Employment Concept: Has the mission CONOPS, sustainment concept, and/or cybersecurity concept changed? OT must verify the Fleet can employ the system per tactics and as trained. Changes in this area are examined. Additionally, mission CONOPS breakdown via tasks in MBTD considers the tactical environment (e.g. updated threat). OT may be needed for these concerns.

- Requirements: Testing for an upgrade is influenced by the goals of the upgrade. This is similar to capabilities, but brings threshold levels of performance into consideration. How much does the acquisition community understand about the intended results of the improvements? Will OT be needed to define mission success if the requirements are unclear?

- POR Acquisition Stage and/or Fleet Introduction Status: How much does the program know about their SUT, and their SUT's contribution to Navy missions? How much does the Fleet already know about the SUT? OT may be needed to fill large knowledge gaps.

- Prior Testing: What data is available already, and thus, what data is still needed? DT/OT of previous SUT iterations may provide data. CT/DT already completed for the current SUT version makes data available. If existing system performance is well-understood, less test may be needed to understand upgrades. The data must be applicable. How good was the training at previous test? What environments/threats were tested? How well is performance variation (vs conditions) understood?

- Planned Testing: Formal OT may not be needed. COMOPTEVFOR can issue an AOC (chapter 8) to inform fleet introduction based off observation of DT, but only if that DT is operationally representative. What is the SUT configuration and operator training status at DT, and will that status yield a fleet-representative test? To justify a higher test level, consider clarifying data pedigree needed above/beyond what is planned.

4.3.3 Procedure:

In place of a formal procedure, a LTD is accomplished by applying critical thinking and use of select steps within the IEF checklist as a guide while building the LTD brief. Leveraging MBTD, a process familiar to OPTEVFOR, makes the process repeatable, consistent, and efficient.

- Use the LTD template items applicable to your system, to identify the level and type of information, including cybersecurity, required to support a LTD decisional meeting.

- Though usually completed as part of the MBTD requirements analysis phase, identification of critical tasks and measures within the subtask hierarchy may also be completed, if the warfare division believes the additional information is required to conduct the LTD.

- Ideally, read-aheads are sent out 2 weeks prior to the LTD approval meeting, based on use of the RCRM paradigm. However, 48hr is acceptable.

4.3.4 Results:

One of three test levels can be recommended, or there may be insufficient information to recommend a level:

- No OT. This recommendation applies if:
  - No risk to critical mission capabilities,
  - No required regression,

- o   Little to no new/enhanced capabilities (e.g. obsolescence-driven changes only).

- Observation of DT. This recommendation applies if:

- o   Minor risk to critical mission capabilities,

- o   Regression testing requires DT data collection,

- o   Upgrades are not operator-intense; minimal new/changed training is needed,

- o   OT providing insight to a decision (via LOO or AOC).

- Formal OT (IOT&E, FOT&E, Ops Demo). Recommended when:

- o   Moderate (or more) risk to critical mission capabilities,

- o   Regression testing requires OT data collection,

- o   Significant new capabilities/enhancements,

- o   OT providing report/evaluation consistent with test.

Or, as mentioned above, there may not be enough information available to determine a level of test.

4.3.5 Approval:

Conduct the LTD approval meeting.

- The meeting is chaired by the Warfare Division ACOS and supported by the 01B Director. Stakeholder attendance is highly encouraged. Similar to the DWG, leadership is presented with sufficient background information as well as a recommendation from the participants. The ACOS has decisional authority and will either agree with the team's recommendation or direct a different type of test.

- The only required product prior to the meeting is the LTD Brief. MBTD products such as the IEF section 1, conditions directory, and/or subtask hierarchy are not required, but can be provided if required to aid in the final decision.

- The RCRM paradigm is used to resolve disagreements that cannot be resolved at the meeting.

4.3.6 Documentation:

A COMOPTEVFOR letter to the PM confirms the recommended OT level. The LTD Brief, RCRM (if comments exist) and approved meeting minutes are attached as enclosures. The LTD letter with enclosures is routed via the electronic document router and signed by the Warfare Division ACOS, unless resolution of the RCRM required Flag/SES-level intervention. In these cases, the Commander will sign. The letter is distributed per the IEF distribution list. For oversight programs, DOT&E is a "Via" addressee. A DOT&E approval memo is expected for oversight programs.

4.4 CAPABILITIES BASED TEST AND EVALUATION (CBTE)

CBTE is a test strategy selected by the program, guided by the Systems Command (SYSCOM), and fully supported by COMOPTEVFOR, that shifts the focus of Developmental Testing (DT) from requirement and specification verification (although those activities are still conducted) to assessing the capability of the system in the larger context of the SoS. COMOPTEVFOR policy is to fully support any program that adopts a CBTE approach. CBTE is more than "talking to COMOPTEVFOR early" or "conducting some IT", it requires continuous <u>collaboration</u> and <u>communication</u> in an <u>environment of trust</u> among all T&E stakeholders at all levels. Programs using CBTE understand that OPTEVFOR will be more active in their testing continuum, moving towards a pattern of observation of, or participation in, most, if not all, testing. Because OPTEVFOR already approaches OT from a mission-based capability evaluation perspective, the TPM/OTD and supporting team members must be proactive and cooperative in helping the program evaluate system capability during DT. CBTE does not replace the statutory requirement for OT, but it should shift system characterization from OT into DT and enable greater mission-based, operationally representative "free play" IOT&E and FOT&E, which could be aligned with Strike Group workup periods or large force exercises. The TPM/OTD is not alone in having to navigate a CBTE test program; OPTEVFOR has strategically identified "CBTE Champions" in the warfare divisions, and trained personnel in the Test Design and Test Planning competency divisions, to support CBTE programs. When a program initially indicates that they are considering CBTE, the TPM/OTD should notify their division leadership and their 01B CTF to obtain immediate assistance. Following that, training on CBTE is required.

4.4.1 Training:

When a program is considering or has decided to pursue CBTE, two important training courses are available to the program office and OPTEVFOR test teams. Both teams, led by the program T&E manager and the TPM/OTD respectively, should attend each course at the same time as foundation-building steps for future collaboration and communication and both courses should be completed at the earliest opportunity. The first course is the Introduction to CBTE (CBTE-100) course sponsored by the SYSCOM. CBTE-100 provides the "what" and the "why" for CBTE. The second course, sponsored by COMOPTEVFOR, is the IEF Course. In this course, the test teams will learn how to complete MBTD and develop the IEF for their programs. Additionally, as the test teams attend training, they should be creating the written agreement necessary to enable successful CBTE.

4.4.2 CBTE Memorandum of Agreement (MOA):

When the program has committed to a CBTE approach with OPTEVFOR, OPTEVFOR's support for that approach should be formally documented in a MOA between the Program Manager and the warfare division ACOS. This MOA, developed by the test teams with the help of SYSCOM leadership and COMOPTEVFOR CBTE Champions, should address the commitment to developing an environment of cooperation, communication, and trust; conducting MBTD and developing an IEF that is useful across the test continuum; leveraging the IEF to create TEMP inputs; OPTEVFOR participating in early DT and Contractor Testing (if applicable); cooperatively planning and executing IT events; participating in data analysis activities and sharing test data; and cooperating in understanding the system's capabilities in the context of its operational environment and its SoS. Additionally, the unique aspects of CBTE should be addressed in the

program TEMP, the Master Test Strategy (MTS), and/or the Integrated Test Team (ITT) Charter as applicable.

4.4.3 MBTD and IEF:

MBTD enables CBTE. MBTD use is being expanded within the CBTE paradigm to form the basis for evaluation of capabilities tied to the mission throughout all testing (CT/DT/IT/OT). It provides a common framework around which tests may be designed, planned and executed to maximize efficient use of resources in capturing required test data. CBTE/MBTD should start as soon as possible within program test activities to ensure development of a test design supporting RFP release and the Milestone (MS) B TEMP. In the case of a program that is being developed using a Model-Based Systems Engineering (MBSE) approach (instead of a traditional paper document-based approach), early execution of the MBTD process will support inclusion within the model and influence requirements development. However, CBTE can be initiated at any point in the test program where testing can be influenced. CBTE programs are not just observers of the "COMOPTEVFOR MTBD process." CBTE requires an IEF that must be cooperatively created during MBTD, thoroughly understood and agreed to with the program's stakeholders, and then actively adopted as a DT, IT, and OT planning tool. The IEF provides the collaborative "script" to guide the program's CBTE test continuum. CBTE does not fundamentally change the execution of MBTD. However, the following additional considerations apply when executing MBTD for a CBTE program:

- Close coordination among all stakeholders to collaboratively accomplish the process. Scheduling MBTD reviews may be more challenging when ensuring full participation of CT/DT stakeholders.

- The OT team will lead MBTD for test programs where formal OT is required. For test programs where formal OT is not required (determined via the LTD process), the program DT team will be responsible to lead MBTD. In this case, the OT team will participate in MBTD and provide assistance, upon request, particularly in the development of a statistical test design (DOE).

- CBTE uses MBTD to develop common data requirements during IT. IT test plans require an expanded DMOT during MBTD to ensure successful execution and data collection to support both DT and OT. As the tactical expert and OT Subject Matter Expert (SME), active TPM/OTD involvement in DMOT development is critical to successful test design.

4.4.4 TEMP:

The test teams will use the approved IEF to inform creation of the TEMP. The TEMP will document efficient data collection over the test continuum to satisfy the identified measures in support of COI resolution. The Director, OT&E will provide approval of the test strategy, for programs on the oversight list, to include IT conduct, with signature of the TEMP.

4.4.5 Test Planning:

CBTE does not replace the requirement for OT, where testing is supported by the Test Planning, Test Execution, and Test Reporting Handbooks. In a CBTE approach however, there will be many

earlier IT events that will require cooperatively-planned, SYSCOM- or program-approved IT plans capturing test objectives, procedures, resources, and data collection and analysis requirements. Unlike OT phases with a single test plan, CBTE IT may be accomplished using multiple test plans across the program's test continuum. IT objectives may be incorporated in the main body of the test plans or be included as an appendix attached to the test plan. IT plan development will follow the SYSCOM process, guidelines and format, and should clearly identify those portions of the MBTD applicable to the identified test phase through alignment to the IEF Vignettes. The TPM/OTD/OTC will actively participate in IT plan development, bring their operational expertise to the process and advocating for the operational environment, threat surrogacy, and OT data collection and analysis requirements. Each IT plan may not include the entire MBTD, but should clearly articulate what portions of the design, by vignette run, are planned for accomplishment. It must also provide a SUT/SoS description (or reference to the description in a corresponding document), the relevant COIs, the measures, any known test limitations, a DMOT, and any data scoring requirements and procedures unique to the test phase. This plan will include the tasks to be performed and the associated conditions to be considered for the test, as identified in the IEF. The program manager, or representative, will approve the IT plan for use by the program office test team. At the conclusion of IT plan development, the TPM/OTD will conduct a CBTE Test Plan Review Board (TPRB) with the division ACOS, Technical Director, 01B, 01C, 01D, and the DOT&E Action Officer (AO). The TPM/OTD will brief the test objectives, the system's current hardware and software configuration, the IEF vignettes to be conducted, the DMOT, all aspects of operational and threat realism, the data to be collected and its relevance to OT, and the data scoring and analysis plan. The ACOS will sign a memorandum approving the IT plan for OT data collection. For DOT&E oversight programs where the TEMP does incorporate the CBTE strategy, DOT&E signature on the TEMP confers approval of the CBTE strategy and no additional approval document will be required. For programs where the TEMP does not incorporate the CBTE strategy, a document for DOT&E approval, such an IEF approval memorandum, will be required. If deemed appropriate by DOT&E, a Data Collection Plan (DCP) may still be required.

4.4.6 Test Plan Changes:

For changes to test plans after initial review and concurrence, the program TPM/OTD will review the changes in consultation with the assigned 01B CTF and 01C AO, to determine if the changes affect the MBTD or the qualification of data for use in OT. If MBTD is not affected, the test plan changes may be approved by the division ACOS without further review. If changes to the MBTD are required, the TPM/OTD will submit an IEF update (revision or change letter) for COMOPTEVFOR leadership approval and DOT&E concurrence (if required).

4.4.7 Data Collection, Scoring, and Analysis:

The TPM, OTD, or designated OT representative, should be onsite during the entire IT in order to ensure that the required data are being collected in accordance with the approved IT plan. The criteria and methodology for scoring data to support OT has not changed. In the CBTE construct, incremental data scoring may be required to ensure events are completed prior to moving on to subsequent test events or test phases. The frequency, conduct, and composition of scoring boards should be discussed in the IT plan, MOA, or ITT Charter, and the TPM/OTD must ensure that all stakeholders understand how the scored data aligns with OT objectives. Critical thought is required when scoring IT data for OT use. Were the data affected by the system configuration,

the operational environment, the operator, or the threat surrogate? Not all data are affected by these criteria equally. The TPM/OTD must attend any post-test data analysis working groups, where the test results are presented, in order to gauge the program's progress in developing its required capabilities. Following completion of those working groups, program and OPTEVFOR test team leaders should convene to assess the test program's status and to develop a "way ahead" for future test events.

4.4.8 Platform Mission Tasks (PMT) Views:

The PMT View is a representation of the required tasks for a SUT to perform missions, organized by COI. PMT Views are designed to be used as an execution tool for test teams and as a way to communicate mission capability at decisional meetings. For more information and guidance on the development, use and business rules for PMT Views as part of CBTE, consult the CBTE Implementation Guide.

SECTION 5 - TEST AND EVALUATION MASTER PLAN (TEMP)

5.1 INTRODUCTION

The TEMP is the most important T&E document associated with an acquisition program; the controlling T&E management document. By regulation, it must be approved prior to commencement of OT&E. The TEMP is directive in nature, having been signed as submitted by, concurred with, or approved by all major T&E stakeholders. It documents the agreed-to solutions for cost, performance, and schedule within the T&E trade space. The TEMP defines and integrates test objectives, critical issues, system characteristics, test responsibilities, resource requirements, and test schedules.

5.2 ADMINISTRATIVE POLICIES

Policies and procedures for the development, staffing, and approval of the TEMP are found in SECNAVINST 5000.2F and DoDI 5000.02. Additional detailed guidance is contained in the Defense Acquisition Guidebook (DAG), and DOT&E TEMP Guidebook 3.1. Per DoDI 5000.75, business systems on the DOT&E Oversight List will document T&E management content in a TEMP.

5.2.1 Primary TEMP Purposes

- Combines the Developing Agency's (DA) DT&E strategy and COMOPTEVFOR's OT&E strategy into one integrated master strategy. Because the PEO/DA and COMOPTEVFOR have independent authority, within their respective areas, to determine program test periods and test resources, it is imperative that these independent efforts be integrated.

- Formal commitment among all stakeholders for the test approach for the life of the program. Any differences between the DA and COMOPTEVFOR on the objectives, timeline, or resources for testing have been satisfactorily resolved.

- Direction to conduct the specified T&E program, including the sponsor's committed support, and approval of the COIs.

- Provides DoN T&E Executive (OPNAV N94) concurrence (ACAT I through III TEMPs, BCAT TEMPs with OT, and developmental Joint Program TEMPs) on the following:

  o The thresholds and objectives as stated in the TEMP Part I are consistent with CNO approved requirements.

  o The scope of testing makes appropriate use of the Research, Development, Test, and Evaluation (RDT&E) funding, which CNO must provide.

  o The planned commitment of Fleet units for testing is consistent with CNO directed schedules and priorities.

5.2.2 Other TEMP Purposes

- Provide the MDA and program sponsor with a clear understanding of what information will be available to support various decision forums through the program's course.

- Enables the DA to project T&E costs that must be funded.

- Enable Fleet, range, simulator, and target schedulers to plan well in advance for the required services. Resourcing specifics, particularly requirements for new or modified facilities, and M&S support should be identified in the TEMP.

- Establish stakeholder agreement on SUT, SoS, and the current threat per ONI threat assessment.

- Establish OT entrance procedures/criteria.

5.2.3 Multiservice or Joint TEMPs

For multiservice or Joint programs, a single, integrated TEMP is required. Component-unique content requirements, particularly evaluation criteria associated with COIs, can be addressed in a component-prepared annex to the basic TEMP. TEMPs for multiservice programs will be prepared in close coordination with other participating Services' OTAs and will be approved jointly by OPNAV N94 and the representatives of the other participating Service chiefs. When the Navy is designated as executive lead for development and T&E, TEMP preparation will be per SECNAVINST 5000.2F. The lead service will provide the baseline threat documentation. If the Navy is not the lead service, Navy-unique threat issues will be addressed.

5.2.4 Programs Covering a Collection of Systems

For a program consisting of a collection of individual systems, a Capstone TEMP (CTEMP) integrating the T&E program for the entire system may be prepared. A CTEMP addresses the T&E of a defense system comprised of a collection of stand-alone component systems that function collectively to achieve the objectives of the defense system. Individual, system-unique content requirements are to be addressed in an annex to the basic CTEMP. The requirement for a CTEMP is dependent on the degree of integration and interoperability necessary to satisfy the total system's minimum acceptable operational performance requirements.

5.3 ORGANIZATION/CONTENT

The relationship of key TEMP portions to the successful completion of the overall OT&E program cannot be overstated. The DOT&E TEMP Guidelines 3.1 dated 19 January 2017 describe the expectations for TEMP content in detail, and should be used as a guide when constructing TEMP inputs. The DAG provides the recommended four-part TEMP format that is the standard for OPTEVFOR. Use of the legacy five-part TEMP format should only be by exception. If the Program Manager insists on using the five-part TEMP format, the responsible TPM/OTD will inform the Commander/Deputy via the division director or squadron commanding officer as soon as possible for resolution at the appropriate level.

5.4 DEVELOPMENT

5.4.1 T&E WIPT

A TEMP is prepared jointly by the DA, the DT agency (if one is associated with the program), and COMOPTEVFOR, with the involvement of the OPNAV program sponsor and the OPNAV N94 T&E coordinator as needed. All stakeholders participate in TEMP drafting and approval through the T&E WIPT process. OPTEVFOR contributes to all parts of the TEMP (in working sessions, through comment letters, etc.) and provides the OT&E portions throughout the document. The TPM or OTD serves as the OPTEVFOR AO for the development or revision of a TEMP, keeping the OTC (if assigned), section head, division director, and deputy director informed as required.

5.4.2 MBTD/CBTE Contributions

The MBTD process prompts questions and drives coordination that aid in TEMP development. Often, the MBTD timeline is dictated by the TEMP timeline. MBTD review can serve as, or be scheduled to coincide with WIPT meetings. CBTE (section 4-3) requires even greater coordination, and there are specific TEMP contents required for programs using CBTE.

5.4.3 OT&E Inputs

The TPM/OTD should work with the program office to provide the required inputs to meet the program office's TEMP production timeline. The IEF provides the basis for the OPTEVFOR submission to the TEMP. The TPM or OTD works with the core team to develop the required schedule inputs for Part II, testing inputs for Part III, resource requirements for Part IV, and DOE inputs for appendix D (if applicable). IEF approval is not required before providing TEMP inputs, but E-IPR should be complete.

5.5 REVIEW AND APPROVAL

Formal TEMP review is initiated by transmission of the DA's proposed draft to OPTEVFOR. TEMPs are typically reviewed in their entirety twice: once when the DA submits a draft for O-6 level review, and again when the final version is received for the Commander's signature. OPTEVFOR staff reviews the entire TEMP since the Commander signs for concurrence on the integrated master plan for T&E. The TPM/OTD is responsible for ensuring that 01B and 01D have the opportunity to review and comment during each routing to ensure test design and planning assumptions remain valid. Reviewers should be especially sensitive to resource and schedule issues in the final draft TEMP.

5.5.1 AO-Level Review

This review is informal, and may not always occur. After the program office consolidates all inputs, they may disseminate the TEMP for comment by AOs before formal review by leadership. The goal is to reduce the time for, and number of formal comments. This process may or may not include a Comment Resolution Matrix (CRM).

5.5.2 O-6-Level Review

Remaining contentious issues are clarified/endorsed at the O-6 level. When these issues are fully adjudicated by the stakeholders, a smooth document can be produced for on-time, final signature. The OPTEVFOR review and response typically includes a CRM, with comments categorized as

administrative, substantive, or critical. A substantive comment identifies potentially unnecessary, incorrect, misleading, confusing, or inconsistent information. A critical comment is one which would cause COMOPTEVFOR to not sign the final TEMP; these must be briefed and approved by the Deputy or Commander prior to release.

5.5.2.1 TEMP Comment Letters (Navy)

To transmit the O-6-level review, the TPM/OTD prepares a letter commenting on TEMP contents for signature by the division director within the timeline of table 5-3. Multiservice TEMP comment letters must be routed within 14 days, per the MOT&E MOA. The TD shall review the O-6 TEMP and corresponding comment letter prior to signature.

Table 5-3. TEMP Comment Letter Timelines UNCLASSIFIED		
Days	**HQ Action**	**VX/VMX/HMX Action**
Next working day after receipt of TEMP	Draft TEMP is routed to the TPM/OTD/OTC, 01B CTF, 01D, LTE and CTE	VX/VMX/HMX – TPM/OTD is provided a copy for review
NLT 5 working days after receipt of TEMP	Draft TEMP with initial CRM and proposed cover letter entered in Electronic Document Router	VX/VMX/HMX – TPM/OTD provides copy of draft TEMP and response to COTD/CO for review
NLT 10 working days after receipt of TEMP	Brief for 00/00D scheduled if required	CO's comments provided to 50 Division Director
NLT 28 working days after receipt of TEMP	Conduct brief to 00/00D if required	CO/COTD participate in 00/00D brief as appropriate
NLT 30 working days after receipt of TEMP	Division Director releases O-6 Comment Letter (with 00/00D concurrence if required)	Not Applicable

5.5.2.2 Comment Letter Brief

Briefings to the Commander or Deputy are required prior to signature of all TEMP comment letters with OPTEVFOR critical comments.

5.5.3 Final Signature Review

Once all issues have been resolved, the smooth TEMP will be signed and dated by the DA and forwarded to COMOPTEVFOR for formal concurrence. Generally, there should not be any new issues raised when the smooth TEMP is routed for the Commander's signature. The only exception would be if other changes are made in the document subsequent to the O-6 review.

5.5.3.1 TEMP Forwarding Letters

TEMPs and forwarding letters should be staffed and returned to the DA/PEO/PM as soon as possible (15 working days maximum) after receipt of the TEMP for signature. The Commander signs all TEMPs and TEMP forwarding letters. Warfare Division directors are expected to address the following in the "Discussion" block of the Electronic Document Routing record:

- Status of comments previously submitted by COMOPTEVFOR: If any critical or substantive comments were rejected by the program office, address each one, and the impact of the rejection. Provide rationale for continuing with TEMP signature, or a recommendation for other action.

- Resources: Make a positive statement that resources have been reviewed and found to be adequate.

- Schedule: Make a positive statement that schedule has been reviewed and found to be executable.

- DOT&E Position: For oversight programs, identify areas of disagreement. Explain them, and provide rationale for proceeding to TEMP signature.

5.5.3.2 Approval Brief

Briefings are required when critical comments were not resolved, leading to the recommendation for the Commander to non-concur.

5.5.4 Signed TEMPs

Once signed by the Commander, the TEMP will be forwarded to OPNAV N94 for final staffing and approval at the appropriate level. For programs on the Office of the Secretary of Defense Oversight List, the TEMP must be approved by the USD(R&E) and the DOT&E. For non-oversight programs, final approval of DoN TEMPs rests with ASN(RDA) as the Service/Component Acquisition Executive. For Navy TEMPs, the OPNAV N94 approves on behalf of the CNO. ACAT IVT programs are the exception, as the TEMP will be effective once signed by the System Command's (SYSCOM) Commander or PEO, and COMOPTEVFOR.

5.6 UPDATE

Per DoDI 5000.89, the TEMP must be updated "as needed to support acquisition milestones or decision points". Update for the FRPDR "or thereafter… may" be required "to address changes to planned or additional testing". Changes separate from these specific events may be necessary when significant program changes occur, or when the program baseline has been breached. The DA is responsible for ensuring the TEMP is updated. Within the DoN, TEMP updates fall into two categories: revision and administrative change.

5.6.1 Revision

A revision addresses changes to evaluation criteria, scope of testing, major resources, and/or performance requirements. A revision may also be required if unanimous agreement is not reached to submit an update as an administrative change. A revision is signed by all TEMP signatories following O-6 and Final Reviews.

5.6.2 Administrative Change

An administrative change reflects fact-of-life changes such as personnel, schedule, test status, history, etc. These changes are assessed as low risk for adversely impacting the scope of planned testing, milestones, or the Acquisition Program Baseline (APB). Administrative changes may be promulgated by the PM based on the concurrence of the T&E WIPT members who represent the signatories. For OPTEVFOR, this is the Warfare Division Director. Use the TEMP Change Letter template.

5.7 TEST AND EVALUATION COORDINATING GROUP (TECG) (DON ONLY)

5.7.1 Critical Difference Resolution

In those rare cases where there are critical differences among the DoN TEMP stakeholders that cannot be resolved by informal Flag-to-Flag or Flag-to- SES discussions, it may be necessary to convene a TECG. This Flag/SES forum has been required very infrequently. TECGs will be convened by the Director, Test and Evaluation Division (OPNAV N942), via formal correspondence that outlines the purpose for convening the TECG, identifies the attendees, and provides an advanced agenda for review prior to the meeting. Additional information on TECGs is in SECNAVINST 5000.2F.

5.7.2 Other Purposes

In addition to resolving critical TEMP differences, a TECG may also be used to implement urgent required changes to TEMPs. In this case, either a page change will be issued or the formal report of the TECG will be attached to the TEMP as an annex until the next required update or review. Finally, all Navy disputes concerning ACAT IV designations and disputes concerning the need for OT&E (AAP) that cannot be resolved among the stakeholders may be arbitrated by the TECG process.

SECTION 6 - TEST PLANNING

6.1 GENERAL

For more detailed information about the Test Planning process, refer to the Test Planning Handbook.

6.2 INTRODUCTION

The OT communities' value to the acquisition process stands in the observations and evaluations provided to the stakeholders in the form of robust, repeatable, and defendable test reports. The most valuable elements of these reports are clear and concise mission-focused COI results paragraphs and Blue/Gold sheets. The well-constructed test plan is inextricably linked to the well-written test report. A properly executed test plan provides the test team with all the data required to adequately evaluate the SUT within the SoS for any given COI. Additionally, since the MBTD process and resulting IEF forms the foundation for the test design, the IEF document is critical to and the source of the bulk of the content contained within OPTEVFOR test plans. The operational test plan adds the specifics not contained within the IEF or TEMP. Specifics, such as dates and location of the test, test assets and ranges, squadron number, aircraft type(s), ship name/hull number, support asset type and unit name/number, detailed scenarios, etc., all get spelled out in the test plan. Many times, the resources defined as the minimum adequate test in the IEF are not physically available or affordable for the test phase and force additional limitations to be included within a test plan. In other cases, development of the SUT will not have progressed as planned and elements may not have reached the anticipated level of maturity. With this as a backdrop, the operational test plan is the document explaining the "who, what, when, where, why, and how" for the OT. The TPM/OTD and supporting test team should expand upon the detailed work specified in the IEF and clearly point out any differences.

The OT plan must be coordinated with all stakeholders. Key stakeholders include DOT&E (for programs on the oversight list), the PM, the Resource Sponsor, Fleet representatives, Warfare Development Centers and analytical support activities. For multiservice tests where OPTEVFOR is the lead agency, close coordination with participating OTAs or responsible test organizations is essential. Proper coordination and early identification of issues requiring resolution to the OPTEVFOR chain of command is critical to successful preparation and approval of the test plan.

For an adequate OT, the OT plan must exercise the SUT within the SoS under conditions that are as close as possible to the expected operational and combat environment, using operational scenarios derived from MBTD vignettes in which Forces employ realistic tactics against realistic simulations of potential adversaries and targets. Additionally, the SUT must be:

- Representative (considering the stage of development and phase of test) of the intended production equipment (note: what is required to be representative for one vignette may not be adequate for another depending on what tasks are executed and what measures define their success).

- Operated and usually maintained by Fleet personnel. Operation by Fleet personnel is always required for OT once a mature (production-representative) system is available. System

operation by contractors or SMEs is not appropriate for OT in any but the earliest phases, usually EOA or OA when there is only a prototype or brassboard, or while depending on computer or paper drawings or simulation. The same is not true of maintenance. During early phases of OT, maintenance by Fleet personnel is usually not possible, making maintainability data unusable for COI evaluation. On occasion, the Navy's maintenance plan states a continuing role for contractor personnel in organizational-level maintenance. When testing a system with an approved plan of this kind, contractor personnel participation is permitted exactly as specified in the approved plan, and their performance is subject to review and analysis just as if they were Fleet Service personnel.

- Operated or exercised in an operationally representative environment. OT seeks to provide data on SUT performance (where performance includes all the elements of operational effectiveness and operational suitability) in the operational environment and the SUT's capability to contribute to the SoS in which it is employed.

- Installed (considering the stage of development) as it is expected to be installed in the Fleet.

6.2.1 Quick Reaction Assessments (QRA)

QRAs are used when necessity dictates a rapid deployment of a system in development to provide critical capability to the Fleet, or when the program sponsor desires a quick assessment by OPTEVFOR of capabilities, limitations, and considerations for operational employment of the new system. QRAs are completed in response to a QRA tasking letter promulgated by CNO (N94). The tasking letter, the program sponsor's request letter to CNO (N94), and any available MBTD product should be used to provide the basis for the QRA test plan (coordinate with 01C for the QRA test plan format). The test plan will be produced using the test planning process described in the Test Planning Handbook. The QRA will NOT resolve COIs, make effectiveness or suitability determinations, nor Fleet introduction recommendations. QRAs will only assess those capabilities or attributes identified in the tasking letter, and should make a risk assessment for early deployment relative to selected COIs.

By virtue of the rapid deployment need, QRAs are limited in scope. Although an IEF is not required, a QRA test plan should take advantage of an available IEF, if one already exists. If an IEF does not exist, and time permits, develop a TIEF to improve test adequacy (see chapter 4). The QRA test plan should be structured to provide clear insight into the risks associated with a rapid deployment with limited OT.

6.3 BRIEFING TEST PLANS

6.3.1 General Test Plan Briefing Instructions

The Commander approves all test plans forwarded for DOT&E review.

6.3.2 The Test Plan Brief

The Commander is briefed on all ACAT I and DOT&E oversight test plans (including OAs) as part of the test plan approval process using the COT brief. Briefings should be scheduled so that time is available to incorporate the Commander's guidance prior to briefing DOT&E no later than 180 days prior to expected test operations.

6.4 LIMITATIONS TO TEST

Limitations to any OT precludes the testers', customers', or stakeholders' understanding of the full range of capabilities of the SUT within the SoS. As such, any limitation to test implies the CNO or Fleet Commander is accepting some risk by not knowing the system performance or capability in the areas, conditions, or threats associated with the limitation. For test plans for mature systems where a test article exists (IOT&E, FOT&E, late stage OA and QRA), it is very important for the TPM or OTD to describe limitations not only in terms of what the limitation is, but also in terms of the impact of the limitation; what is it that will not be known in terms of the COI and what is the impact to COI assessment or resolution? Additionally, any mitigation for the limitation should be discussed. For EOA and OA test plans where the scope of testing is restricted due to the early position of the program within the acquisition life cycle; i.e., there is no representative test article and the EOA is being performed as a paper study, all limitations should be based from the frame of reference of the scope of testing. In other words, for an EOA of a ship that has not started construction, not having a ship to observe, walk on, and test is not a limitation to test, but would be described in the description of the purpose and scope of testing. Therefore, for EOA and OA test plans, severe limitations do not apply. Limitations fall into three categories, severe, major, and minor. The definitions for the three categories of limitations are as follows:

- Severe Limitations. Limitation(s) that preclude COI resolution and adversely impact the ability to form conclusions regarding operational effectiveness and suitability, or cyber survivability.

- Major Limitations. Limitation(s) that may affect COI assessment or resolution but should not impact the ability to form conclusions regarding operational effectiveness and suitability, or cyber survivability.

- Minor Limitations. Limitation(s) that have minimal impact on COI assessment or resolution and do not impact the ability to form conclusions regarding operational effectiveness and suitability, or cyber survivability.

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SECTION 7 - TEST DATA CONTROL

7.1 GENERAL

Test execution is one of the most critical elements of the OPTEVFOR mission. Refer to the Test Execution Handbook for detailed information.

7.2 SHARING AND RELEASE OF OT DATA AND RESULTS

7.2.1

As acquisition accelerates to meet urgent warfighting demands, OPTEVFOR will accelerate delivery of informative, relevant, and technically accurate reports to operational and acquisition leaders.

7.2.2 Test results are controlled at three levels.

- Raw Data. Objective raw data are the recorded results of operational testing, either manually in a data sheet or logbook, or using an automated data stream. These data (e.g. number of gun rounds fired) are immediately releasable by the TPM/OTD to the developing program(s), and also to the staff of the DOT&E as required by statute. We share objective data to enable the program's engineers to rapidly identify performance trends and any performance deficiencies, in order to quickly develop required corrections. Subjective data such as opinions, survey results, and guided interview notes will only be shared prior to the publication of the test report with the staff of the DOT&E. Evaluative conclusions will not be shared until publication of the test report, unless specifically directed by the Commander.

- Analyzed data. Analyzed data, including measure results and deficiency (Blue and Gold) sheets, are releasable to the applicable Program Manager (PM) by the warfare division Assistant Chief of Staff (ACOS) or test squadron Commanding Officer.

- Draft Blue/Gold sheets should be shared early and clearly marked with both a "Draft" watermark and the draft disclaimer from the deficiency sheet template. Sharing does not give the PM permission to edit or change deficiency sheets.

- Warfare Division Directors should brief the Technical Director, Deputy Commander, and Commander on any risk or deficiency sheet characterized as Major 1 or Severe prior to signing the Risk or Deficiency Cover Letter.

- Sharing finalized deficiency sheets via a letter should be tied to conclusion of formal review with the Competency Divisions, and should not be delayed. Keep the Commander, the Deputy Commander, and the Technical Director informed of stakeholder responses to shared deficiencies.

- Evaluated information. The Commander will normally release evaluated information via the test report following the conclusion of the E-SERB. Evaluated information includes COI resolutions (including "trending" evaluations in Interim Reports); Operational

Considerations; Effectiveness / Suitability / Cyber Survivability conclusions; and Fleet release / production / deployment recommendations.

- Information demand may overtake report production timeline. When this happens, with the appropriate Competency Division Director, Warfare Division Directors provide a recommended approach to accelerate information release, including what information to release and to whom.

- If an unsatisfactory COI resolution or a negative conclusion or recommendation is recommended, do not wait for the E-SERB to notify the Technical Director, the Deputy Commander, and the Commander. Warfare Division Directors and Squadron Commanding Officers should be prepared to discuss the data that led to the recommendations, near-term system acquisition and deployment milestones, and with whom the analyzed data has been shared, and their responses.

7.2.3

If the system has already deployed, Warfare Division Directors and Squadron Commander Officers should communicate directly with the unit Commanding Officer to obtain their updated perspective on the system's performance prior to the E-SERB.

7.2.4

In some cases delivered capability will not match Warfighter expectations. Prior to releasing the report to the Vice Chief of Naval Operations, the Commander may direct Warfare Divisions or Squadron Commanding Officers to brief evaluated information at the O-6/GS-15 level to the Warfare Development Center, Resource Sponsor, Type Commander, and Fleet Commander in order to give stakeholders an early opportunity to assess operational impact and deficiency mitigations.

SECTION 8 - EVALUATION REPORTS

8.1 INTRODUCTION

The evaluation report provides the CNO with COMOPTEVFOR's conclusions regarding a system's operational effectiveness, operational suitability and cyber survivability, and recommendations regarding Fleet introduction, further development, additional OT&E, etc. System evaluations of operational effectiveness, operational suitability, and cyber survivability are made on the contribution of the SUT to the SoS warfighting effectiveness. The evaluation report provides the information (test results, evaluation criteria, etc.) to substantiate COMOPTEVFOR's conclusions and recommendations.

- When conducted, EOA and OA phases of test require assessment reports to support MS-B and MS-C per DoDI 5000.02.

- Evaluation reports are prepared at the end of each OT&E phase and are required by DoDI 5000.02 for the FRP decisions. During times of compressed decision timelines the PM or PEO may request an Interim Report. This report will use whatever data has been evaluated to make an assessment of where the SUT performance stands in relation to effectiveness and suitability. As the name implies, this report has not considered all available test data and is not final, and therefore subject to change when the remaining data is fully evaluated. Publication of an interim report does not alter the requirement for a Final Test Report.

- Publication deadlines are specified in table 3-2.

- Assessment reports and evaluation reports are OPTEVFOR's most important contribution to the acquisition process. Test reports help form the basis for acquisition decisions by articulating the effectiveness, suitability, and cyber survivability of new systems and capabilities. Test reports also provide a historical record of testing. The goal of all OPTEVFOR reports is to clearly communicate the results of testing to all stakeholders. These results are communicated by describing what was observed, then using operational experience and judgment to evaluate the impact of those observations on mission accomplishment.

8.2 TYPES OF OPERATIONAL EVALUATION AND OTHER REPORTS

There are several types of reports provided as a result of OPTEVFOR involvement in programs. See table 8-1 for report format guidance.

Table 8-1. Report Format Guidance UNCLASSIFED			
Report Type	Test Type	Purpose	Format
OER	IOT&E	To report a full, complete phase of testing. Consists of a report letter signed by the Commander, a deficiency letter signed by the Warfare Division Director, and a data analysis summary memorandum signed by the Technical Director.	Full Report (IOT&E-FOT&E Report Templates)
OFER	FOT&E	To report a full, complete phase of testing. Consists of	Full Report

Report Type	Test Type	Purpose	Format
		a report letter signed by the Commander, a deficiency letter signed by the Warfare Division Director, and a data analysis summary memorandum signed by the Technical Director.	(IOT&E-FOT&E Report Templates)
OAR	EOA/OA	Early involvement OT reports used in identifying system enhancements and significant areas of risk to the program's successful completion of IOT&E in the form of Blue and Gold sheets. OARs are assessment reports that support all stakeholders, but do not support specific MS decisions.	Full Report

(EOA/OA Report templates) |
| OMAR | EOA/OA | Early involvement OT reports used to identify system enhancements and significant areas of risk to the program's successful completion of IOT&E in the form of Blue and Gold sheets. OMARs are assessment reports used to support MS decision meetings. | Full Report
(EOA/OA Report templates) |
DT Assist LOO	DT Assist	Per the PM's DT assist request letter.	Letter with enclosed Blue/Gold risk sheets (LOO template)
Letter	AOC	Per the MOA coordinated between the PM and the Warfare Division Director.	Letter with enclosed Blue/Gold deficiency sheets
QRA	QRA	To report findings for operational considerations/system capabilities when it is necessary to achieve a rapid capability in the Fleet. QRAs do not replace formal OT&E. They are used to support a rapid deployment of a capability to the Fleet.	Report (QRA Report template)
VCD	VCD	To report results for validating correction of specific deficiencies (specific COIs only) from previous testing (end-to-end testing may not be required).	Report (VCD Report template)
Interim Report	EOA/OA/ IOT&E/ FOT&E	Report provided when, due to unforeseen events, evaluation results are required prior to publication of the full OT report. The report provides the status of testing, an assessment of available data, and a recommendation (if appropriate). Use of this report is at the Commander's discretion. The full formal report is still required.	Report
MUA, LMUA, or OUA	JCTD	Products for the JCTDs that provide an assessment of military utility demonstrated. Not to be used for acquisition programs.	Full JCTD Report

Table 8-1. Report Format Guidance
UNCLASSIFED

8.2.1 Operational Test Agency Evaluation Report (OER), Operational Test Agency Follow-On Evaluation Report (OFER), and Software Qualification Test (SQT)

For IOT&E and FOT&E, system evaluations of operational effectiveness, operational suitability, and cyber survivability, are made on the contribution of the SUT to the SoS warfighting effectiveness. A separate operational effectiveness and suitability evaluation may be provided for the SoS capability to perform its mission in the operational environment only when there is sufficient data to conclude the SoS performance differs from the SUT conclusion. A fielding recommendation is provided in the OER or OFER. SQTs will use the same report format as IOT&E/FOT&E. See appendix C for additional discussion of SQTs.

8.2.2 Operational Test Agency Assessment Report (OAR) and Operational Test Agency Milestone Assessment Report (OMAR)

EOAs and OAs, whether conducted as stand-alone OT, combined DT/OT, or fully integrated testing, often support program decision points. These reports will be termed OAR or OMAR. OAR/OMAR requirements should be listed in the TEMP and, commonly support Defense Acquisition Boards or MS decision meetings.

8.2.3 Observing DT

DT assist LOOs are used to communicate with the program manager when accomplishing a DT assist. This feedback is in the form of observations of system performance using the DT assist Letter of Observation (LOO) format. The format for DT assist LOOs is a brief letter to the PM with attached Blue/Gold risk sheets for each performance issue identified.

AOCs are used when observing a DT phase or DT event(s) of an acquisition program to assess the operational capabilities of a System Under Test (SUT) prior to introducing/releasing it for Fleet/operational use and the Program has no future phase of Operational Test (OT) planned. The decision to conduct an AOC should be at the A-Code and Program Manager (PM) level in consultation with 01B and 01C. The AOC letter is addressed to the program stakeholders, includes a description of system capabilities and limitations observed during the DT, and includes attached Blue/Gold deficiency sheets for each performance issue identified.

8.2.4 Quick Reaction Assessment (QRA)

The QRA report will not resolve COIs, make effectiveness, suitability or cyber survivability calls, or provide a limited Fleet introduction, Fleet introduction, or Fleet release recommendation. The QRA report will answer the questions and address the purpose as outlined in the QRA request letter. As such, the QRA request letter is routed with the test report as the report is staffed for signature. Information from a QRA may be used by DOT&E in support of a "Section 231" report to Congress when a system being developed is fielded prior to the completion of IOT&E.

8.2.5 Verification of the Correction of Deficiencies (VCD)

For a stand-alone VCD phase of test, the VCD report is a letter summarizing the resolution of each evaluated deficiency, with all the deficiencies included as an enclosure.

For programs not on the DOT&E oversight list, when COI resolution is discussed in the test plan and if the VCD results enable a change to the resolution of COIs (beyond IOT&E), then those updated COI resolutions will be listed in the VCD report, thereby reducing the scope or eliminating the need for later phases of OT for the specific purpose of verifying the deficiency that has been corrected. For programs on DOT&E oversight, the only permitted change in COI resolution during a VCD phase of test is from SAT to UNSAT. See appendix B for a detailed discussion of VCD testing. For more detailed discussion of the Evaluation Report, see the Test Reporting Handbook.

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SECTION 9 - RESOURCES

9.1 INTRODUCTION

This chapter focuses on resources available to the operational tester. The chapter includes such topics as points of contact, services, instructions, responsibilities, and specific resources available to the tester. This chapter also provides an overview of the resource tools necessary to accomplish the job of a TPM or OTD.

9.2 ELECTRONIC RESOURCES

9.2.1 OT&E REFERENCE LIBRARY

General T&E references are found on the OPTEVFOR UNCLAS and SIPR share drives at Y:\OT&E Reference Library. In each domain, this folder contains a wide variety of valuable resources that are particularly useful for test teams, including:

- OT&E Manual (also on KMS)

- Handbooks (also on KMS)

- The COMOPTEVFOR briefing template

- COMOPTEVFOR Acronym and Abbreviation List (CAAL)

- COMOPTEVFOR OT&E Document Writing Guide Sheets

- Security classification marking instructions

- DoD, CJCS, SECNAV, and OPNAV T&E Instructions

- DOT&E Guidance

- M&S Instructions

- Various MOAs.

9.2.2 OT&E PRODUCTION LIBRARY

The Y:\OT&E Production Library on the UNCLAS and SIPR share drives hold references, templates, and guidance particular to OPTEVFOR products. For example, all templates and other related references for a test plan are found in the "Test Plan and DCP" folder. There are also folders for the IEF, M&S Accreditation, TEMP Input, Cyber Survivability, Test Execution, and Test Reports.

9.2.3 SECURITY CLASSIFICATION GUIDES AND CLASSIFICATION MARKINGS

It is extremely important that OPTEVFOR documents have appropriate security classification markings. To mark documents properly, the TPM/OTD must have the current Security Classification Guide (SCG) for the particular program, as found on the Defense Technical Information Center (DTIC) website. If the SCG for a particular program is not posted, the

TPM/OTD should contact the program office. The TPM/OTD must also review the latest guidance on how to mark unclassified, Controlled Unclassified Information (CUI), and classified documents, which is found at Y:\OT&E Reference Library\Security Classification Guides. Further assistance is available from the Security Manager or from the editors.

9.2.4 THREAT SYSTEMS DATABASE & TETRA

Under a MOA between DOT&E and the Defense Intelligence Agency (DIA), the Test and Evaluation Threat Resource Activity (TETRA), within the Missile and Space Intelligence Center provides ongoing intelligence analysis and support for DOT&E threat resources while managing and overseeing any DOT&E investments for the development of threat resources.

TETRA maintains a Threat Systems Database (TSD) and naval and other warfare 'handbooks' at the SIPR address below. Operational testers and test planners may use this resource as a means of accessing multiple accreditation documents for the various land and sea ranges throughout the Major Range Test and Facility Base (MRTFB) infrastructure.

https://tsdb.msic.dia.smil.mil/home/main

DOT&E and TETRA also develop an annual prioritized list of foreign materiel requirements that are submitted to the Joint Foreign Materiel Program Office (JFMPO) which informs the whole of government materiel collection priorities. Actual foreign materiel and the information gained through the exploitation of foreign materiel is critical to developing and fielding weapons that work. COMOPTEVFOR participates in this process by providing annual inputs to DOT&E and TETRA, which contains what threat surrogates and/or systems we might prioritize for Navy testing.

COMOPTEVFOR's Test Design Division (01B) coordinates the Foreign Materiel Acquisition/ Exploitation (FMA/FME) input process. For more information on the FMA/FME process or for details on the TSD, the Threat Systems Lead is Mr. Heath Richardson, Code 01B3, (757) 457-6351.

9.3 T&E PROGRAM SYSTEM (TEPS)

TEPS is a module within the COMOPTEVFOR Knowledge Management System (KMS) on the unclassified LAN. (https://kms.cotf.navy.mil/home_auth/home.home_mis.home_main). TEPS is a Web-based management tool designed to assist the TPM/OTD/SH/OTC/LTEs in the tracking and administration of projects, Fleet services scheduling, and activity reports. Access to the TEPS database is limited to members of OPTEVFOR. Procedures for the use of TEPS may be found in appendix E, and in the TEPS User's Guide in KMS.

9.4 SHARED DRIVES

The K: drives on the unclassified and classified LANs are shared drives that support access to and storage of T&E documents. The drives are organized by division, and each division is organized by section, with each section organized by office code. While each division may set its own requirements, at a minimum, the K: drive folders for individual programs should be structured with the following guidelines.

9.4.1 Program Folder

Program folders should be named with the TEIN and short name (e.g., K:\40\41\0371- 03 CBASS). Each program folder should have subfolders for the following, as required:

- Each phase of test

- Requirements documents

- IEF

- Funding

- TEMP.

9.4.1.1 Phase of Test

Within program folders, each phase of test should have its own folder using the name of the phase (e.g., K:\50\54\541\0201-08 EA-18G\OT-B1. Each phase of test should have folders for the following documents:

- Briefs

- Messages

- Final report

- Test plan.

9.4.1.2 Documents

Once a final, signed, official document is available, save the document in PDF or Document (DOC) format, as applicable, in the appropriate division folder. Remove all draft documents from the main document folder by either deleting the draft document or moving it to a history folder. This action may prevent confusion as to which document is the most current. Chapter 3 states that the editors or Flag Admin will create a final PDF document after signature. These are provided to 01A for posting at Y:\00\Signed Test Documents.

9.5 PHYSICAL RESOURCES

Depending on the program, a TPM/OTD may need to arrange for support (i.e., data collection/analysis/reduction, ranges, targets, etc.) from a variety of activities. In addition to the resources available within the divisions and from the program offices, OPTEVFOR's Fleet Resources Office (01C7, LCDR Caity Atwood, Code 01C9A, 757-457-6245, for east coast, or Mr. Scott Higbee, 619-553-4568 for west coast) and Test Resource Requirements (Mr. Heath Richardson, Code 01B3, (757) 457-6351) can provide assistance in obtaining necessary support.

9.6 TEMPORARY ASSIGNED DUTY (TAD) TRAVEL

All TAD travel, either command or program funded, must be submitted and approved via the Web-based Defense Travel System (DTS). Establishment of DTS accounts and training are provided by the OPTEVFOR Admin office during the personnel check-in process. COMOPTEVFOR's policy is that all personnel exercise discretion in the stewardship of taxpayer funds and be frugal in the use of appropriated funds in support of travel by:

- Limiting travel to the absolute minimum level necessary to accomplish the mission in terms of the number of travelers, mode of travel, duration of travel, alternatives to travel, etc.

- Using teleconferencing, video-teleconferencing, and DoD sanctioned web-based collaboration capabilities (such as Defense Collaboration Services (DCS), Webex, and Microsoft Teams) in lieu of travel whenever possible.

- Using government quarters, where available; where appropriate, travel arrangements to locations in which government quarters exist should be done in a timely manner to allow OPTEVFOR travelers to use government lodging while on travel.

- Minimizing resource expenditure for vehicle rentals by ride-sharing arrangements whenever two or more personnel are traveling to the same place. Note that restrictions apply to ride-sharing when contractor personnel are involved. See the contracting handbook or consult with your division contracting Technical Assistant (TA) or the command Contracting Officers Representative (COR) if you have any questions or concerns.

- Navy Defense Acquisition Career Manager (DACM) pays for travel associated with training of Defense Acquisition Workforce Improvement Act designated personnel. Funding must be identified and received by the traveler prior to processing orders.

- Travel by staff personnel to support programs that have passed Full-Rate Production (FRP) Decision Review (DR) will sometimes require the use of command Operations and Maintenance, Navy (O&MN) funds. Due to the more restrictive financial rules that apply to O&MN funding, travel requirements that utilize these types of funds should be planned as early as possible in consultation with the division B Code and finance division.

- Use Gov't tax exemption forms wherever possible (States where they are accepted)

9.7 FLEET SERVICES

COMOPTEVFOR is the OPNAV N94 RDT&E Fleet support scheduling agent. This includes all DT and OT associated with acquisition programs and those projects and initiatives endorsed by OPNAV N94) requiring Fleet support under this process. The primary method to identify Fleet support for acquisition projects is in Part IV of the TEMP. There are two types of Fleet Service Requests (FSR): standard (quarterly) and emergent.

9.7.1 STANDARD FSR

Approximately 9 months prior to the actual execution quarter, OPNAV N94) sends the "QUARTERLY CALL FOR FLEET RDT&E SUPPORT REQUIREMENTS" message to all RDT&E agencies soliciting Fleet support requirements (the OPNAV N94 support request will include a cut-off date, after which service requests will be submitted via an Emergent FSR (EFSR) message). TPMs or OTDs submit FSRs per the Unclassified Test and Evaluation Support (UTES) database, which can be accessed from the KMS main page or https://utes.cotf.navy.mil/. The UTES Operator's Guide can be found on the COMOPTEVFOR main web page, Y:\OT&E Reference Library, or from the OPTEVFOR Fleet Resources managers. When preparing an FSR, the following questions should be considered:

- Hours per day? Day or night operations?

- Type of aircraft, surface ship, or submarine required?

- Sorties per day?

- Are services requested: dedicated, concurrent, or Not-to-Interfere Basis (NIB)?

- Consecutive? If not, minimum and maximum time between periods?

- In connection with other units?

- Can this be in connection with transit, Fleet exercise, or other project operations?

- Why these specific date(s)?

- How rigid are these dates?

- Which day(s) (when in connection with other assets)?

- Can these tests be done simultaneously?

- DT or OT?

- Phase?

- If a specific unit is requested, then why this particular unit?

- Is same unit(s) required each day (period)?

- Ship Alteration (SHIPALT)/ Temporary Alteration (TEMPALT) required or preferred?

- Test location/instrumented range?

- Which units have this equipment?

- Any riders? Justify number of riders.

- Any previous Separate Correspondence (SEPCOR)? If so, make note of it.

- Is this a continuation of previous quarter services?

- What type augmentation?

- Can more testing be done each day (period)?

- If this asset is not available, is remainder of services required?

- What is the minimum time required?

- Does your test support: MS C, LRIP, OTRR, Critical Design Review, IOT&E, FRP, and/or Fleet release?

- If your program is delayed, what is the delay impact? What is the cancelation impact?

OPTEVFOR resource managers (east and west coast) will forward all OT requests to OPNAV N942 for validation and prioritization. Once the validation and prioritization is complete, OPNAV N942 will forward the endorsed "Fleet RDT&E Support Requirements for that FY Quarter" to the OPTEVFOR resource managers, who, in turn, will enter them into Web-Enabled Scheduling System (WEBSKED) prior to the quarterly Commander, Task Force 20/ Commander Third Fleet scheduling conference.

When the scheduling conference is completed, OPTEVFOR resource managers will contact the respective TPMs or OTDs by e-mail (SIPRNET preferred) or telephone with the results of the conference. The following is a list of possible conference results.

- Unit Assigned – When a specific unit is assigned, the OPTEVFOR resource managers will provide the TPM/OTD with the scheduled unit POC. The TPM/OTD should contact, at the earliest opportunity, either the unit POC or the command/activity that has been assigned, to ensure that the requirements are known and integrated into the unit's planning at an early stage, and to have COMOPTEVFOR added to the distribution of unit CASREP and CASCOR messages.

- Direct Liaison Authorized (DIRLAUTH) – OPTEVFOR resource managers will execute DIRLAUTH to locate platform-level support and provide a unit scheduling agent POC to the TPM/OTD. The TPM/OTD will coordinate with the unit scheduling agent to determine supportability, while keeping the OPTEVFOR resource manager informed.

- No Fill – Fleet support request is not supportable.

- Open – Fleet support requested was not available during the scheduling conference; however, it may become available sometime after the conference. All OPEN requests will be reviewed regularly by OPTEVFOR Fleet resource managers for a potential support opportunity.

In all cases, it is advisable that the TPM/OTD contact the PM regarding assigned services for any PM-required action. TPMs or OTDs should follow up face-to-face or telephone contacts with the service provider with an e-mail detailing the substance of the discussions and save all e-mail traffic with the service provider in order to avoid misunderstandings.

OPTEVOR Fleet resource managers will provide Fleet scheduler contact information for applicable platforms assigned to the TPM/OTD. TPMs or OTDs should establish contact with the Fleet scheduler (or platform operations officer) as applicable and as soon as feasible. TPMs/OTDs should be prepared to provide details about what is expected of the platform/crew during testing. OTDs should notify OPTEVFOR resource managers if, during the course of coordination with the platform scheduling agent, the testing is deemed not supportable.

TPMs/OTDs requesting submarine support for RDT&E must comply with the following procedures:

- Submit a copy of the COMOPTEVFOR signed test plan to the ISIC and SUBOPAUTH NLT 30 days prior to the event.

- For complicated tests (e.g., operating above 200 feet, in a high-density, contact-management environment, or shallow water environment), official briefings should be provided by the TPM/OTD well in advance of the event for the ISIC, SUBOPAUTH, COMSUBPAC/COMSUBFOR N3, and N32.

- A presail brief must be held with the ISIC and platform crew prior to the underway event.

9.7.2 EMERGENT REQUIREMENTS

Emergent requirements occur when a need arises for Fleet support after the deadline (approximately 9 months prior to the actual execution quarter) for a UTES submission has passed, or services are required in addition to those which were in the original request. When the need

occurs, the TPM/OTD will coordinate with the OPTEVFOR resource manager to determine the feasibility of the emergent services requested. If the feasibility check yields a negative response, a decision will be made as to whether or not the TPM/OTD will draft and transmit the EFSR message (OPTEVFOR warfare divisions in coordination with VX squadrons will determine message originator). When the OPNAV N94 endorses the EFSR message, the OPTEVFOR resource manager will enter the request into WEBSKED for resourcing. Once in WEBSKED, the responsible OPTEVFOR resource manager will coordinate obtaining support services.

NOTE

Emergent requests or schedule change requests have potentially negative impact on Fleet operations, maintenance, and training commitments.

TPMs/OTDs should make every effort to acquire Fleet support prior to the established submission deadline.

The following conditions must be met prior to requesting emergent services:

- The emergent service request must state why services were not requested during the scheduling conference.

- A draft or final test plan must be available so that services required can be clearly identified.

9.7.3 ASSET REQUESTS NOT SCHEDULED AT SCHEDULING CONFERENCES

Range and Operating Area (OPAREA) requests are normally coordinated directly with the facility's scheduling authority and the TPM/OTD. Due to the demand for these facilities, the TPM or OTD should coordinate with the range-scheduling agents well in advance.

9.7.4   FOURTH, FIFTH, SIXTH, OR SEVENTH FLEET SERVICES

Requests for Fifth, Sixth, or Seventh Fleet Area of Responsibility services should be submitted to OPNAV N942 via message with information copies to the program sponsor, Fleet commander, and commands involved. Once endorsed by OPNAV N942, OPTEVFOR Fleet resource managers will coordinate with applicable Fleet commanders for RDT&E assignments.

9.8 MULTISERVICE REQUESTS

9.8.1 MOT&E SERVICES SUPPORT COORDINATION

Each other-than-Navy Service OTA will establish an internal POC for requests and coordination when a single Service requires resources from other Services. The single-Service OTA conducting a test will initiate the request and coordinate the use of required Joint assets, and will be responsible for the scheduling and managing of those assets. The OTA POCs for test resources are listed below:

ATEC
DCSOPS (703) 681-2936/6518
DSN: 761-2936/6518

AFOTEC
A-8P- Programming (505) 846-1785
DSN: 246-1785

OPTEVFOR
Test Fleet Resource Scheduling East Coast: (757) 457-6245
DSN: 757-456-6245
West Coast: (619) 553-4568

MCOTEA
S-4 (703) 784-3286

9.9 RELATED COMMUNICATIONS

9.9.1   NOTICE OF INTENT (NOI)

The primary purpose of a NOI is to reserve a submerged OPAREA and establish procedures that will prevent mutual interference between submerged submarines, and between submarines and other operations, such as surface ships using variable depth sonar or dropping of explosive ordnance. COMSUBFOR/Commander, Task Force 20.3 is Commander, U.S. Fleet Forces SUBOPAUTH and is assigned the responsibility of coordinating and approving NOI requests. CTF-20 Operations Order (OPORD) 2000, annex C provides the procedures for requesting an NOI. If the test area, participating units, and timeframe are well defined, the NOI requests should be sent to Commander, Task Force 20.3. If test operations are ill-defined or inherently flexible, the responsibility for requesting the NOI rests with the primary participating unit.

9.9.2   COMMUNICATION PLANS

Communication plans are an integral component of any OPORD, Letter of Instruction (LOI), or Pre-Exercise (PRE-EX) Message. An important step in formulation of these exercise directives is the assignment of frequencies for short-term tactical and training evolutions. Guidance for submitting frequency requests is contained in annex K of COMUSFLTFORCOM OPORD 2000 series.

9.10 TEST TARGETS

COMOPTEVFOR's Test Design Division (01B) coordinates test targets for all Navy OT. The Test Target Coordinator is Mr. Heath Richardson, Code 01B3, (757) 457-6351.

A test target is a surrogate asset, used to replicate a particular threat or family of threats. The Test Target Available targets include seaborne targets such as the High Speed Maneuverable Target (HSMST), Fast Attack Craft Target (FACT), and the Mobile Ship Target (MST). Aerial targets, both subsonic and supersonic, are also available, along with a variety of UAVs. The inventory includes an assortment of mine shapes, maneuvering undersea targets, and ground targets as well.

Test targets are no longer requested directly by COMOPTEVFOR. Rather, target allocation for testing occurs through OTD/OTC coordination with the program offices, who in turn forward those requests directly to OPNAV N94 Targets office.

The Target Allocation and Requirements Tool (i.e. TART Tool) is a new database being maintained by the OPNAV N94 Targets office, and now used to track all target allocations. Within this tool on the NAVAIR portal, COMOPTEVFOR personnel can see upcoming test and training events, including those phases of test that are submitted by the respective Program Offices within NAVAIR and NAVSEA.

Warfare division personnel should request accounts and check where their events are in the schedule (and whether targets have been allocated). This should be done at least once per quarter. If there are any discrepancies, OPTEVFOR OTDs and other planners should consult with the respective program office. If there remain questions about target availability or allocation, please contact the COMOPTEVFOR Test Target Coordinator.

The TART Tool is located at the link below. Issues with obtaining TART Tool access or any related training needs may be forwarded to Mr. Richardson.

https://myteam.navair.navy.mil/org/targets/SitePages/Home.aspx

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SECTION 10 - MODELING AND SIMULATION

10.1 INTRODUCTION

Modeling and Simulation (M&S plays an important and growing role in OT&E. M&S may be used to provide data in support of OPTEVFOR's assessments of operational effectiveness and suitability, and cyber survivability. As a matter of law, M&S cannot be the only basis for IOT&E or FOT&E evaluations. Thus, every OT informing fleet introduction decisions must include some form of live testing. Before OPTEVFOR can use M&S data, the model or simulation must be accredited, signifying its acceptability for the Specific Intended Use(s) (SIU) in the associated test.

10.1.1 Guidance

.1C provides general guidance, including the requirement to use statistical techniques to compare live data to M&S data as part of the accreditation process.

Key Roles

The Commander is the Accrediting Authority (AA) for COMOPTEVFOR. The accreditation decision is based on the Verification and Validation (V&V) Report provided by the M&S proponent, which is generally the Program Manager.

10.2 THE VV&A PROCESS

The official DoD definitions for the three constituent processes are:

- **Verification**: The process of determining that a model implementation and its associated data accurately represent the developer's conceptual description and specifications.

- **Validation:** The process of determining the degree to which a model and its associated data provide an accurate representation of the real world from the perspective of the intended uses of the model.

- **Accreditation:** The official certification that a model, simulation, or federation of models and simulations and its associated data is acceptable for use for a specific purpose.

Figure 10-1 illustrates the VV&A Process, which starts with the IEF. The IEF formalizes the DRs, test design, and M&S resources necessary to resolve the COIs. It also serves as the first formal acknowledgement that M&S will be used during OT to supplement live test events, documenting the SIUs and summarizing the expected path to accreditation. More information about the IEF can be found in Chapter 4.

Figure 10-1. Verification, Validation, and Accreditation Process
UNCLASSIFIED

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┌─────────────────────────────────────────────────────────────────┐
│   Integrated Evaluation Framework (OPTEVFOR)  ┄┄┄▶                │
│                                                                   │
│   Requirements Letters (OPTEVFOR)  ┄┄┄▶                           │
│                                                 Modeling &        │
│   Accreditation Plan (OPTEVFOR)  ┄┄┄▶           Simulation        │
│                                                 (M&S)             │
│   Verification and Validation (V&V) Plan        Development       │
│   (M&S Proponent)  ┄┄┄▶                                           │
│                                                                   │
│   Validation Data       Validation Data from M&S  ┄┄┄▶            │
│   from Live Test  ┄┄▶                                             │
│                                                                   │
│   Runs-for-the-Record   Optional Accreditation   V&V Report       │
│   (RFR)         ◀┄┄     Memo (OPTEVFOR)    ◀┄┄   (M&S Proponent)   │
│                                                                   │
│   V&V Addendum (OPTEVFOR)   ◀┄┄                                    │
│                                                                   │
│          Accreditation Letter (OPTEVFOR)                          │
└─────────────────────────────────────────────────────────────────┘
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Document Requirements

COMOPTEVFOR develops the M&S Requirements Letter after completion of the IEF IPR-2, summarizing the capabilities that M&S must possess to satisfy the OT SIU(s). This letter, signed by the warfare division director, describes the SUT attributes and associated performance criteria which have been identified in the IEF to be addressed with M&S.

10.2.1 Plan Accreditation

OPTEVFOR's M&S Accreditation Plan documents the scope of the accreditation associated with V&V efforts, the criteria and methodology to be used, and a configuration management plan. The accreditation plan must be provided to the M&S proponent to support development of the V&V plan. The Program Office is responsible for the V&V Plan, whichThe V&V Plan incorporates the overall methodologies dictated by the Accreditation Plan into an executable process. It also defines the resources needed to perform the V&V, the V&V schedule, and identifies any issues associated with performing the V&V. The accreditation plan is collaboratively built with inputs

from the T&E WIPT members. Once all outstanding issues as documented in a CRM are resolved, the AP is approved by the deputy commander OPTEVFOR.

10.2.2 Support Validation

The V&V Report, also developed by the Program Office, focuses on the results of the V&V process and summarizes the analysis, assumptions, capabilities, and limitations of M&S. It also identifies any unresolved issues associated with V&V implementation and documents any lessons learned during V&V.

An Accreditation Memo is an optional document written by OPTEVFOR that states concurrence to conduct RFR based on a review of the V&V Report. The Accreditation Memo content is usually the same as the final Accreditation Letter minus the RFR analysis. The document is typically requested by the M&S proponent when significant resources are required for RFR.

10.2.3 Complete RFR

The formal OT M&S runs, referred to as RFR, are defined in the IEF and considered to be the minimum, adequate runs required to resolve the associated COIs. With all M&S data available, OPTEVFOR may produce a V&V Addendum containing independent analysis, if not already included in the V&V report.

10.2.4 Report Accreditation

The final step in the M&S VV&A process is for OPTEVFOR to issue the Accreditation Letter. This document summarizes the findings and includes the final decision to either fully accredit, accredit with limitations, or not accredit the M&S to support the OT SIU(s). The Accreditation Letter must be approved prior to including M&S results in any OT report.

PROCESS EXCEPTIONS

The full VV&A process assumes a computerized model that simulates SUT performance. Not all M&S for OT is this complex. Models that are not used to predict SUT performance but rather represent a threat or threat environment to stimulate a model will still require an accreditation letter, but they typically will not require an accreditation plan.

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SECTION 11 - CYBER SURVIVABILITY TEST AND EVALUATION

11.1 INTRODUCTION

This chapter introduces the basics of cyber survivability and its relationship to operational test and evaluation. For more detailed information on cyber processes and products, see the Cyber Survivability Test and Evaluation Handbook.

The purpose of the OPTEVFOR OT Cyber Survivability evaluation is to evaluate the system's capability to survive and operate after exposure to cyber threats, which attempt to prevent completing operational mission(s) by destruction, corruption, denial, or exposure of data transmitted, processed, and stored.

All systems assigned to COMOPTEVFOR for OT evaluation, for each phase of test, shall be referred to 01D for a determination of whether cyber survivability is required. 01D and the warfare division will work together to determine what level of cyber survivability OT&E must be conducted in order to meet policy and stakeholder requirements.

There are five documents that are most relevant from a TPM/OTD perspective for clarifying the requirements and guidance for the conduct of cyber survivability test and evaluation.

11.1.1 COMOPTEVFOR Red Team Memo.

01D was directed by the Commander to establish and maintain a National Security Agency (NSA) certified red team, as well as develop, maintain, and oversee cyber test planning processes and templates, and coordinate with external organizations with regard to cyber testing. This memo captures the overall responsibly of 01D as the cyber survivability test execution stakeholder and will be referred to as the OPTEVFOR Red Team (CRT) memo.

11.1.2 DoD Cybersecurity T&E Guidebook v2.0, April 2018.

This guidebook promotes data-driven, mission-impact based, analysis and assessment methods for cybersecurity T&E and supports assessment of cybersecurity, survivability, and resilience within a mission context by encouraging planning for tighter integration with traditional system T&E.

11.1.3 DOT&E

DOT&E Memo, April 2018. This memo directs Operational Test Agencies (OTA) to conduct a Cybersecurity Cooperative Vulnerability and Penetration Assessment (CVPA) and an Adversarial Assessment (AA) for all oversight acquisition programs. The OPTEVFOR cyber survivability planning process aligns to the requirements of this memo to collect data and analyze a system's capability to prevent cyber-attacks, mitigate the effects of a cyber-attack to maintain a mission capability, and recover lost mission capabilities to support follow-on mission requirements in a tactically relevant timeframe. This construct is referred to as Prevent, Mitigate, and Recover (PMR).

11.1.4 Defense Acquisition Guidebook.

The Defense Acquisition Guidebook (DAG) provides guidance on the process and procedures for managing risks through planning and executing an effective and affordable test and evaluation (T&E) program that enables the DoD to acquire systems that meet mission requirements. OPTEVFOR employees can access the DAG at https://www.dau.edu/tools/dag.

11.2 TEST PLANNING

The roles and responsibilities with respect to cyber test plan development are defined in detail in the Cyber Survivability Test and Evaluation Handbook. In general, 01D is responsible for providing processes, templates, and guidance for overall test strategy and planning. 01D will liaise with DOT&E to ensure test adequacy and address DOT&E concerns. Warfare divisions are responsible for developing the cyber survivability test plan in accordance with the OPTEVFOR cyber test planning process.

The pre-test planning steps occur as soon as the program is initiated in the division, notionally 12-18 months prior to test. The focus is to gather and evaluate the system documentation in order to establish the program's T&E strategy. Sometimes, pre-test planning may start when the system's IEF and/or TEMP is being finalized. In this case, 01D highly encourages early engagement with the TPM/OTD, Cyber Test Engineer (CTE), and PMO personnel to ensure all stakeholders understand the overall cyber survivability T&E strategy.

11.3 MODELING AND SIMULATION (M&S)

Due to scheduling, safety, Fleet asset availability, and other limiting factors, it is sometimes not possible for a full scope of test to be conducted in the operational environment. Therefore, other means to assess a system for cyber survivability may be explored through the use of non-operational cyber test assets, such as M&S. Cyber M&S accreditation follows the same process detailed in Chapter 10 above and COTFINST 5000.1C to ensure the program's M&S requirements letter and accreditation plan incorporate the necessary level of effort to verify and validate the simulation.

Additional information can be found in the Cyber Survivability OT&E Handbook.

11.4 TEST EXECUTION AND POST TEST PROCESS

OPTEVFOR Red Team is the primary test team supporting the COMOPTEVFOR Cyber OT&E with requisite authorizations and qualifications to operate on operational environment. Test team augmentation shall be coordinated through 01D. 01D Test Strategy and Policy (TSP) and CRT support the warfare divisions throughout the post-test process to develop final report products. The cyber test execution and post-test process is described in detail in the Cyber Survivability Test and Evaluation Handbook.

SECTION 12 - CONTRACT SUPPORT

12.1 INTRODUCTION

The workload of conducting OT&E may require augmentation by the contractor workforce. COMOPTEVFOR has several contract vehicles at its disposal to assist in obtaining the necessary contractor skill sets. The Contracting Officer Representative (COR) will assist you in choosing the right vehicle for your contract requirement. Refer to the Contract Support Handbook for guidance in preparing a contract package.

12.1.1 Key Terms/ Definitions

- **Contract** - a mutually binding, legal relationship which obligates the seller to furnish the supplies or services and the buyer to pay for them. It includes all types of commitments that obligate the government to the expenditure of appropriated funds except as otherwise authorized in writing. The OMNIBUS and GSA are examples of a "contract. "

- **Deliverable** - a product of a contractor or other agency's effort, partially or wholly fulfilling the objectives of a contract, per the requirement documents or other tasking.

- **Dispute** - a disagreement between the contractor and government regarding the rights of the parties under a contract.

- **Firm-Fixed Price (FFP) Contract** – a contract to pay a specified price when the supplies or services called for by the contract have been delivered and accepted.

- **Incremental Funding** - the obligation of funds to a contract in periodic installments as the work progresses, rather than in a lump sum.

- **Modification** - any formal revision of the terms of a contract.

- **Obligation** - a monetary liability of the government limited in amount to the legal liability of the government at the time of recording.

- **Option** - a unilateral right in a contract by which, for a specified time, the government may elect to purchase additional quantities of the supplies or services performed by the contractor, thereby extending the period of performance of the contract.

- **Performance Work Statement (PWS)** - a description of the work required, which results in clear, specific, and objective terms, with measureable outcomes.

- **Quality Assurance Surveillance Plan (QASP)** - a guide, which describes the contract monitoring methods in detail. The QASP is usually written by the same team who develops the work statement and is used in monitoring a contract.

- **Statement of Work (SOW)** - a requirements document for services. It describes work or services to be performed and may enumerate the methods to be used. It can apply to the acquisition of services or development of hardware. The SOW is the contractual vehicle for expressing exactly to what each party (the contractor and the government) is agreeing. Its clarity has a direct effect on efficient contract administration since it defines the scope of work.

- **Task Order (TO) Contract** - a contract for services placed against an established contract (i.e., OMNIBUS/GSA) or with government services.

- **Constructive Change** - a situation in which the contractor performs work beyond that required by the contract without a formal change order. It is perceived that the work originated from a Government informal order or is due to Government fault. A Government informal order can be defined as words or deeds excluding advice, comments, suggestions, or opinions.

Contract Support Review Board - A meeting chaired by the supported division to decide what type of contract support is required and ensure the level of expertise requested and scope of work are consistent with Command objectives.

- **Contract Package** - the set of documents, prepared by the division Section Head to initiate a contract or task order. Included are the SOW, Independent Government Cost Estimate (IGCE), TPM/OTD Form (if <$500k, TPM/OTD Form is an internal COMOPTEVFOR document), approved TPM/OTD Form, DD254, and signed/accepted funding document.

12.2 ROLES AND RESPONSIBILITIES

12.2.1 Contracting Officer

Fleet Logistics Center (FLC) Norfolk has unlimited authority to approve all TOs exceeding $500k. Only the Contracting Officer has the authority to change the terms and conditions of a contract or to enter into a new contract agreement.

12.2.2 Ordering Officer

COMOPTEVFOR has limited written authority (Warrant) to make business decisions limited to TOs and actions under $500k for OMNIBUS and $150k for GSA orders. The Ordering Officer conducts all task order administration functions, monitors task order compliance, collects information and provides recommendations to the Contracting Officer.

12.2.3 Command COR

The Command COR is an authorized representative of the Contracting Officer, designated by the command and approved by the Contracting Officer. The COR is the liaison between the end user (customer) and the Contracting Officer and Ordering Officer. The COR does not have the authority to change terms and conditions of the contract or enter into a new contract agreement.

12.2.4 Ordering Officer's Contract Specialist

Conducts all contract administration functions, is the liaison between the COR and Ordering Officer, has no written authority to make business decisions or change the terms or conditions of the contract or enter into a new contract agreement.

12.2.5 Technical Assistant (TA)

The requiring activity representative who may be assigned to provide technical/administrative assistance to the Command COR. TA's may be assigned to assist and support the COR but do not

have the authority to provide technical direction or clarification directly to the contractor. Each warfare division has a designated TA assigned.

12.2.6 Warfare Division Section Head

Identifies the need for contract support, executes the procedures for obtaining contract support as described in the Contract Support handbook, and obtains the required funding to support TO award. The Section Head will also draft the contract package with the support and assistance of the divisional TA and Command COR.

12.3 GENERAL CONTRACT TASK ORDER INITIATION PROCEDURES

12.3.1 The process to initiate contract delivery order/task orders should begin a minimum of 16 weeks prior to the desired start date of the period of performance. Refer to the Contract Support Handbook. Execute the Contract Touch Points as described.

See table 12-1 for the contract package generation process. Also see the Contract Support Handbook.

Table 12-1. Contract TO Package Generation Responsibilities UNCLASSIFIED	
Action	**Responsible for Action**
Using the Contract Support Handbook: Formulate the SOW, IGCE, and additional required documentation (e.g., DD254, approved TPM/OTD Form (provided by Finance upon receipt of funding), using the templates located on the Y: drive for the contract vehicle selected by the Contract Support Review Board. If using the OMNIBUS: Y: T&E/OTD Contracts/Contract Package Templates 2017. From the KMS home page, find an OTD Contract button located on the right-hand side column near the bottom, this opens the Contract Package Templates 2017 folder.	Section Head (SH)
Reviews contract package for accuracy and completeness	Division TA
Review and recommend approval.	SH
Review and approve.	Division Deputy Director
If under $500k, submit to COMOPTEVFOR Contracting Office for processing.	Contracting Officer Assigns a Contracting Specialist
If over $500k, submit to Fleet Logistics Center, Norfolk for processing.	COR

12.3.2 Ensure Funds Availability

Section Head will work with the TA and Division Director to ensure funding is available. Per regulatory requirements, if incremental funding is used, a minimum of 25 percent of the Independent Government Cost Estimate (IGCE) (or at least 90 days of coverage for performance periods lasting less than 1 year) must be provided along with a schedule of when remaining increments will be provided. Funds must be available at OPTEVFOR no later than 1 week prior to the submission of the contract package to the COR.

12.3.2.1 Funding

After funds are accepted by OPTEVFOR, the SH, OTC, or other designated representative coordinates with the Comptroller Division and submits a COMOPTEVFOR Funding Request

Document to the Comptroller. See Y:\T&E\Financial Guidance. Once signed electronically by the Comptroller, the TPM/OTD provides a hard copy to Supply. Supply then creates a requisition in PR Builder. Once approved, Supply provides the requisition to Contracts/01K. If required, schedule a Service Requirements Review Board (SRRB).

12.4 SERVICE REQUIREMENTS REVIEW BOARD (SRRB)

- COMOPTEVFORINST 4208.1 implemented the SRRB process in October 2016. See the instruction at Y:\T&E\OTD Contracts\SRRB Instruction.

- A SRRB is required for any service contract using Headquarters funds or a service that requires cyber test support. See the Contract Support Handbook for an SOP and checklist.

12.5 TECHNICAL EVALUATION BOARD (TEB)

12.5.1 General

Following receipt of contractor proposals by the Ordering Officer, a TEB will be conducted for every TO before an award can be made by the Ordering Officer. In unique cases where the Ordering Officer executes a sole source procurement, a TEB will not be required.

12.5.1.1 The TEB's purpose is to evaluate each of the competing proposals and each offeror's ability to perform the prospective task.

12.5.1.2

A technical evaluation is conducted to determine the degree to which each proposal meets or fails to meet the solicitation's minimum performance requirements through assessment of the strengths, weaknesses, and risks of a proposal. Technical evaluations will be conducted using rating methods including color or adjectival ratings, numerical weights or technically acceptable/unacceptable as dictated by the Ordering Officer via the COR.

Other elements such as past performance evaluation, cost/price evaluation and small business/subcontracting evaluation are performed by the Ordering Officer.

12.5.1.3

Evaluation of Task Order proposals (e.g., OMNIBUS, GSA, Seaport, etc.) may use one of the "Best Value" processes described below. SH should contact the COR for guidance. Successful evaluation is dependent upon a well-planned task order solicitation that includes a clear and detailed SOW. Award of a TO will be based on the factors contained in the solicitation. Source selection method can be LPTA or Trade-Off.

- Lowest Price/Technically Acceptable (LPTA). A LPTA is a source selection method in which each technical proposal is evaluated on the offerors demonstrated understanding of the SOW and how its approach will successfully accomplish the requirements of the SOW. Each technical proposal will be rated either "Acceptable" or "Unacceptable." Award will be made by the PCO or Ordering Officer to the offeror with the lowest technically acceptable bid.

- Trade-Off. A source selection method in which the Government will award the TO to the responsible offeror whose offer conforms to the SOW and is the most advantageous to the

Government, price and other factors considered. The trade-off method establishes weighting among the technical, past performance, and price factors. The weighting of factors is defined in the solicitation.

- Trade-Off Source Selection is more demanding because it is used to justify quantitative ranking and, as such, typically requires more time to conduct than LPTA. In addition, trade-off requires an in-depth, rational, and thorough technical evaluation of the offered proposals thereby critically distinguishing the technical differences between proposals.

See the Contracting Handbook for detailed TEB processes and guidelines.

12.6 TASK ORDER AWARD

12.6.1

Services are furnished as ordered by a D 1155 signed by the Contracting or Ordering Officer. The SH shall retain electronic copies of all contract related documents received from 01K Contracts. For program support contracts, the SH is urged to send a copy of all contract awards (to include modifications) to the program office to assist with tracking funds expiration dates and to ensure timely receipt of additional funds. A template e-mail is provided at section 12-13 which should be populated with key information to identify the specific amount of additional funds needed by the Contract Line Item Number (CLIN) # and date required.

TOs issued shall include, but not be limited to the following information:

- Date of order

- Contract and order number

- Appropriation and accounting data

- Item number and description of the services to be performed, period of performance, quantity, and unit price

- DD Form 254 (contract Security Classification Spec), if applicable

- DD Form 1423 (Contract Data Requirements List), if applicable

- Exact place of performance

- The inspecting and accepting codes (as applicable)

- The firm fixed price (award value)

- List of Government Furnished Property and the estimated value thereof, if applicable

- Any other pertinent information.

12.7 TASK ORDER MODIFICATIONS

A Modification or Bilateral Modification (supplemental agreement) is a contract modification that is signed by the contractor and the Ordering Officer. Bilateral modifications are used to make negotiated, equitable adjustments resulting from a necessary change in the scope of work. If you feel a modification is necessary, contact your Division TA.

12.8 INVOICE CONCURRENCE

The Command COR is copied on all invoices; timely verification by the SH of travel expenditures is critical. The SH shall review contractor monthly reports to confirm expenditures and be proactive in not exceeding the authorized travel budget. For every TO that has been awarded, an invoice will be submitted to COMOPTEVFOR via Wide Area Work Flow and received by our Supply Department. The invoice will be sent to the respective SH, Division TA and B Code by the Supply Department for review and concurrence/non-concurrence for payment.
Example:

DEPARTMENT OF THE NAVY
COMMANDER OPERATIONAL TEST AND EVALUATION FORCE
7970 DIVEN STREET
NORFOLK, VIRGINIA 23505-1498

Good Morning LCDR Jones.

Please review the attached invoices for accuracy of Labor and Travel/ODC, and respond with your concurrence so it may be certified for payment. These are in reference to (Program Name) Invoice received date: 14 JAN 2020.

A reply is required from the respective TPM/OTD/SH/OTC or division representative within 3 (three) working days. Timely replies are required to meet Prompt Payment Certification requirements and to ensure Contractors are notified of any invoice problems within three (3) days of receipt.

Approval recommendations imply that the nature, quantity and type of effort being expended by the Contractor are per the contract.

Very Respectfully,
LS2 Jane Doe
Acceptor/Purchasing Agent
COMOPTEVFOR Supply Department

12.8.1

The following is a list of responsibilities every SH must keep in mind when conducting a review of the invoice:

- The SH makes a timely response back to the Supply Department. This will help ensure that no additional costs (interest) are incurred by the government due to late responses.

- Ensure you have (at a minimum) the previous monthly report on hand to augment your invoice review.

- The goods have been received or the services have been performed and are per the contract, purchase order, or agreement.

- The prices, subtotals and totals are accurate.

- The invoice includes the contract, purchase order, or agreement number and is per the terms of the contract, purchase order, or agreement.

- The invoice is not a duplicate or has not been paid previously.

- If you have any questions or concerns with the invoice, immediately contact the COR for corrective action before any other action is taken.

12.9 ASSESSING CONTRACTOR PERFORMANCE

During task order execution, the SH should ensure the contractor is providing the goods or services per the stated requirement as identified in the SOW. If, during performance of the task, inadequate progress is being made, communicate immediately with the Command COR via divisional Assistant Chief of Staff (ACOS). Be prepared to discuss objective evaluation of the contractor's performance and any e-mails documenting communication pertinent to the issue. If necessary, a DD 2772 Contract Discrepancy Report may be prepared and submitted to the contractor, documenting the process of constructive performance improvement. The Contracting Officer will require this documentation should a need to issue a "Notice of Concern" or "Show Cause" be required. The form may be found at Y:\T&E\OTDContracts\CPAR.

If a positive Contract Performance Assessment Report (CPAR) has been submitted recently, the Contracting Officer will need significant documentation to support a decision to "Terminate for Default. "

The Command COR is required to execute a CPAR annually on each Contract Company supporting each task order at COMOPTEVFOR. The SH has the responsibility to provide input to the CPARS process. The SH's input should be submitted to the Command COR using the format provided on the Y-drive in the following location: Y:\T&E\OTD Contracts\CPAR. This should be submitted in an e-mail along with the attached WORD Form/Document.

12.9.1 Sub-Par Contractor Performance

NOTE

At no time will anyone other than the Command COR contact the Contractor to make a report of contractor sub-par performance.

If you are experiencing sub-par performance from a contractor who is supporting your program, follow these guidelines:

What To Do:

a. Ensure your TA is aware of your situation as he will be able to assist you in compiling all of the facts surrounding the sub-par performance, to include names of contractor(s) and government/military personnel involved, and details pertaining to the contractor's performance. Be sure to address whether performance complies with the SOW.

b. With the TA, see the Command COR. Be ready to discuss the facts.

12.9.1.1 Do Not:

a. Reprimand, belittle, or conduct a performance evaluation of the contractor.
b. Use contractor(s) for performance of inherently governmental functions.
c. Create or support a work environment that is hostile or unprofessional.
d. Authorize time off, sign time cards, or dictate work hours for contractors.

A complete list of governmental functions is found in the Federal Acquisition Regulation (FAR) Manual Part 7, Subpart 7.5, Inherently Governmental Functions. The Command COR has a copy of this document.

12.10 TASK ORDER CHECKLIST

Review the Task Order Checklist in the Contract Support Handbook (CTP 1 through CTP 7) to verify you have completed all the necessary steps.

12.11 TEMPLATE E-MAIL (WHEN DISTRIBUTING TASK ORDERS AND MODIFICATIONS) TO PM BUDGET OFFICE:

[SHs: Send an e-mail containing the following information when additional funds are needed to fully fund the current Period of Performance (PoP) under a TO:]

From: Section Head *(Insert name here)*

To: PM Budget Office *(Insert names of PM Budget Office Personnel here)*

Enclosed is a copy of TO #_____ *(OTD insert the 4 digit task order number found in Block #2 of DD Form 1155 or Block #4 of SF 1449)* **which was recently awarded under contract # _____** *(SH insert the 13 Alpha Numeric Contract # found in Block #1 of DD Form 1155 or Block #2 of SF 1449)* **providing contractor OT&E support services to the _____** *[SH insert the full Program Name as well as the short title Here.]* **program TEIN #_____** *[SH insert TEIN here.]*. **This TO is currently incrementally funded in the amount of $_____** *[SH insert the total "FUNDED" amount shown in Section B (usually the 2nd page) of the task order.]*. **An additional $_____** *[SH calculate & insert the difference between the VALUE of the CLINs to be performed during the current PoP and the total "FUNDED" amount of those CLINs.]* **still needs to be provided in order to fully fund the current period of performance which runs from _____** *[SH insert current PoP STARTING date DD MONTH YY]* **until _____.** *[SH insert current PoP ENDING date DD MONTH YY]*. **Please keep in mind that Defense Federal Acquisitions Regulations DFARS 232. 703-1(2) requires "an incrementally funded fixed price contract shall be fully funded as soon as funds are available." In order to prevent interruption of your critical program mission support (and to comply with acquisition regulations), please transmit the required additional funds as soon as they are available. Please ensure your funding document identifies the funds are for the following CLINs under the TO and Contract identified above:**

CLIN: __*__ # CLIN Description _____*_____ $___*_____ (amount needed to fully Fund)

CLIN: __*__ # CLIN Description _____*_____ $___*_____ (amount needed to fully Fund)

CLIN: __*__ # CLIN Description _____*_____ $___*_____ (amount needed to fully Fund)

[OTD insert 4 digit CLIN #, Description and the remaining amount needed based on TO].*

When transmitting additional funds, please e-mail a courtesy copy of the funding document to the Contracting Officer (*insert name & e-mail***), Contracting Officer's Representative (Tim Burrows <u>timothy.burrows@cotf.navy.mil</u>), SH, TA and COMOPTEVFOR Funds e-mail (<u>COMOPTEVFOR.Funds@cotf.navy.mil</u>).**

Thank You (SH *insert Name and Contact info*)

SECTION 13 - FINANCE

13.1 INTRODUCTION

This chapter focuses on financial resources available to the SH or OTC, and includes high level fiscal guidance. For more detailed guidance, see the Financial Handbook.

13.2 FISCAL GUIDANCE AND PROCUREMENT INTEGRITY

13.2.1

OPTEVFOR personnel involved with managing appropriated funds shall, at all times, act as good stewards of fiscal resources provided for executing the command's mission. The policy will be to establish and maintain a solid and unquestionable reputation for fiscal responsibility, such that COMOPTEVFOR becomes synonymous with the ideals of fiscal integrity, frugality, and value.

13.2.2

OPTEVFOR leadership and management personnel, particularly those directly involved with funds management and/or execution, will, in their appropriated funds dealings, always act conservatively, consistently, and unquestionably in the best interests of the command and the Navy, and, just as importantly, in the best interest of the American taxpayers. To be effective, funds administrators and managers should have a fundamental understanding and appreciation for basic financial principles and an understanding of the regulations and policies that must be followed. This is an area where it is essential that the SH/OTC ask the experts before acting.

13.2.3

OPTEVFOR staff frequently interface with contractor personnel, internally and externally. All staff must be familiar with the basic tenets of procurement integrity:
As representatives of the U.S. Government, OPTEVFOR staff must ensure not only full legal compliance but also that there is not even a perception of impropriety in dealing with individuals and organizations doing business with the Government. Actions that call into question an individual's integrity or propriety in financial or contractual matters can have far-reaching consequences for the DoN.

13.3 FUNDING SOURCES AND REGULATIONS

13.3.1

The purpose of this section is not to make the SH/OTC a financial expert; but rather, to provide a basic understanding of the key laws and regulations that must be observed and to help facilitate a clear dialogue between the SH/OTC and the Comptroller staff.

13.3.1.1 Sources of Funds

OPTEVFOR is financially supported by a variety of different funding sources:

13.3.1.1.1 Direct Operating Funds

OPTEVFOR is a "mission funded" activity (i.e., resourced to perform its mission directly through the annual Congressional appropriations process), where funds are appropriated by Congress directly to support the core COMOPTEVFOR mission. OPTEVFOR's annual operating budget, often referred to as HQ Funds, are provided solely from within the Research, Development, Test, and Evaluation - Navy (RDT&E-N) appropriation. RDT&E-N funds are legally available for obligation for 2 years - the appropriation and the funds therein are said to have a 2-year life.

13.3.1.1.2 PM Funds (Program/reimbursable funds)

In addition to direct annual operating funds, OPTEVFOR receives and is responsible for the proper execution of funds from various projects and PMs. These funds are not to provide for core OPTEVFOR annual operating requirements, but rather for specific T&E requirements unique to programs, systems, and projects for which the funds are provided. Funding is provided for T&E support to include range support, analytic support, test weapons, targets, program-specific travel, Cyber Security testing, etc. These funds support program-specific T&E requirements for which the command is not supported and/or funded directly. It is inappropriate to use program funds (reimbursable or direct citation) for acquiring goods and/or services that are considered a core part of the command's mission (e.g., general headquarters administration). Use of reimbursable funds for such purposes is considered an illegal augmentation of an appropriation and a violation of 31 USC, Section 1517. (It is sometimes referred to as the "Anti-Deficiency Act," discussed later; basically, it directs activities to not exceed their annual funds operating authority.)

13.3.1.1.3 Uses of Funds and "Color of Money"

The "color of money" is an expression referring to the appropriation from which the money originates. The color is important in that there are laws and regulations that dictate what different appropriations can and cannot be used for. There are a number of appropriations supporting the Navy's various missions and functions, including, but not limited to:

- O&MN (1804)

- Aircraft Procurement, Navy (APN) (1506)

- Ship Construction, Navy (SCN) (1611)

- Weapons Procurement, Navy (WPN) (1507)

- Other Procurement, Navy (OPN) (1810)

- Procurement of Ammunition, Navy and Marine Corps (PANMC) (1508)

- RDT&E-N (1319)

- Military Construction, Navy (MCN, often referred to as MILCON) (1205)

Each appropriation is defined by statute and regulations as for what it may be used. Inappropriate use of an appropriation (even though the actual expenditure may be appropriate or legal) constitutes a violation of Title 31 USC, Section 1301 (sometimes referred to as the "color of money" statute).

13.3.1.1.4 Commonly Used Appropriations

The following descriptions are provided with reference to the appropriations most commonly used by OPTEVFOR in the area of reimbursable program funds:

13.3.1.1.4.1 O&MN-1804

Finances the basic day-to-day operations of the Fleet and most principal shore activities. OM&N supplies funds for annual operating expenses for other activities and Fleet commands, such as supplies, utilities, civilian manpower, travel, administrative support, fuel, repair parts, Operating/Operational Target (OPTAR), transportation leasing arrangements, maintenance of property, etc.

13.3.1.1.4.2 RDT&E-N-1319

Finances the expenses necessary for basic and applied scientific RDT&E, including maintenance, rehabilitation, lease, and operation of facilities as authorized by law. In the case of OPTEVFOR, RDT&E-N funds our annual operating expenses.

13.3.1.1.4.3 APN-1506

Finances the procurement of Navy and Marine Corps aircraft and provides for related supporting programs. Supporting programs include equipment for modification of in-service aircraft, aircraft spare parts, ground support and training equipment, and industrial facilities and tools.

13.3.1.1.4.4 SCN-1611

Primarily funds ship construction, but also the conversion of existing ships (e.g., the SSN to SSGN conversion program), including all hull, mechanical, and electrical equipment; electronics; guns; torpedo and missile launching systems; and communications systems.

13.3.1.1.4.5 WPN-1507

Finances the procurement of missiles, torpedoes, guns, and ancillary weapons-related supporting equipment for Navy forces and Marine air forces. Supporting equipment includes equipment for modification of in-service missiles, torpedoes, guns, and gun mounts; targets used in weapons training exercises and weapons evaluation; hardware for navigation and communications satellite, and other space programs; spare parts; ground support and training equipment; and industrial facilities and tools required for the production and maintenance of missiles.

13.3.1.1.4.6 OPN-1810

Finances the procurement, production, and modernization of equipment not otherwise provided for. Such equipment ranges from the latest electronic sensors required to update the naval forces to trucks, training equipment, and spare parts. This equipment is an integral part of programs to improve the Fleet and shore establishment by expanding or maintaining existing capabilities or replacing ineffective units.

13.3.2 Statutory Implications

There are several fundamental laws that serve as the underpinning for much of the "how and why" funds are administered the way they are. The laws are frequently referred to in the aggregate as the "Anti Deficiency Act."

13.3.2.1 Applicable Statutes

The following statutes apply to financial management matters at OPTEVFOR.

- Title 31 USC, Section 1301. Commonly referred to as the "color of money" or "purpose" statute, it states that funds may only be obligated and expended for the purposes authorized by the Congress in specific appropriations acts or other laws. It is a primary control that the Congress exercises over the executive branch.

- Title 31 USC, Section 1341. States that an officer or employee of the United States may not authorize an obligation exceeding the amount available in an appropriation or make any obligation before the appropriation becomes effective in law.

- Title 31 USC, Section 1517. States that an officer or employee of the United States may not authorize an obligation in excess of an apportionment. An apportionment is a subdivision of a congressional appropriation that carries with it legal responsibilities.

13.3.2.2 Penalties

- Penalties for violation of these statues include suspension from duty without pay and/or removal from office and/or restitution of funds to the treasury by the responsible or accountable individual. If the violation is deemed "knowing and willful," the penalty can include fines of up to $5,000 and/or up to 2 years in jail. Violations are reported up the DoN/DoD/OMB administrative chain to the executive branch. The law mandates that violations be reported to the President, then to Congress.

13.3.2.3 Misappropriation of Funds

Funding received from any source may not be used for a purpose not specifically provided for in the law. Reimbursable funding also requires authorization from the issuing authority as to how the funds are intended to be used. Where doubt exists, a SH/OTC should check with the OPTEVFOR Comptroller for a determination as to whether a planned use of funds is appropriate.

13.4 AMPLIFYING GUIDANCE ON USE OF PROGRAM FUNDS

13.4.1

OPTEVFOR personnel will not rely exclusively on PM approval for use of program funds – once a funding document is accepted by OPTEVFOR, sole fiduciary responsibility for the proper use of the funds resides with COMOPTEVFOR and the Comptroller. This command, not the program office, becomes thereafter solely responsible and accountable for any misdeeds (perceived or real), regardless of whatever authorization or enabling support may have been involved by program offices or other outside activities.

13.4.2 General Financial Guidance

Funding for all CNO project support is the responsibility of the PM (often referred to as the program office). Each OTC/SH responsible for a CNO project requiring the technical expertise of Contracted Service (CS) is responsible for working with the Comptroller staff to coordinate the transfer of funds from the PM to the OPTEVFOR Comptroller. During TEMP revisions or updates, a review of the Part IV Resource Summary is essential for updating funding requirements to support any analytical contracts, range time, or Temporary Additional Duty (TAD) travel needed in the course of the project's active life. The movement of resources by a PM can often

take weeks or months, so early identification of funding issues within a program by the SH/OTC is essential.

13.4.2.1

In interpreting federal appropriations law, the Supreme Court has stated that an established fundamental rule is that "The expenditure of public funds is proper only when specifically authorized not that public funds may be expended unless prohibited" This axiom is important where federal monies are concerned, since it refutes the popular and common misconception that "if the rules don't say I can't, then I can."

13.4.2.2

In addition to various Supreme Court rulings, the United States Comptroller General decisions have repeatedly demonstrated that where taxpayer funds are involved, traditional concepts like "show me where it says I can't" and "it's easier to get forgiveness than permission" are not applicable. Expenditures of federal funds are appropriate only when the laws/regulations/policies are supportive. A corollary to this precept is that where federal law or departmental regulations/policy is silent on an issue, expenditures related to that issue are not authorized.

13.4.2.3

If there is the slightest doubt, consult the OPTEVFOR financial staff for guidance before expending funds or returning funds to the PM.

13.5 SPECIFIC GUIDANCE REGARDING PROGRAM FUNDS

While exceptions may arise that will be adjudicated by the Comptroller's office, the following "rules of the road" apply with respect to use of program funding. In general, the following uses of funding received from PMs are acceptable (assuming the "color of money" stipulations discussed further below are met):

13.5.1 Analytic Support Services

Includes contractor support services unique to the program from which the funds are provided. Such services or support will use program funding when the services or support is not otherwise available from the staff. Contractual support is funded via direct citation funding by the program office. An SH/OTC must exercise care in establishing an appropriate professional and personal relationship with support contractor personnel. The contractual support provided by a contractor must never result in or give the outward appearance of a "personal services" contract. As stated in FAR 37.104 (series), a personal services contract is one that, by its terms or as administered, makes the contractor employees appear to be, in effect, government employees.

13.5.2 Flight Hour Support

Reimbursable funds from the program supported will pay for required flight hours in support of program T&E.

13.5.3 Range Services

Range services in support of T&E will be funded using reimbursable funds from the program being tested.

13.5.4 IOT&E Travel

IOT&E travel for programs of record will be funded using reimbursable program funds.

13.5.5 Program-Unique Equipment, Supplies, or Consumables

Equipment purchases involving program reimbursable funding must involve unique equipment, the focus of which is exclusively in support of the specific program providing the funds. (The same direction applies to program-unique supplies and consumables.) The policy at COMOPTEVFOR will be that procurement of equipment or consumables using reimbursable funds will be the exception to the rule; and such purchases will receive greater scrutiny during the requisition approval process and require Comptroller office approval prior to ordering.

13.6 INAPPROPRIATE USES OF PROGRAM FUNDING

In general, the following are inappropriate uses of reimbursable funds. Appropriate alternative sources of funds are as indicated.

13.6.1 Information Technology Equipment

Unless unique to a specific project, information technology equipment (computers, monitors, laptops, personal digital assistants, etc.) will not be purchased using program reimbursable funds.

13.6.2 Mobile Phones/Other Personal Communications Equipment

Cell/mobile phones, Blackberries, and other PDAs will not be purchased using program reimbursable funds.

13.6.3 Office Supplies

Unless unique to a specific program or project, office supplies will not be procured using program reimbursable funds.

13.6.4 Personal Items

Personal items, other than those addressed herein, normally will not be purchased using reimbursable program funds. In most instances, the general rule is that purchase of personal items using federal funds is forbidden. Disallowed personal items include apparel, uniform items, sunglasses, sunscreen, food items of any description, food preparation items of any description, entertainment items (other than such items received as part of the command awards system), etc.

13.6.5 Full-Time Civilian Hires

COMOPTEVFOR will not hire permanent civilian positions using reimbursable funding. Reimbursable program funds may be used to support manpower requirements using contractor or working capital fund manpower (these personnel may work full time at the headquarters during their term of service; however, they are not permanent OPTEVFOR employees).

13.6.6 "Color of Money" Concerns

COMOPTEVFOR's policy will be to ensure that PM funds in support of T&E efforts are used in a fiscally responsible manner. While there may be exceptions to the rules above relative to use of reimbursable (PM) funds, it is expected that exceptions/waivers to the guidance herein will be rare. In questionable circumstances where disagreement exists regarding interpretation and implementation of this policy regarding appropriate use of reimbursable funds, the OPTEVFOR Comptroller is charged with making a final determination as to the appropriate course of action, guided by the precepts herein if guidance is not otherwise specified in higher-level guidance/documentation. To the extent that a Comptroller decision is questioned, an appeal can be made to the Commander via the Deputy, but the Comptroller decision will stand, pending follow-on arbitration.

13.7 PROGRAM FUNDING DOCUMENTS

All program funding documents are to be forwarded to the OPTEVFOR Comptroller division for processing by the assigned warfare division analyst.

13.8 ADDITIONAL FISCAL GUIDANCE/SUPPORT AVAILABLE

Should questions or issues relative to the use of funds arise for which the SH/OTC is unable to ascertain the correct approach and that are beyond the scope of the OT&E Manual, the SH/OTC should contact the Comptroller and/or Deputy Comptroller directly for specific assistance. The Comptroller/Deputy have access to Fiscal Policy and Fiscal Law offices on the staff of the SECNAV that can be queried to ensure the command safeguards funds, and uses funding in a legal manner, within the bounds of the law/policy. When in doubt, an SH/OTC should contact the Comptroller's office for issue resolution; early notification works best since legal/policy issues may require outside adjudication. See the Financial Handbook for more information.

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APPENDIX A - ACRONYMS AND ABBREVIATIONS

6PP	Six-Part Paragraph
AA	Adversarial Assessment or Accelerated Acquisition
AAP	Abbreviated Acquisition Program
ACAT	Acquisition Category
ACOS	Assistant Chief of Staff
ACOTD	Assistant Chief Operational Test Director
ACTD	Advanced Concept Technology Demonstration
AEC	Army Evaluation Command
AFB	Air Force Base
AFOTEC	Air Force Operational Test and Evaluation Command
AFTTP	Air Force Tactic, Technique, and Procedure
ALSP	Acquisition Logistic Support Plan
AMW	Amphibious Warfare
Ao	Operational Availability
AO	Action Officer or Authorizing Officer
AoA	Analysis of Alternatives
AOC	Assessment of Operational Capability
AOR	Area of Responsibility
AOTD	Assistant Operational Test Director
APB	Acquisition Program Baseline
APN	Aircraft Procurement, Navy
ASD(NII)	Assistant Secretary of Defense for Networks and Information Integration
ASN(RDA)	Assistant Secretary of the Navy (Research, Development, and Acquisition)
ASW	Antisubmarine Warfare
ATO	Authority to Operate
AUTEC	Atlantic Undersea Test and Evaluation Center
AW	Air Warfare
AWG	Analysis Working Group
B&G	Blue and Gold Sheet
BIT	Built-in Test
BMD	Ballistic Missile Defense

C3	Command, Control, and Communications
C&A	Certification and Accreditation
CAAL	COMOPTEVFOR Acronyms and Abbreviations List
CAAS	Contractor Assistance and Advisory Service
CAE	Component Acquisition Executive
CASCOR	Casualty Correction Report
CAP	Cybersecurity Assessment Program
CASREP	Casualty Report
CBTE	Capabilities Based Test and Evaluation
CBR	Chemical, Biological, and Radiological
CD	Capabilities Document
CDD	Capability Development Document
CDR	Critical Design Review
CIO	Chief Information Officer
CEWG	COI Evaluation Working Group
CL	Confidentiality Level
CLIN	Contract Line Item Number
CNO	Chief of Naval Operations
CO	Commanding Officer
COI	Critical Operational Issue
COMOPTEVFOR	Commander, Operational Test and Evaluation Force
COMSUBLANT	Commander, Submarine Force Atlantic
COMSUBFOR	Commander, Submarine Force
COMSUBPAC	Commander, Submarine Force Pacific
CON	Construction
CONEMP	Concept of Employment
CONOPS	Concept of Operations
COR	Contracting Officer Representative
COS	Chief of Staff
COT	Concept of Test
COTD	Chief Operational Test Director
COMOPTEVFOR	Commander, Operational Test and Evaluation Force
CPAR	Contract Performance Assessment Report
CPD	Capabilities Production Document
CRT	COMOPTEVFOR Red Team
CS	Contracted Service / Cybersecurity / Cyber Survivability

CSA	Cyber Survivability Attribute
CT	Contractor Test(ing)
CTE	Cyber Test Engineer
CTEMP	Capstone Test and Evaluation Master Plan
CTF	Core Team Facilitator
CTF	Commander Task Force
CTP	Comparative Test Program/ Critical Technical Parameter
CVPA	Cooperative Vulnerability Penetration Assessment
DA	Developing Agency
DACOS	Deputy Assistant Chief of Staff
DACM	Defense Acquisition Career Manager
DAG	Defense Acquisition Guidebook
DCP	Data Collection Plan
DED	Demonstration Execution Document
DIACAP	DoD Information Assurance Certification and Accreditation Program (Replaced in 2015 by the Risk Management Framework)
DIRLAUTH	Direct Liaison Authorization
DMOT	Detailed Method of Test
DoN	Department of the Navy
DoD	Department of Defense
DOE	Design of Experiment
DOT&E	Director, Operational Test and Evaluation
DOTMLPF-P	Doctrine, Organization, Training, Material, Leadership and Education, Personnel, Facilities, and Policy
DR	Decision Review
	Data Requirement
DRPM	Direct Reporting Program Manager
DRTM	Vignette-to-Data Requirements-to Test Method
DT	Developmental Test(ing)
DT&E	Developmental Test and Evaluation
DTS	Defense Travel System
DWG	Design Working Group
EA	Evolutionary Acquisition
ECP	Engineering Change Proposal
EFSR	Emergent FSR

E-IPR	Executive IPR
eKM	Enterprise Knowledge Management
EMCON	Emission Control
EMD	Engineering and Manufacturing Development
EOA	Early Operational Assessment
E-SERB	Executive System Evaluation Review Board
EU	Extended Use
EW	Electronic Warfare
EXW	Expeditionary Warfare
EXWDC	Expeditionary Warfare Development Center
FAR	Federal Acquisition Regulation
FFP	Firm-Fixed Price
FHN	Family Housing, Navy
FHP	Force Health Protection
FLC	Fleet Logistics Center
FMC	Full Mission Capable
FMR	Financial Management Regulations
FoS	Family of Services
FOT&E	Follow-on Operational Test and Evaluation
FPIN	Financial Policy and Information Notice
FRP	Full Rate Production
FRPDR	Full Rate Production Decision Review
FSA	Field Support Activity
FSO	Fleet Support Operations
FSR	Fleet Service Request
FXP	Fleet Exercise Publication
FWE	Foreign Weapons Evaluation
FY	Fiscal Year
GAO	Government Accounting Office
GPS	Global Positioning System
GSA	Government Services Agency
HITL	Hardware-in-the-Loop
HMX	Marine Helicopter Squadron
HQ	Headquarters

I&I	Integration and Interoperability
IAP	Integrated Assessment Plan
ICD	Initial Capabilities Document
ICTB	Initial Capability Technical Baseline
ID	Identification
IEF	Integrated Evaluation Framework
IGCE	Independent Government Cost Estimate
ILSP	Integrated Logistic Support Plan
INSURV	Board of Inspection and Survey
INT	Intelligence Operations
IO	Information Operations
IOC	Initial Operational Capability
IOT&E	Initial Operational Test and Evaluation
IPT	Integrated Product Team
IPR	In-Process Review
ISIC	Immediate Superior in Command
ISTF	Installed System Test Facility
IT	Integrated Test(ing)
ITT	Integrated Test Team
IW	Irregular Warfare
JCD	Joint Capabilities Document
JCIDS	Joint Capabilities Integrations Development System
JCTD	Joint Capabilities Technology Demonstration
JEON	Joint Emergent Operational Need
JITC	Joint Interoperability Test Command
JT	Joint Test
JT&E	Joint Test and Evaluation
JROC	Joint Required Operating Capability
JUONS	Joint Urgent Operational Need Statement
KMS	Knowledge Management System
KPP	Key Performance Parameter
KSA	Key System Attribute
LAN	Local Area Network

LBTS	Land-Based Test Site
LCSP	Life Cycle Support Plan
LFT	Live-Fire Testing
LFT&E	Live-Fire Test and Evaluation
LMUA	Limited Military Utility Assessment
LOG	Logistics
LOI	Letter of Instruction
LOO	Letter of Observation
LPTA	Lowest Price Technically Available
LRIP	Low Rate Initial Production
LTD	Level of Test Determination
LTE	Lead Test Engineer
MAA	Maritime Accelerated Acquisition
MACO	Maritime Accelerated Capability Office
M&S	Modeling and Simulation
M-DEMO	Maintenance Demonstration
MAC	Mission Assurance Category
MAIS	Major Automated Information System
MBTD	Mission-Based Test Design
MCMA	Mission Capability by Primary Mission Area
MCMTOMF	Mean Corrective Maintenance Time for Operational Mission Failures
MCN	Military Construction, Navy
MCOTEA	Marine Corps Operational Test and Evaluation Activity
MDA	Milestone Decision Authority
MDAP	Major Defense Acquisition Program
MESM	Mission Essential Subsystem Matrix
META	Mission Effect Test and Analysis
METL	Mission Essential Task List
MF	Measurement Facility
MFHBOMF	Mean Flight Hours Between Operational Mission Failures
MIW	Mine Warfare
MNS	Mission Need Statement
MOA	Memorandum of Agreement
MOB	Mobility
MOE	Measure of Effectiveness
MOP	Measure of Performance

MOS	Measure of Suitability
MOS	Missions of State
MOT&E	Multiservice Operational Test and Evaluation
MPN	Military Personnel, Navy
MR	Maintenance Ratio
M&S	Modeling and Simulation
MS	Milestone
MTA	Middle Tier Acquisition
MTB	Mission Technical Baseline
MTBOMF	Mean Time Between Operational Mission Failures
MTP	Management and Transition Plan
MTS	Master Test Strategy
MUA	Military Utility Assessment
NATO	North Atlantic Treaty Organization
NAWDC	Naval Air Warfare Development Center
NCO	Non-Combat Operations
NDA	Nondisclosure Agreement
NIB	Not-to-Interfere Basis
NIPRNET	Non-secure Internet Protocol Router Network
NLT	No Later Than
NMETL	Navy Mission-Essential Task List
NOI	Notice of Intent
NSMWDC	Naval Surface and Mine Warfare Development Center
NSW	Naval Special Warfare
NTP	Navy Training Plan
NTSP	Navy Training Systems Plan
NTTP	Navy Tactics, Techniques, and Procedures
NWCF	Navy Working Capital Funds
NWP	Naval Warfare Publication
NWS	New Weapons System
O&MN	Operations and Maintenance, Navy
O&MNR	Operations and Maintenance, Navy Reserve
OA	Operational Assessment
OAR	Operational Test Agency Assessment Report
OCE	Officer Conducting the Exercise

OE	Operational Effectiveness
OER	Operational Test Agency Evaluation Report
OFER	Operational Test Agency Follow-on Evaluation Report
OIPT	Overarching Integrated Product Team
OM	Operational Manager
OMAR	Operational Test Agency Milestone Assessment Report
OMB	Office of Management and Budget
OMF	Operational Mission Failure
ONI	Office of Naval Intelligence
ONR	Office of Naval Research
OPAREA	Operating Area
OPCON	Operational Consideration
OPCON	Operational Control
OPEVAL	Operational Evaluation
OPN	Other Procurement, Navy
OPNAV	Office of the Chief of Naval Operations
OPORD	Operations Order
OPSEC	Operations Security
OPTEVFOR	Operational Test and Evaluation Force
ORD	Operational Requirements Document
OS	Operational Suitability
OSD	Office of the Secretary of Defense
OT	Operational Test(ing)
OT&E	Operational Test and Evaluation
OTA	Operational Test Agency
OTC	Operational Test Coordinator
OTD	Operational Test Director
OTRR	Operational Test Readiness Review
OUA	Operational Utility Assessment
OTG	OPTEVFOR Tactics Guide
OV	Operational View
PANMC	Procurement of Ammunition, Navy and Marine Corps
PCO	Procurement Contracting Officer
PDF	Portable Document Format
PEO	Program Executive Office/Officer
PIN	Policy and Information Notice

PM	Program Manager
PMR	Prevent, Mitigate, Recover
POA&M	Plan of Action and Milestones
POC	Point of Contact
POE	Projected Operational Environment
PoP	Period of Performance
POR	Program of Record
PRE-Ex	Pre-Exercise
PWS	Performance Work Statement
QASP	Quality Assurance Surveillance Plan
QRA	Quick Reaction Assessment
QRT	Quick Reaction Test
RALOT	Risk Assessment Level of Test (replaced by LTD)
RDT&E	Research Development Test and Evaluation
RDA	Research, Development, and Acquisition
RDD	Rapid Development and Deployment
RFP	Request for Proposal
RFPPR	RFP Program Review
RMF	Risk Management Framework
RML&A	Reliability, Maintainability, Logistic Supportability, and Availability
ROC	Required Operating Capability
RPED	Rapid Prototyping Experimentation and Demonstration
RPN	Reserve Personnel, Navy
RV	Response Variable
S&T	Scientific and Technological
SAT	Satisfactory
SCN	Ship Construction, Navy
SDTS	Self-Defense Test Ship
SECNAV	Secretary of the Navy
SELEX	Selected Exercise
SEP	Systems Engineering Plan
SEPCOR	Separate Correspondence
SERB	System Evaluation Review Board

SES	Senior Executive Service
SH	Section Head
SHIPALT	Ship Alteration
SIL	System Integration Laboratory
SIPRNET	Secret Internet Protocol Router Network
SME	Subject Matter Expert
SOF	Statement of Functionality
SOP	Standard Operating Procedure
SoS	System of Systems
SOW	Statement of Work
SPECWAR	Special Warfare
SRRB	Service Requirements Review Board
SQT	Software Qualification Test(ing)
ST	Synchronized Test for CBTE
STAR	System Threat Assessment Report
STS	Strategic Sealift
STW	Strike Warfare
SUBOPAUTH	Submarine Operating Authority
SUT	System Under Test
SUW	Surface Warfare
SV	System View
SYSCOM	Systems Command
T&E	Test and Evaluation
TA	Threat Assessment / Technical Assistant
TACAIR	Tactical Aircraft
TACMAN	Tactical Manual
TACSIT	Tactical Situation
TAD	Temporary Assigned Duty
TEB	Technical Evaluation Board
TECG	Test and Evaluation Coordinating Group
TECHEVAL	Technical Evaluation
TEIN	Test and Evaluation Identification Number
TEMP	Test and Evaluation Master Plan
TEMPALT	Temporary Alteration
TEPS	Test and Evaluation Program System
TES	Test and Evaluation Strategy

TIEF	Tailored Integrated Evaluation Framework
TPRB	Test Plan Review Board
TO	Task Order
TRR	Test Resource Requirements
TSP	Test Strategy & Policy
TTP	Tactics, Techniques, and Procedures
TTVR	Target Threat Validation Report
TYCOM	Type Commander
UJTL	Universal Joint Task List
UNSAT	Unsatisfactory
UNTL	Universal Navy Task List
UONS	Urgent Operational Need Statement
USAF	United States Air Force
USC	Unites States Code
USCG	United States Coast Guard
USD(A&S)	Under Secretary of Defense (Acquisition and Sustainment)
USMC	United States Marine Corps
USN	United States Navy
USSOCOM	United States Special Operations Command
UTES	Unclassified Test and Evaluation Support
UUNS	Urgent Universal Need Statement
UUV	Unmanned Underwater Vehicle
UWDC	Undersea Warfare Development Center
VCD	Verification of Correction of Deficiencies
VMX-1	Marine Operational Test and Evaluation Squadron ONE
VV&A	Verification, Validation, and Accreditation
VX-1	Air Test and Evaluation Squadron ONE
VX-9	Air Test and Evaluation Squadron NINE
WAWF	Wide Area Work Flow
WCB	Warfare Capability Baseline
WEBSKED	Web-Based Scheduling System
WIPT	Working Integrated Product Team
WPN	Weapons Procurement, Navy
WSERB	Weapon Systems Explosive Review Board

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APPENDIX B - THE CONTINUUM OF TESTING

B-1. INTRODUCTION

Per SECNAVINST 5000.2F, T&E programs will be structured to:

- Provide essential information for assessment of acquisition risk and decision-making.
- Verify attainment of technical performance specifications and objectives.
- Verify that systems are operationally effective and suitable for intended use.

For programs of record, three principal types of T&E are conducted to accomplish these objectives: Developmental Test and Evaluation (DT&E), OT&E, and IT. SECNAVINST 5000.2F and DoDD 5000.01 discuss each of these in detail. This appendix addresses the role of OPTEVFOR in the test continuum. The challenge for the OTD is to understand the entire testing continuum and, with that knowledge, make the best use of available resources to design and execute the minimum, adequate test program.

DoD and DoN directives are currently being updated to address testing for accelerated acquisition programs and those that utilize non-traditional authorities of the adaptive acquisition framework (DoDI 5000.02). The scope of these policy efforts includes Middle Tier Acquisition (MTA) programs. SECNAVINST 5000.2F conveys applicability of Quick Reaction Assessment (QRA) within the test approaches for these programs. For oversight programs, DOT&E Memo dated 24 October 2019, subject "Operational and Live-Fire Test and Evaluation Planning Guidelines Middle Tier of Acquisition Programs" provides relevant amplifying guidance. This memo is available in the Y:\OT&E Reference Library. The OPTEVFOR tailored IEF and LTD processes have been adapted to account for the current guidance regarding MTA programs.

B-2. T&E DEFINITIONS

B.1 DT&E

DT&E is planned and conducted by the DA, usually a SYSCOM or a PEO. In practice, DT is typically managed by the PM through an assistant PM for T&E. In some cases, the principal responsibility for the actual performance of T&E is assigned to a warfare center. SECNAVINST 5000.2F mandates the DA conduct adequate DT&E throughout the development cycle to support risk management, provide data on the progress of system development, and to determine readiness for OT. DT&E is conducted at contractor or government test and engineering activities. OPTEVFOR should participate in DT&E when feasible to evaluate OT-relevant DT results and to provide both an early operational perspective to developers and identification of OT issues to the PM.

B.2 IT

Integrated testing takes a holistic view of both the developmental and operational test objectives and seeks opportunities where test events can be leveraged to serve both. OPTEVFOR uses the IEF to provide a comprehensive view of the information that will ultimately be needed to

determine the effectiveness and suitability of the SUT. By providing the IEF as an input to the Milestone B TEMP, OPTEVFOR ensures that all stakeholders have a clear view of the critical missions, tasks, attributes and measures that will need to be observed. Early and frequent involvement by test agencies is required to ensure successful execution of IT. The DA, test agencies, and user representative (resource sponsor) must share a common interpretation of the system capability needs so that DT and OT are tailored to optimize resources, test scope, and schedule. Test data qualified for OT use (*OT-qualified data*) should have the following distinguishing characteristics:

- Representative forces (friendly and opposing) will be used whenever possible, and employ realistic tactics and targets.

- Typical users (Fleet personnel) are required to operate and maintain the SUT for OT under conditions simulating combat stress and peacetime conditions.

B.3 OT&E

Operational test and evaluation is defined in statute 10 USC. As the Navy's Operational Test Agency, OPTEVFOR is responsible for determining the operational effectiveness and operational suitability of the SUT during realistic testing with actual Fleet operators and maintainers. In addition, the CNO has tasked COMOPTEVFOR to evaluate how the SUT operates within the SoS to deliver the required warfighting effects. To support the Service Acquisition Executive and resource sponsor, OPTEVFOR also conducts a series of operational assessments prior to MS-C. These assessments are focused on identifying the enhancing characteristics of the system under development as well as the risks to the successful completion of IOT&E. For IOT&E, the test article will be representative of the intended production equipment. Also, it will be installed as closely as possible, as is expected in the Fleet.

- Production or production-representative articles will be used for the dedicated phase of IOT&E that supports the post-Milestone (MS)-C FRPDR.
- Sufficient and accurate data must be recorded during the test to document all operationally significant system or equipment characteristics.
- Additionally, OT&E includes the evaluation and analysis of data from an operational viewpoint to assess or determine the operational effectiveness and operational suitability of a system.
- The two products of OT&E are:
  o The Evaluation Report.
  o The OPTEVFOR Tactics Guide (OTG). Most tests do not require an OTG. OTGs are often produced in support of air warfare systems during IOT&E. Submarine and Surface Force tactics are developed by the respective WDC. Generally, OTGs are not produced in support of FOT&E unless a major increase in new capability is introduced.

B-3. A COMPARISON OF DT&E AND OT&E

DT&E and OT&E necessarily examine the same performance features of a system; however, their objectives are different. DT&E and OT&E normally differ in the way tests are conducted, what is being tested, and the evaluation criteria and test measurements. Table C-1 illustrates this comparison.

Table B-1. Comparison of DT&E and OT&E UNCLASSIFIED	
How Tests are Conducted	
DT&E testing is generally conducted: • In a controlled environment that minimizes the chance that unknown or unmeasured variables will affect system performance • By technical personnel skilled at "tweaking" to maximize performance • Against simulated threats tailored to demonstrate various aspects of specified system technical performance.	OT&E testing is generally conducted: • In an operationally realistic environment (e.g., high seas, temperature extremes, high density electromagnetic environments) under conditions simulating combat stress and peacetime conditions • With Fleet operators and maintenance personnel • Against threats which replicate, as closely as possible, the spectrum of operational characters • Using Fleet tactics.
Testing Subject/Topic	
DT&E is focused on evaluating the technical parameters of the weapon or system.	OT&E tests the performance of the SUT in the execution of a set of critical mission tasks. This generally puts the SUT into a larger SoS needed to deliver a required warfighting capability.
Evaluation Criteria	
DT&E – Technical criteria are measured to verify that the SUT performance meets its specification requirements.	OT&E – is focused on validating the contribution of the SUT to the CNO-specified warfighting requirements using a relevant fleet mission context and threat environment.
Measurement and Frequency	
DT&E • The tester generally knows what he/she wants to measure (some particular parameter: launch velocity; the number of *g's* pulled as the missile acquires; time to climb; etc.). • DT&E tests are structured to hold many things constant, isolate others, and allow measurement of one or two parameters of interest. • Special instrumentation is often installed to capture required data.	OT&E • An objective is to create conditions that replicate combat as closely as possible. • Using actual Fleet platforms in complex, time-compressed test events with high costs generally precludes an incremental experiment and test approach. • While every effort is made to identify the root cause of deficiencies, OT&E may not have the time or resources necessary to collect the data needed to isolate the cause of a failure. It is generally more important for OT&E to ensure that as many possible failure modes are identified prior to Fleet release.
General Note: Data collection instrumentation used for DT should be examined to determine applicability and use during OT&E. Additionally, data acquired during DT should be reviewed for use during OT&E.	

B-4. PROGRAM OF RECORD OT&E

B-4. 1 GENERAL

In the Navy, COMOPTEVFOR plans and reports OT&E directly to CNO. All ACAT I, II, III, and IVT programs require OT&E. Table B-2 provides a description of the criteria for ACAT and AAP.

Table B-2. Description and Decision Authority for ACAT I-IV and AAPs UNCLASSIFIED		
ACAT	**Criteria for ACAT or AAP Designation**	**Decision Authority**
ACAT I	Statutory MDAP program which: • will not be carried out using the middle-tier acquisition pathways for Rapid Prototyping or Rapid Fielding; • RDT&E costs exceed $480 million in Fiscal Year (FY) 2014 constant dollars or procurement exceeds $2.79 billion in FY 2014 constant dollars. Or, a DoD acquisition program that the USD (A&S) or the ASN (RD&A) designates a statutory MDAP as a discretionary act.	ACAT ID: USD(A&S) ACAT IC: SECNAV, or if delegated, ASN (RD&A) as the CAE (not further delegable)
ACAT IA	MAIS: An Automated Information System (AIS) that is: -Estimated to exceed: • $40 million in FY 2014 constant dollars for all expenditures in any single fiscal year, for all increments, sprints, etc., regardless of the appropriation or fund source, directly related to the AIS definition, design, development, deployment, operation, and sustainment; or • $165 million in FY 2014 constant dollars for all expenditures, for all increments, sprints, etc., regardless of the appropriation or fund source, directly related to the AIS definition, design, development, and deployment, and incurred from the beginning of the Materiel Solution Analysis Phase through deployment at all sites; or • $520 million in FY 2014 constant dollars for all expenditures, for all increments, sprints, etc., regardless of the appropriation or fund source, directly related to the AIS definition, design, development, deployment, operations and maintenance, and incurred from the beginning of the Materiel Solution Analysis	ACAT IAM: USD (A&S) or as delegated ACAT IAC: ASN (RD&A) or as delegated

Table B-2. Description and Decision Authority for ACAT I-IV and AAPs UNCLASSIFIED		
ACAT	**Criteria for ACAT or AAP Designation**	**Decision Authority**
	Phase through sustainment for the estimated useful life of the system. -Or designated as a MAIS by the USD (A&S) or the ASN (RD&A)	
ACAT II	Does not meet criteria for ACAT I **Meets the definition of Major System:** • Dollar value for all increments of the program estimated to require: -RDT&E total expenditures > $185 Million in FY 2014 constant dollars; or -Procurement total expenditures > $835 Million in FY 2014 constant dollars • Or, ASN (RD&A) designation as a Major System • Does not apply to AIS programs. AIS programs that do not meet the criteria for ACAT IA shall be designated ACAT III or lower, as	Designated by ASN (RD&A)
ACAT III	Does not meet criteria for ACAT I or II. The program will acquire new or improved capability in response to a validated capabilities document. • Dollar value for all increments of the program estimated to require: RDT&E total expenditures > $26 Million but < $185 Million in FY 2014 constant dollars; or -Procurement total expenditures > $64 Million but < $835 Million	Individual designated by the cognizant PEO, DRPM, or SYSCOM Commander.

Table B-2. Description and Decision Authority for ACAT I-IV and AAPs UNCLASSIFIED		
ACAT	**Criteria for ACAT or AAP Designation**	**Decision Authority**
ACAT IVT	Does not meet criteria for ACAT I, II, or III. The program will acquire continuing capability for a deployed system in response to a validated capabilities document. Does require operational test and evaluation. Dollar value for all increments of the program estimated to require: RDT&E total expenditures > $26 Million but < $185 Million in FY 2014 constant dollars; or -Procurement total expenditures > $64 Million but < $835 Million in FY 2014 constant dollars	Individual designated by the cognizant PEO, DRPM, or SYSCOM Commander.
ACAT IVM	Does not meet criteria for ACAT I, II, or III. The program will acquire continuing capability for a deployed system in response to a validated capabilities document. **Does not require operational test and evaluation.6** Dollar value for all increments of the program estimated to require: RDT&E total expenditures > $26 Million but < $185 Million in FY 2014 constant dollars; or -Procurement total expenditures > $64 Million but < $835 Million in FY 2014 constant dollars	Individual designated by the cognizant PEO, DRPM, or SYSCOM
AAP	Does not breach ACAT IV dollar thresholds **Does not require operational test and evaluation.** 6 • Dollar value for all increments of the program estimated to require: RDT&E total expenditures < $26 Million in FY 2014 constant dollars; and -Procurement total expenditures < $64 Million in FY 2014 constant dollars	Individual designated by the cognizant PEO, DRPM, or SYSCOM Commander. (This designation authority may be delegated)
ASN (RD&A)	Assistant Secretary of the Navy (Research, Development, and Acquisition)	
CAE	Component Acquisition Executive	
DoD CIO	Department of Defense Chief Information Officer	
DRPM	Direct Reporting Program Manager	
FY	Fiscal Year	
MDA	Milestone Decision Authority	
RDT&E	Research, Development, Test, and Evaluation	
SECNAV	Secretary of the Navy	
SES	Senior Executive Service	
USC	United States Code	
USD(A&S)	Under Secretary of Defense (Acquisition and Sustainment)	

NOTE

OT&E is not required for ACAT IVM or AAPs per SECNAVINST 5000.2F. Written concurrence from COMOPTEVFOR is required for designation of a program as an ACAT IVM. For an AAP, written concurrence from COMOPTEVFOR must be obtained stating that OT&E is not required.

B-5. TYPES OF OT

B-5.1 OA

An OA is a test event conducted before initial production units are available and which incorporates substantial operational realism. An OA is conducted per a test plan and must be approved by DOT&E for programs on OSD OT&E oversight. The focus of an OA is to assess overall risk to a system successfully completing IOT&E and will usually address the following:

- Significant trends noted in development efforts.

- Limitations to test.

- Areas of risk.

- Capability of the SUT to meet performance goals in operational effectiveness and suitability at IOT&E.

- Capability of the SUT to deliver required warfighting effects in a SoS context.

OAs should be conducted when there is enough system maturity to conduct an operational test incorporating substantial operational realism and may use technology demonstrators, prototypes, mockups, or simulations if those articles can be placed in an operational context and risk to IOT&E can be adequately assessed. An OA does not have to use production-representative articles and does not substitute for the IOT&E necessary to support FRP decisions. As a general criterion for proceeding through Milestone C, at least one OA will be conducted and the results documented in a formal report. An OA may also be used to support other program reviews. OAs are not intended to support FRPDRs, Fleet release, or introduction recommendations. All OAs are included in the TEMP. There are two types of OAs:

B-5.1.1

OT-A (Early Operational Assessment (EOA)) is conducted during the Material Solution Analysis and Technology Development phase. Results support decision makers at MS-B in determining whether to continue development and approve entry into the Engineering and Manufacturing Development phase of the acquisition process. EOAs may also focus on testability issues (e.g., M&S, ranges, environments).

B-5.1.2

OT-B (OA) is OT&E conducted during the Engineering and Manufacturing Development phase. OT-B may be subdivided into discrete phases (e.g., OT-B1, OT-B2). OAs are conducted per a test plan employing significant operational realism to identify enhancing characteristics of the system as well as to discover and categorize risks to a successful IOT&E. Results of OT-B assessments identify program enhancements and risks, and the final OT-B phase will support the MS-C LRIP decision by the MDA.

B-5.2 IOT&E

OT-C is OT&E conducted on a production-representative test article(s) during the Production and Deployment phase of the acquisition cycle, and is a prerequisite for the FRPDR. COMOPTEVFOR makes a determination on operational effectiveness and operational suitability, and a recommendation regarding Fleet introduction.

B-5.3 VCD

VCD is not a major phase, but is included as a phase of OT when necessary. A VCD is generally not a preplanned phase in the TEMP, but can be incorporated into the test program after a formal phase of OT to verify that certain deficiencies have been corrected. No TEMP update is required, but a test plan is required. While VCDs normally do not resolve COIs, with proper pre-test coordination and test planning, COIs may be evaluated during a VCD. For reporting purposes, a VCD is tied to the previous phase of testing to which it applies (i.e., a VCD for OT-B1 would be "OT-B1 VCD"). VCDs are done to assist the MDA in ensuring the deficiencies cited as corrected by the DA from a previous phase of OT have actually been corrected. This type of test will examine only those deficiencies (and associated COIs) the DA states have been corrected (or substantially mitigated). The purpose is to show the deficiencies as demonstrated corrected; demonstrated to be substantially mitigated, i.e., to a degree that recategorization is warranted; demonstrated not corrected; or as not demonstrated. For non-DOT&E oversight programs, when COI resolution is discussed in the test plan and if the VCD results enable a change to the resolution of COIs (beyond IOT&E), then the new resolution is reported. For programs on DOT&E oversight, the only permitted change in COI resolution during a VCD phase of test is from SAT to UNSAT. See chapter 8, Evaluation Reports, for report requirements.

B-5.4 FOT&E

FOT&E is all OT&E conducted after the IOT&E. FOT&E is divided into two major phases:

B-5.4.1

OT-D is FOT&E conducted after IOT&E (post-MS-C/FRPDR), using equipment of the same design as in IOT&E or preferably production systems. It includes completion of any deferred or incomplete OT&E. OT-D is described in detail in chapter 5, TEMP.

B-5.4.2

OT-E is FOT&E conducted on production systems, unless previously accomplished in OT-D. The major objective of OT-E is the validation of the operational effectiveness and operational suitability of production systems. OT-E should be scheduled and conducted whenever production articles are not available for testing in prior OT&E.

B-5.5 Software Testing

Software will be operationally tested in the system in which the application is installed or implemented when fielded. The software used for IOT&E of the core block will provide a performance baseline for testing subsequent increments. For each increment of software for a software-intensive system, the OTD shall use the DoD guidelines for conducting OT&E for software-intensive system increments and the ASN (RD&A) Guidebook for Acquisition of Naval Software Intensive Systems, Version 1. 0 for determining elements of risk and the appropriate level of OT.

B-5.5.1 SQT

When a software revision or increment is to be released as part of an acquisition MS decision, the OT is considered an IOT&E. When a software revision or increment is to be released not in conjunction with an MS decision, the decision may be made to use the SQT process. SQT applies to software modifications of limited scope, as determined by CNO (N94), such as aircraft and

weapon systems' operational flight programs and other systems in which software provides a similar function. When a program is approved for SQT, CNO (N94) will assign a Test and Evaluation Identification Number (TEIN); and an SQT TEMP will be written using the format from SECNAVINST 5000.2F. For SQT, a Statement of Functionality (SOF) prepared by the PM and approved by the program sponsor will be used in lieu of a CDD/CPD to develop the SQT TEMP. SQT reports use the standard OPTEVFOR evaluation report format template. (see chapter 8)

B-5.5.1.1 SOF

The PM will forward a SOF to COMOPTEVFOR, via the program sponsor, copy to CNO (N942). The program sponsor's endorsement will serve as validation of software requirements for that intended release. The SOF will:

- Define new capabilities of the improved software.

- Address software corrections to previous deficiencies.

- Address any capabilities that were deleted or modified.

- Describe the breadth and depth of regression testing conducted.

- Address specific operational requirement(s) of the new software.

- Describe safety and/or security issues or functions added, modified, or deleted.

B-5.6 Significant Alterations

It is not possible to provide an explicit definition of a significant alteration, which is handled much like a new system for system acquisition purposes. The decision to classify a modification, ECP, ordnance alteration, block upgrade, product improvement, etc., as a significant alteration is based on the scope of the change, the funding level, the importance of the system, the numbers to be produced, etc. CNO (N94) will consider factors such as these in making the decision. In general, where an alteration is intended to improve a warfighting capability vice suitability, the alteration would require some measure of OT&E prior to Fleet introduction. The judgment of COMOPTEVFOR, the DA, the CNO Resource and Program Sponsor, and (where applicable) the Naval Board of Inspection and Survey (INSURV) will be major factors considered by N94 in determining the applicability and scope of testing significant alterations.

B-5.7 QRA

Emerging operational requirements and accelerated acquisition programs necessitates modifying the established OT process to achieve a rapid capability in the Fleet. In these cases, the program sponsor may require a risk assessment by COMOPTEVFOR to better understand the capabilities of the proposed system as well as the risks associated with its fielding. If the sponsor decides a QRA is needed, the sponsor sends a request to CNO (N94), with a copy to COMOPTEVFOR. If tasked by CNO (N94), OPTEVFOR will conduct the QRA as rapidly as is feasible. A QRA will not take the place of a formal OA or IOT&E as described in the TEMP, nor will it be used to resolve COIs, make effective, suitable, or cyber survivable determinations, or provide fully developed Fleet introduction/Fleet release recommendations typically produced via an IOT&E test. (If critical deficiencies are uncovered that clearly outweigh any potential operational benefit, the Commander reserves the right to make a recommendation against Fleet release.) A QRA is an

operational risk assessment to address the purpose and answer the questions as outlined in the QRA tasking letter. QRAs require a test plan, normally signed by the Division Director. All QRA reports are signed by COMOPTEVFOR. See chapter 6 for QRA test planning and chapter 8 for QRA report format. The following information must be included in the QRA request:

- Purpose of the assessment and, specifically, what system attributes the program sponsor wants assessed,
- Length of time available for the assessment,
- Funding available for the assessment.

B-6. TYPES OF IT

SECNAVINST 5000.2F requires that planning for DT and OT (IT) be coordinated at the test design stages so that each test phase uses resources efficiently to yield the data necessary to satisfy common needs of the PM and the OT&E agency. Where full IT is not possible or feasible, there are two legacy methods for integrating T&E that should also be considered, to include combined DT/OT and DT assist. The goal should be to maximize IT and use the OT-qualified data to support the required independent OT period. The following paragraphs describe IT and the two legacy methods.

B-6.1 IT

IT is the collaborative planning and collaborative execution of test phases and events to provide data in support of independent analysis, evaluation, and reporting by all stakeholders, particularly the DT (contractor and government) and OT communities. IT blends or combines CT, DT, and OT to form a cohesive testing continuum. This integration cannot occur, unless the participants (CT director, DT director, and OTD) have determined their entering requirements for adequate testing of the SUT. IT does not remove or combine any of COMOPTEVFOR's current or future requirements for reporting based on a separate (OPTEVFOR) analysis of the shared test information produced by the IT effort. IT does not eliminate the requirement for an independent IOT&E phase of OT&E. However, the expectation is that the IOT&E period may be reduced in scope and time due to the early, integrated involvement of operational testers throughout the entire continuum of system development. Any reduction in the scope of IOT&E is highly contingent on the stability of the configuration of the SUT and the amount of qualified data that can be brought forward. Regardless of any reductions in scope, IT should substantially increase the probability of successful completion of IOT&E, by bringing OT concerns earlier in development. IT includes several key planning paradigms, including:

B-6.1.1

A requirement for the OT team to provide detailed OT input (IEF) to the IT planning process and provide it early in the program schedule. To this end, OPTEVFOR will develop a Tailored IEF to support the MS-A TEMP and a complete IEF to support the development of the MS-B TEMP.

B-6.1.2

The sharing of data throughout development and the associated IT periods. This sharing will support the monitoring of the progress of system capabilities, attributes, KPP, MOEs, and MOSs towards the successful resolution of COIs.

B-6.1.3

Blue and Gold sheets may be created, modified, and closed based on results obtained during IT.

Robust testing minimizes surprises when the warfighter receives the product and ensures the specified capabilities are evaluated in the operational environment. Risk is reduced by bringing all testing agents together early in the process to ensure capabilities are tied to missions and tasks, mission-based testing is conducted, system anomalies/deficiencies are identified early in the process, and all data are shared. Cost is reduced by the sharing of resources, elimination of duplicative testing, and the early identification and correction of deficiencies. Schedule compression is achieved by combined versus sequential testing and the sharing of high demand testing assets. None of these objectives can be achieved without the cooperation of all parties and a commitment to a team approach between program office, OT, DT, and contractor personnel.

B-6.2 Combined DT/OT

Combined DT/OT, in its strictest sense, is a test phase in which DT and OT testers share test assets and data, and in which the events meet DT and OT requirements. An example of this would be a test in which DT and OT testers collect data from the same event or flight. Combined DT/OT is frequently employed for live fire events that tend to be constrained due to safety considerations (e.g., air-to-air missile firings and torpedo set-to-hit firings). The following comments apply to combined DT/OT in a broad sense:

B-6.2.1

While combined testing may be possible in some cases, the differing objectives of DT&E and OT&E may make it more difficult to combine the two than it may first appear. The explanation is as follows:

- DT&E is properly conducted to test some individual specification or parameter (e.g., the number of $g's$ pulled by a projectile) with other parameters held constant. The test is designed to measure *technical performance* of a system.

- The mission of OPTEVFOR is to assess whether, given the achieved technical performance, the weapon system can be operationally effective and operationally suitable (for both the SUT and in the SoS) when employed under typical combat and environmental conditions by Fleet personnel against an enemy who fights back. Thus, OT&E is conducted on a mission-by-mission basis, varying such factors as sea state; visibility; own-ship speed and maneuvers; and the method of illumination, range, firing doctrine, target maneuvers, enemy countermeasures, etc.

B-6.2.1.1

Early planning for combined DT and OT *is essential* to ensure efficient use of resources. Participation by OPTEVFOR in the planning and execution of combined tests must ensure that the tests conducted and data collected are sufficient and credible to meet OT&E requirements. A separate, independent OT plan will be provided, and separate and independent evaluation of OT results will be conducted and reported. Depending on the phase of testing, OPTEVFOR will identify new and changed risks or deficiencies in standard Blue and Gold sheet format. Prior to combined DT/OT, the OTD should review the DT&E test plan for the technical characteristics,

test objectives, and to understand how the PM intends to test the system. The OT team needs to understand what will be tested and how it may impact OT. Combined DT/OT typically requires an MOA between the PM and COMOPTEVFOR that outlines the DT and OT objectives, capabilities/functions to be demonstrated, test conditions, test operations, etc. The MOA format is available in the OT&E Reference Library.

B-6.3 DT Assist

B-6.3.1

DT assist is simply DT with active involvement of OT personnel. As DT assists are not a formal phase of OT, they will not be assigned an OT number, *but will be assigned a DT assist number in TEPS* for test and/or document tracking purposes. OT testers help execute the DT plan. There is no OT plan, and no OT report is required. A DT assist may be conducted for several different reasons. It may be done to allow OTDs to become more familiar with a system, to supplement DT personnel, or to allow the performance of non-hazardous developmental testing on aircraft assigned to OT squadrons. In all cases, a DT assist provides the system's developers with an early operational perspective. Though OPTEVFOR does not provide a formal report, Pending Risks will be captured in Blue and Gold sheets. If the program manager requests, the results will be compiled in a LOO with the Blue and Gold sheets appended. Conducting a Divisional SERB is at the discretion of the A-Code, but Blue and Gold sheets will be reviewed by 01C prior to LOO signature. If provided, the LOO will only be addressed to the PM or PEO as requested.

B-6.3.2

Table B-3 is provided to highlight the differences between DT assist and formal combined DT/OT phases of testing.

B-6.3.2.1

In DT assists, we generally do not identify minor, major, or severe limitations, since the recipient is generally completely familiar with the limited scope of the observations.

B-6.3.2.2

DT assist is more than passive observation of DT. OTDs have routinely monitored DT, and that should continue. A DT assist signifies that the OT test team is actively engaged in the data collection and is performing its own independent analysis.   Ideally, a DT assist should be characterized on the program-integrated schedule just as combined DT/OT is shown, with simultaneous DT and OT activity. However, if it is not included on the schedule, a DT assist may still be pursued and accomplished.

B-6.3.2.3

As is the case for all DT data, if the data meet OT requirements they can be used to supplement OT data and help resolve COIs in future phases.

B-6.3.2.4

For DT assists, use of an MOA is recommended. This ensures all parties have like expectations about the scope of the test, when testing commences and ends etc. This is also a good place to

specify that OPTEVFOR needs access to DT data and reports. The DT assist MOA template can be tailored for the specific case.

B-6.3.2.5 DT Assist after MS-C

A DT assist can be employed during any phase of the acquisition process, including post-MS-C. However, it is most appropriate for "fly and fix" applications where COI resolution and conclusions regarding effectiveness and suitability are neither needed nor desired. Because most programs are seeking "effective and suitable" conclusions after MS-C, the DT assist approach is often not the vehicle of choice. It can be used effectively, though, as a lead-in to formal IOT&E, FOT&E, or prior to a request for a VCD. If a DT assist, with a LOO, is being used to support a fielding decision, as in the case of a software intensive system, any Pending Risks identified during the DT assist should be written based on the risk to deployment or fielding.

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Table B-3. DT Assist-Combined DT/OT-IT Comparison UNCLASSIFIED		
DT Assist	**Combined DT/OT**	**IT**
No OT number assigned. It is not a formal phase of OT.	This is a formal phase of OT, complete with OT number, such as OT-A.	Formal phase of OT and assigned an IT number, such as IT-A1.
MOA signed by OPTEVFOR division director or VX CO is recommended.	MOA required with PM.	Integrated Test Team (ITT) Charter required. An MOA may be required for documenting mission analysis prior to a TEMP or TEMP update.
No OT test plan, OTA IEF required.	OTA IEF and OT test plan required.	OTA IEF required. Data Collection Plan is required.
No formal OT report; a DT assist LOO signed by OPTEVFOR division director may be provided to PM.	LOO or OTA Assessment Report (OAR)/MS Assessment Report (OMAR) required.	LOO or OAR/OMAR required.
COIs not specifically addressed, and not resolved.	COIs addressed commensurate with type of report. Color-codes for EOAs and OAs.	COIs addressed commensurate with type of report.
No conclusions reached.	Conclusions: COI risk assessments and recommendation for continued program development.	Conclusions: Commensurate with type of report. No effectiveness or suitability determinations and Fleet introduction recommendations may be made.
Certification message not required from DA.	Certification message required from DA.	Certification message is not required from DA.
May be discussed in TEMP - optional.	Must be discussed in TEMP.	Must be discussed in the TEMP.
Data may be used to support COI resolutions in later stages of OT&E.	Data may be used to support COI resolutions - now or later.	Data may be used to support COI resolutions - now or later.
Not appropriate for VCDs. VCD requires a brief report and OT number.	Appropriate for VCD.	May be appropriate for VCD.
Recommended for inclusion in TEMP Part II Integrated Schedule - optional Example: DT XXXXXXX DT-B OT XXXXXXX DT ASSIST	Required for inclusion in TEMP Part II Integrated Schedule. Example: DT XXXXXXX DT-B OT XXXXXXX OT-A	Required for inclusion in TEMP Part II Integrated Schedule. Independent OT periods must be designated as OT-X. Example: IT XXXXXXX IT-B

Table B-3. DT Assist-Combined DT/OT-IT Comparison UNCLASSIFIED		
DT Assist	**Combined DT/OT**	**IT**
General Note: Documentation signatory authority is per table 3-2.		

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B-7. MOT&E

B-7.1 MOT&E
MOT&E is OT conducted jointly by two or more Services for formal DoD acquisition programs. A lead organization will be designated to coordinate all testing involving more than one military department or defense agency. This lead organization will prepare a single TEMP, test plan, and a single T&E report on the operational effectiveness and suitability of the system for each participating organization. The basic framework for the conduct of MOT&E for the four Services is contained in the MOT&E MOA.

B-7.2 Navy Lead Service
When the Navy is lead Service, OT&E will be conducted per the provisions of SECNAVINST 5000.2F, the MOT&E MOA, and this guide. OPTEVFOR performs essentially the same functions as in normal OT&E, with the following modifications:

- All planning including the MBTD process will be coordinated with other Service OT&E agencies.
- OPTEVFOR will begin the planning process (MBTD) by issuing a call to other Service OT&E agencies for COIs and their test objectives. These issues and objectives will then be consolidated into the IEF and coordinated with other Service OT&E agencies.
- Formal coordination action on the TEMP will accommodate other Service OT&E requirements and inputs.
- Participating OT&E agency test directors and/or project officers will meet to assign responsibilities for accomplishment of the critical issues/test objectives (from the IEF).
- Each participating agency will then prepare the portion of the overall test plan for their assigned critical issues/objectives, in OPTEVFOR test plan format, and will identify its data needs. OPTEVFOR will then prepare the MOT&E test plan.
- The appropriate ONI Capstone TA will be the TA used for overall program and Navy-unique threat issues. Other Services may supplement the threat requirements of the ONI Capstone TA through use of their Service-unique TAs.

B-7.3 Other Lead Service
When another Service has the lead, either a fully integrated TEMP or a Navy appendix to the lead Service TEMP, will be prepared that clearly reflects the unique Navy testing aspects of the program, in addition to addressing multiservice testing. The threat for overall program issues, based on the ONI Capstone TA, will also be addressed in the integrated TEMP or Navy appendix. This integrated TEMP or Navy appendix will provide the basis for planning and executing Navy-unique testing. Navy input to test documentation generated by other OTAs should be based on a tailored IEF, as discussed in paragraph 4-1.10.

B-7.4 Discrepancy Reporting
The lead OT&E agency is responsible for ensuring a system is established to track discrepancies and to provide periodic status reports to participating OT&E agencies. Control of promulgation of such reports should be included in an MOA between the participating OT&E agencies.

B-7.5 Deviations from Lead Service OT&E Procedures

Deviations from lead Service OT&E procedures may be authorized by written agreement between participating OT&E agencies. Close coordination will be required to ensure the requirements of Navy OT&E are met.

B-7.6 Test Reporting

For major programs, the lead Service will prepare and coordinate the single (interim or final) report, reflecting the system's operational effectiveness and operational suitability for each Service. If a participating Service deems it necessary to produce an independent evaluation report, it will be appended to the single MOT&E final report.

B-7.7 MOT&E Funding

Each Service OTA is funded differently for the execution of OT. The USAF and USA are directly funded via Program Objective Memorandum (POM) for OT while the Navy and Marine Corps rely on the PM/Joint Program Office (JPO) to fund testing resources. Consequently, the lead OTA will ensure that the TEMP Part IV clearly identifies each Service's specific test resources (assets and funding) and where that funding is coming from (specific PM/JPO, POM, etc.).

B-8. JOINT TEST PROGRAMS

B-8.1 Discussion

COMOPTEVFOR's mandate is to test and evaluate new and improved warfighting capability in as near a realistic operational environment as possible, which should include some testing in a joint environment for most programs. However, simply conducting OT of a Navy-only acquisition program in a joint environment does not make it a joint test program. For the purposes of this document, joint OT is defined as any test of a system, subsystem, component, or technology program that involves funding or formal management (including test management) by more than one DoD component, with the goal of providing a new or improved capability for a validated joint need. This includes programs where one DoD component may be acting as acquisition agent for another DoD component.

B-8.2 Types of Joint Testing

There are three basic types of tests for joint programs: MOT&E (described above), Joint Test and Evaluation (JT&E), and JCTDs. MOT&E is OT&E conducted jointly by two or more Services. The MOT&E MOA governs the conduct of MOT&E among the four Service OTAs. Some Services delegate authority to conduct OT&E to supporting agencies or commands. For these cases, an MOA may be required to codify test activities (e.g., resources, test execution, reporting, etc.). JT&E and JCTD are joint test concepts that are outside the DoD Directive 5000.01 and are funded outside the normal service budget process. While JT&Es and JCTDs attempt to address shortfalls in joint warfighting, JT&E has a TTP focus, and JCTD has a technology/hardware focus. (See paragraph C-8.2.11 for JT&E overview.) To support input to other OTA-led joint testing, or JCTD test planning, a tailored IEF documenting OPTEVFOR's mission and requirements analysis is required (see paragraph 4-7).

B-8.2.1 JT&E

B-8.2.1.1 Overview

JT&E evaluates concepts, TTPs, architectures, processes, and addresses specific warfighter needs and issues that occur in joint environments. The JT&E program is funded and directed by DOT&E per DoD Instruction 5010.41. There are two types of JT&E:

- Quick Reaction Test (QRT), normally lasting less than 1 year

- Joint Test (JT), up to 3 years in duration.

B-8.2.1.2 Documentation and Test Reporting

Detailed guidance is available in the JT&E Program Handbook. QRT and JTs may use the MOT&E MOA to guide the relationship among participating OTAs. Where Navy expertise and liaison is required, CNO (N94) will task COMOPTEVFOR to provide an OTD to act in a Navy operational oversight function. When tasked, QRTs and JTs will be assigned a 5000-series local TEIN for tracking and administration within the TEPS.

B-8.2.2 JCTDs

B-8.2.2.1 Background

B-8.2.2.1.1

A JCTD is an integrating effort to assemble and demonstrate a desired capability based on mature advanced technologies in a realistic environment to clearly establish military and/or operational utility. In response to a combatant commander's request, the USD (A&S) approves all new-start JCTDs by issuing an approval memorandum. Each JCTD is assigned a sponsor, typically a combatant command who represents the end user of the system or capability. Once the JCTD makes it through the approval process, a Working Integrated Product Team (WIPT) is developed to plan, coordinate, and execute the assessments of the JCTD. The WIPT is comprised of members who fall under three distinct managers of the program. See http://acqnotes.com/acqnote/acquisitions/joint-capability-technology-demonstration for the JCTD guidance and process.

B-8.2.2.1.1.1 Operational Manager (OM)

The OM plans, schedules, and executes the OUA or Limited OUA (LOUA). The OM starts the process with the assistance of an OTA to develop COIs, which make up the foundation of the IAP. The IAP is similar to a TEMP and is the overarching test schedule for the program. The OM is also responsible for drafting the DED for each OUA or LOUA. The DED is similar to a test plan.

B-8.2.2.1.1.2 Technical Manager (TM)

The TM is responsible for all contracts and acquisition instruments for the program, and manages the budget for the JCTD. The TM is also responsible for delivering the Joint Capability Solution to the OM for the assessments. The TM is responsible for ensuring that any technologies are adequately mature and have met all technical and safety certifications before they are used in any operational demonstrations.

B-8.2.2.1.1.3 Transition Manager (XM)

The XM is responsible for planning and supporting any Extended Use (EU) of the interim capability. The XM identifies and facilitates funding for the transition of the capabilities and for any EU period that has been planned. The XM is responsible for all transition documentation for the capability to enter the JCIDS. All three managers are co-developers of the implementation directive, management plan, and the transition plan. Through the WIPT, they all work closely together in each phase of the program to ensure that the program is properly planned, executed, and remains on schedule.

B-8.2.2.2 COMOPTEVFOR Participation

B-8.2.2.2.1

Many JCTDs will have little or no Navy interest, while a few may be developing an important new capability for the Fleet. COMOPTEVFOR (based on input from the requesting sponsor combatant commander) will determine which JCTDs merit our participation. Since JCTDs are not formal acquisition, COMOPTEVFOR has no official mandate for participation in the process. Nonetheless, given JCTDs may eventually transition to formal acquisition and the rigors of OT, early involvement in selected JCTDs can be critical to rapid development and deployment to the Fleet. With COMOPTEVFOR approval, a JCTD will be assigned an OTD and receive an appropriate level of attention, which could well exceed that normally expended on a formal acquisition program.

B-2.2.2.2

An OUA (replacing the MUA or LMUA) must be conducted by an independent activity (like OPTEVFOR). Following the demonstration(s) and depending on the success, a JCTD may transition to a formal acquisition program at the appropriate MS, may be produced in small quantities and introduced to the Fleet; or may be shelved. JCTDs are not acquisition programs; they transition solutions to the combatant commander.

B-8.2.2.3 Documentation

Because a JCTD is not a formal acquisition program, it will not have the traditional DoD and SECNAV documentation. The following are the JCTD documents:

B-8.2.2.3.1 Implementation Directive

An implementation directive provides guidance and direction for implementing a JCTD. The primary goal of an implementation directive is to define the JCTD program, its objectives, and key participating agencies with their associated areas of responsibility and resources.

B-8.2.2.3.2 Management and Transition Plan (MTP)

Each JCTD is required to have an MTP, which is, basically, an agreement between the developer and sponsor. Included should be an overview of the JCTD, a schedule of planned events and demonstrations, programmatic and organizational details, funding information, COIs, and a description of the residual operational capability expected on completion of the demonstration(s). Requirements may be incorporated in the MTP or may not be documented at all. JCTD sponsors may include a CONOPS, which addresses theater-level interoperability, compatibility, and integration issues.

B-8.2.2.3.3 IAP

A TEMP-like document, the IAP, includes an OUA approach and an OUA framework. The OUA approach section includes the schedule, demonstration venues and participants, data requirements, resources, and constraints. The OUA framework includes COIs, objectives, top-level capabilities and metrics, MOPs, and MOEs.

B-8.2.2.3.4 CONOPS and TTP Outline

The CONOPS and TTP outline should include required capabilities with metrics, CONOPS, COIs, the expected threat and operational environments, operational scenarios, and tactical vignettes.

B-8.2.2.3.5 Tailored IEF

The Tailored IEF is an OPTEVFOR document that captures the mission and requirements analysis performed by an OTD (as described in the Implementation Directive or other requirement documents) for those JCTDs that are of particular interest to the Navy.

B-8.2.2.3.6 DED

The DED is akin to a standard test plan for a non-oversight program.

B-8.2.2.3.7 Final Reports

Final reports for JCTDs are similar to the EOA/OA formats and are described in chapter 8, Evaluation Reports.

B-8.2.2.4 Requirements

Since JCTDs are technology demonstrations by nature, most will not have a formal set of performance requirements. Often, the demonstration is used to quantify system capabilities and define requirements. If there are no thresholds or objectives, the test team should ascertain what the JCTD is meant to do, and determine COIs and MOEs/MOPs needed to reflect those capabilities. Also, ask how the JCTD *could* be used. Bring ideas before the WIPT and get agreement, then do the test planning. OPTEVFOR participation in JCTDs should focus on:

- Providing a sound OT methodology, complete with COIs, MOEs, and MOPs.

- Developing COIs and MOEs/MOPs, including suitability issues.

- Assessing and documenting the demonstration results so that transition to formal acquisition will be as easy as possible.

- Making recommendations for system improvement.

- Identifying strengths and weaknesses observed.

B-8.2.2.5 TEPS

When tasked, JCTDs will be assigned a 5000-series local TEIN for tracking and administration within TEPS.

B-9. U. S. SPECIAL OPERATIONS COMMAND (USSOCOM) NAVAL SPECIAL WARFARE (SPECWAR) RESEARCH, DEVELOPMENT, AND ACQUISITION (RDA) POLICY

Procedures for USSOCOM (and its component SPECWAR) systems and equipment must be streamlined to ensure the most rapid possible progress from the concept stage through final development. In many instances, USSOCOM/SPECWAR systems are needed to meet preparedness requirements for contingency operations around the world. See the SOCOM Acquisition website for more information at (https://www.socom.mil/acquisition-authority).

B-10. FOREIGN COMPARATIVE TESTING (FCT) AND DEFENSE ACQUISITION CHALLENGE (DAC) PROGRAMS

Title 10, U.S. Code Section 2350a(g) and 2359b establish two programs: the FCT Program and the DAC Program, respectively. The FCT Program tests allied or friendly nations' defense equipment and technologies to see if they can satisfy DoD needs. DAC allows non-DoD entities to propose technologies, products, or processes to existing DoD acquisition programs. At the OSD level, FCT and DAC Programs are managed by the Comparative Testing Office (CTO).

B-10.1

The purpose of the FCT Program is to establish the ability of North Atlantic Treaty Organization (NATO) and friendly foreign countries to satisfy U.S. requirements or operational deficiencies.

- Authorizes side-by-side testing of foreign non-developmental or Commercial Off-the-Shelf (COTS) equipment.
- Focuses on mature or late-stage technologies.

B-10.2

The DAC Program provides increased opportunities for the introduction of innovative and cost-saving technologies into DoD acquisition programs. DAC provides an "on-ramp" to DoD acquisition systems for small and medium vendors.

B-10.2.1

CNO, under the policy guidance of the ASN (RD&A), has responsibility within the Navy for management and program execution of Foreign Weapons Evaluation (FWE) and NATO Comparative Test Program (CTP).

B-10.2.2

When procurement of a foreign weapon system is planned, CNO will direct the DA and COMOPTEVFOR to assess the adequacy of any previously conducted DT&E and OT&E, and provide recommendations on the need for additional T&E prior to procurement. If additional T&E is required, CNO (N94) will assign an ACAT and TEIN. T&E will then be conducted using normal system procurement procedures.

B-10.2.3

Close liaison between the CTO project personnel and OPTEVFOR is required during test planning and evaluation periods to ensure data can be used effectively in follow-on OT.

B-10.2.3.1

Additional information on FCT and DAC Programs is available at the CTO Web site listed above and in SECNAVINST 5000.2F.

B-11. LFT&E

Live Fire Testing (LFT) is conducted to provide a timely and thorough assessment of the vulnerability and lethality of a system as it progresses through its development and subsequent production phases. The primary emphasis of LFT is on realistic testing as a source of personnel casualty, vulnerability, and lethality information, taking into account the susceptibility to attack and combat performance of the system. LFT will include, when feasible, the firing of threat munitions (or surrogates) at operational, combat-loaded U.S. weapon systems to test their vulnerability; and/or the firing of U.S. munitions or missiles against operational, combat-loaded threat targets (or surrogates) to test the lethality of those munitions or missiles. Guidelines for the conduct of LFT&E are provided in SECNAVINST 5000.2F.

The basic resourcing document for LFT&E is the TEMP; which is complimented by the LFT&E Management Plan. The TEMP Part III will contain a separate section that charts the LFT&E course of action during the acquisition process. The LFT&E section of Part III of the TEMP will be developed by the DA under the cognizance of DOT&E and will include:

- Description of the overall LFT&E strategy for the item

- Critical LFT&E issues

- Required levels of system vulnerability/lethality

- Management of the LFT&E program

- LFT&E schedule, funding plans, and requirements

- Related prior and future LFT&E efforts

- Evaluation plan and shot selection process

- Major test limitations for the conduct of LFT&E.

- LFT&E resource requirements (including test articles and instrumentation) will be appropriately identified in the TEMP Part IV T&E Resource Summary. See chapter 5 for TEMP details.

Within the Navy, LFT&E is primarily a developmental test responsibility since it is directly tied to the fundamental platform design. COMOPTEVFOR's major interest is system vulnerability and lethality and the associated impacts on the successful execution of mission tasks. The role of the OTD in LFT&E will be:

- Review the LFT&E section of the TEMP.

- Request a copy of the detailed LFT&E plan for review.
- Monitor the LFT to obtain a firsthand impression of the vulnerability or lethality of the SUT.
- Obtain a copy of the detailed LFT&E report for review.

APPENDIX C - ELECTRONIC MANAGEMENT SYSTEMS

C-1. INTRODUCTION

This appendix provides an overview of the Test and Evaluation Program System (TEPS) and also discusses the shared drives and archiving of test documents.

C-2. TEPS

C-2.1

TEPS is a module within the COMOPTEVFOR Knowledge Management System (KMS) on the unclassified LAN. (https://kms.cotf.navy.mil/home_auth/home.home_mis.home_main). TEPS is a Web-based management tool designed to assist the OTD/OTC in the tracking and administration of projects, Fleet services scheduling, and activity reports. Access to the TEPS database is limited to members of OPTEVFOR. When a TEIN assignment letter is received from OPNAV (N942), the new TEIN is entered in the TEPS database (see 01A) and the appropriate OPTEVFOR OTD desk code is assigned. TEPS TEIN assignments are coordinated via the 01A deputy. When required, a temporary local TEIN (3000-XXX) series may be assigned to programs that have not yet been assigned a formal TEIN by N942. TEIN (4000-XXX) and (5000-XXX) series are assigned for training and JCTDs, respectively. The TEPS User Guide is available for review on the Y: drive as needed.

It is crucially important that TEPS be maintained by the OTD and periodically reviewed by SHs, and division deputy directors. TEPS is central to the management of programs and documents at OPTEVFOR, and is the primary source of information for the COMOPTEVFOR Annual Report. Failure to maintain TEPS will result in inefficiencies and delays.

C-2.1.1 TEPS Requirements

C-2.1.1.1 Key Data Fields

Data fields that must be filled in prior to saving a project or phase page are marked with a red asterisk. Table E-1 lists additional key data fields that are critical to program management and require OTD/OTC focus.

Table C-1. Critical TEPS Fields UNCLASSIFIED		
Data Field	**Field Location**	**Comment**
Short Title	Project Main	Programs may have multiple short titles. Include common abbreviations to assist the search for programs when the TEIN is unknown.
Status	Project Main	**1.** "OPEN" - OPTEVFOR is expending resources (funding, OTD time attending meetings, conducting tests, writing reports, etc.). **2.** "OPEN NO OT" - No involvement from OPTEVFOR is anticipated (program is fielded with no planned improvements). **3.** "REC CNX" - Program has been or is being removed from the Fleet.
Test Status	Phase Main	The KMS Test Plan and Final Report Trackers check this field. Select from the following: COMP = Test is complete. End of Test message sent—all data received. DEFICIENT = Test not started or stopped during test, due to programmatic issues. FUTURE = Phase of test beyond the next phase. INCOMP = Test event was attempted, but results were incomplete and another attempt for this phase is planned. INTEST = Test is in progress. Start of test message has been released. NEXT = Next phase of testing planned. CNX = Phase was cancelled. Selecting "CNX" removes the phase from all trackers.
Est. Start Date	Phase Main	Date OTD thinks test will start. The KMS Test Plan Trackers are based on this date.
Start Date	Phase Main	The date actual testing began. Should be the same as the start test message.
Estimated Last Test Event Date	Phase Main	The (planned or estimated) date for the last test event for this phase to end.
Last Test Event Date	Phase Main	The actual end date for the last planned test event for this phase testing, regardless of data collection or data analysis. Last event used to gather data for this phase of test.
Est. End Date	Phase Main	Date the OTD thinks the test will end. The KMS Final Report Trackers use this date when End Date has not been filled in. Usually 30 days after Last Test Event date.
End Date	Phase Main	The date testing ended (to include data collection). The KMS Final Report Trackers are based on this date. Should be the same as the end of test message.
Test Result Code	Phase Main	After the final report is signed, select the appropriate option from the pull-down menu. Contact 01A in cases where the option is not clear.
Recommend Code	Phase Main	After the final report is signed, select the appropriate option from the pull-down menu.
Project COIs	Project COI	Ensure all COIs from the TEMP have been entered.
Phase COIs	Phase COI	Ensure all COIs for the phase have been entered. After the final report is signed, edit each COI to update the assessment or resolution, as appropriate. For RED or UNSAT COIs, a remark may be added to clarify the deficiency.
Major Deficiencies	Phase COI Edit for IOT&E and FOT&E Phases	After the final report is signed, select the appropriate number of major deficiencies associated with each COI.

Table C-1. Critical TEPS Fields UNCLASSIFIED		
Data Field	**Field Location**	**Comment**
FINAL REPORT	Phase Documentation Final Report Edit	The KMS Final Report Trackers look for a completion date. Enter "Complete Date" with the date the Report was signed. Enter "Doc Provided to Editors/Vault" with the date delivered to Editors (Unclass) or Vault (Classified). This alerts 01A to post report to Y-drive. Upon completion of upload to Y-drive, 01A will enter "yes" in the "01A Uploaded Document" box. This removes the document from the tracker. For phases that do not have final report, use the "NA" status to remove the phase from the Final Report Trackers.
TP SIG COMOPTEVFOR and TP SIG DOT&E	Phase Documentation TP SIG COMOPTEVFOR and DOT&E Edit	The KMS Test Plan Trackers look for a completion date. TP SIG DOT&E is only required for DOT&E oversight programs. Enter "Doc Provided to Editors/Vault" with the date delivered to Editors (Unclass) or Vault (Classified). This alerts 01A to upload the Test Plan to Y-drive. Upon completion of upload, 01A will enter "yes" in the "01A Upload Document" box. For non-oversight test plans, this removes the document from the tracker. **For oversight test plans**, the "Complete Date" must be entered in the "TP Sig DOT&E" box before the document comes off of the tracker. For phases that do not have test plans, use the "NA" status to remove the phase from the Test Plan Trackers.
FRAMEWORK SIG COMOPTEVFOR	Phase Documentation FRAMEWORK SIG COMOPTEVFOR edit	The KMS Framework Trackers look for a completion date. Enter "Complete Date" with the date the IEF was signed. Enter "Doc Provided to Editors/Vault" with the date delivered to Editors (Unclass) or Vault (Classified). This alerts 01A to upload report to Y-drive. Upon completion of upload, 01A will enter "yes" in the "01A Uploaded Document" box. This removes the document from the tracker. For phases that do not have an IEF (i.e., DT Assist), use the "NA" status to remove the phase from the Final Report Trackers.

C-2.1.1.2 Shared Drives

C-2.1.1.2.1 K-Drive

The K: drives on the unclassified and classified LANs are shared drives that support access to and storage of T&E documents. The drives are organized by division, each division is organized by section, and each section is organized by office code. While each division may set its own requirements, at a minimum, the K: drive folders for individual programs should be structured with the following guidelines.

C-2.1.1.2.2 Program Folder

Program folders should be named with the TEIN and short name (e.g., K:\40\41\0371-03 CBASS). Each program folder should have subfolders for the following, as required:

- Each phase of test

- Requirements documents

- Framework

- Funding

- TEMP

C-2.1.1.2.3 Phase of Test / Test Period

Within program folders, each phase of test should have its own folder using the name of the phase (e.g., K:\50\54\541\0201-08 EA-18G\OT-B1). Each phase of test should have folders for the following documents:

- Briefs

- Messages

- Final report

- Test plan

C-2.1.1.2.4 Documents

Test documents are built and stored in the K: drive document folders until they are finally signed. Once signed, most of these documents are archived elsewhere. However, as discussed below, there are certain documents that are not archived elsewhere, and therefore should be retained in the K: drive document folders.

C-2.1.1.3 Archiving of Documents

Test documents are archived in the Y:\00\Signed Test Documents folders on NIPR and SIPR. In addition to Test Plans, Reports, and IEFs the Y:\00\Signed Test Documents folders are to be used for archiving other official COMOPTEVFOR documents (i.e., TEMPs, M&S VV&A Plans, M&S Requirements Letters, M&S Accreditations, other official correspondence) signed at the Division Director or higher levels.

Additionally, the division's K: drive folders may be used to archive test documents.

C-2.1.1.4 Document Distribution

The eKM distribution portal was stood down in May 2017. This "pull" distribution has been replaced with a "push" approach. Divisions will send final signed documents to all stakeholders as attachments to email.

C-2.1.1.4.1 TEPS Archiving

TEPS can upload any unclassified document, and may be used to archive documents not stored on the Y-drive, to include:

- TEMP comment letter

- Deficiency report message

- Anomaly report message

- MOAs

- OT commencement message (start test message)

- OT completion message (end of test message)

- Requirements documents (ICD, CDD, CPD, ORD, etc.)

C-2.1.1.4.2 K: Drive Archiving

The K: drive is the only place for archiving of certain classified documents which are not posted to the Y: drive, and cannot be stored on TEPS due to classification. This includes the following classified documents:

- TEMP comment letter

- Deficiency report message

- Anomaly report message

- MOAs

- OT commencement message (start test message)

- OT completion message (end of test message)

- Requirements documents (ICD, CDD, CPD, ORD, etc.)

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APPENDIX D - SQUADRON COORDINATION

D-1. Purpose
The goal of this procedure is to ensure effective coordination between COMOPTEVFOR HQ and OT squadrons, and efficient routing of VX/VMX/HMX squadron documents during test planning, test execution and final report development.

D-2. Overview
Communication and coordination between COMOPTEVFOR HQ elements (50 Division, 01B, and 01C) and the VX/VMX/HMX squadrons for all OT-related products is required from cradle to grave. Regardless of supported and supporting relationships, coordination is critical to ensure all aspects of OT (to include targets, Fleet schedules, ranges, etc.) are planned and available for test execution. Coordination must be early and continuous to ensure transparency across the command and with external stakeholders. While each program is unique, the following is the general coordination guidance for each product:

o IEF: 50A/B/OTC coordinates with DOT&E/Sponsor/PM.

o TEMP: 50A/B/OTC coordinates with DOT&E/Sponsor/PM.

o Test Plan:
  o Squadron coordinates with Sponsor/PM.
  o 50A/B/OTC coordinates with DOT&E.

o Report:
  o Squadron coordinates with Sponsor/PM.
  o 50A/B/OTC coordinates with DOT&E.

The supported/supporting relationship between the OT squadrons and COMOPTEVFOR HQ is based on the document in development. For IEF, M&S Accreditation and TEMP development, OPTEVFOR (50 division) is supported and the OT squadrons are supporting. For Test Plan/DCP and Final Report development, the OT squadrons are supported and OPTEVFOR (50 and 01C) is supporting.

D-3. Roles and Responsibilities

D-3.1 OTD
The OTD's primary responsibility is to ensure all necessary operational and T&E expertise are engaged, and sufficient statistical and analytical rigor is employed to conduct a thorough test and to produce a clear and accurate test report. The OTD is the squadron's Subject Matter Expert (SME) for his program(s). The OTD is responsible to the squadron Commanding Officer (CO) for the substance of all test plans and test reports. The OTD is responsible for the proper management of all program funds, and for all phases of test planning, approval, execution, analysis, and reporting. The OTD is accountable for communicating with the program offices and

other external agencies, as appropriate. OTDs may be assigned a variety of support staff, including military or government civilian assistant OTDs or contracted support, as needed.

D-3.2 OTC

The OTC is a position assigned in the Air Warfare Division (50). The OTC coordinates the efforts between the OTD, who is located in the squadron, and the division Section Head, DACOS, and ACOS in 50 Division, as well as any other COMOPTEVFOR HQ entities that support the OT squadrons (01A/B/C/D, Comptroller, etc.). The OTC is the COMOPTEVFOR HQ SME for his programs and is responsible to the ACOS for the substance of all test documentation and situational awareness of SUT performance/issues during test planning through reporting. Unique to the OTD/OTC relationship, the OTC has the following responsibilities:

- Manage all interaction with DOT&E in coordination with the OTD.

- Coordinate all program funding with the program office to ensure that the OTD has adequate funding to execute test.

- Submit official Fleet resource requirements in support of test execution.

- Coordinate and schedule all COMOPTEVFOR HQ briefs and DOT&E briefs that require squadron support.

- Provide consolidated COMOPTEVFOR HQ Comment Resolution Matrix (CRM) to OTD following HQ review of squadron created documents.

- Produce Start Test and End Test messages based on OTD input.

- Support the squadron in staffing squadron documents through COMOPTEVFOR HQ

- Maintain awareness of all aspects of SUT performance/program status during test execution.

D-3.3 01C Action Officer (AO)

01C Test Planning and Evaluation is responsible for the analytical rigor applied to all test planning documents and reports across the Force. It supports the development of all test plans, reports, and supporting modeling and simulation documents. The 01C AO supporting the squadrons is the process SME for test planning, execution, and report writing.

D-3.4 50 Division ACOS

The 50 Division ACOS is responsible for being the primary interface with O-6 PMs during IEF and TEMP development and, during all phases of program development, with DOT&E Deputy Directors and AOs. The ACOS/DACOS ensure that all Division products are ready for Flag-level review and/or signature. The ACOS ensures COMOPTEVFOR representation at high-visibility test events and at all Operational Test Readiness Reviews (OTRR)/mission control panels, Working Integrated Product Team (WIPT) executive level meetings, and DOT&E Concept of Test Briefs.

D-3.5 Squadron CO

The squadron CO is responsible for primary interface with O-6 PMs during Test Execution. The squadron CO/COTD/ACOTD ensures that all squadron products (Test Plans and Final Reports) are ready for Flag-level review. The squadron CO may represent COMOPTEVFOR at high-

visibility test events and OTRR/mission control panels, WIPT executive level meetings, and DOT&E concept of test briefs.

D-4. Document Development and Staffing

D-4.1 IEF

50 Division owns; OTC initiates; OTD SME supports; Squadron CO/COTD/ACOTD involvement; review and concurrence achieved through the E-IPR process; 50 Division writes/staffs, gets 00 approval.

D-4.2 TEMP Inputs

50 Division owns; OTC initiates; OTD/ACOTD support for resources; Squadron CO visibility during O-6 review to ensure adequacy of resources; 50 Division writes/staffs, gets 00 approval.

- Test Plan

  o For oversight EOA/OA/QRA/IOT&E/VCD/FOT&E test plans and IT DCPs: Squadron owns; OTD initiates; OTC/01C/D supports; Squadron creates/edits; CO-approved draft Word version sent to OTC for routing (for HMX-1/VMX-1 Word version editors included in staffing process).

  o For non-oversight EOA/OA/QRA/IOT&E/VCD/FOT&E test plans and IT DCPs, which are released at the O-6 level: letterhead is required, therefore, 50A will review post squadron CO and release. 50A will inform 00/00D of impending approval of non-oversight test plans and will provide them for 00/00D review if directed.

  o Details of OTC/01C supporting role: During test plan development, when squadron is ready for OPTEVFOR review (prior to squadron CO approval), OTD will send copy of document to OTC who will forward to 01B/C/D. OTC and 01B will review document for adherence to IEF test design. OTC and 01C will review for format, adequacy of data collection and analysis plan, and adherence to approved test planning and execution processes. OTC and 01B/CD will review comments together and OTC will provide a consolidated CRM to OTD for further TP development and staffing through the squadron CO.

  o When CO-approved document has been reviewed by COMOPTEVFOR HQ front office, OTC will incorporate comments into CRM for correction to document. OTD will adjudicate CRM and return updated document and adjudicated CRM to OTC for staffing to front office.

- Reports

  o Includes DT assist LOO, EOA/OA/IOT&E/VCD/FOT&E reports, MUA reports, and QRA reports. Squadron owns; OTD initiates; OTC/01C/D supports; Squadron creates/edits; 50A/B Code involvement during AWG, SERB and ESERB; CO-approved draft Word version sent to OTC for routing (for HMX-1/VMX-1 word version editors included in staffing process). For DT assist LOO requiring COMOPTEVFOR letterhead: Squadron will e-mail final product to 50 Division as a Word document to print on letterhead and acquire approval signature. 50A will inform 00/00D of impending approval of LOOs and will provide them for 00/00D review if directed.

- Details of OTC/01C Supporting Role

  o In preparation for AWG, OTD will provide draft data appendix to OTC/01C. 01C reviews and provides CRM to OTC.

  o In preparation for SERB, OTD will provide draft B/G sheets and COI results paragraphs to OTC/01C. OTC will review documents for content. 01C will review for format and adherence to approved test reporting policies. OTC and 01C will review comments together and OTC will provide a consolidated CRM to OTD for incorporation/adjudication prior to SERB.

D-4.2.1

When CO-approved Final Report has been reviewed by COMOPTEVFOR HQ front office, OTC will incorporate comments into CRM for correction to document and send to squadron. OTD will adjudicate CRM and return updated document and adjudicated CRM to OTC for staffing to front office.

D-4.3 Modeling and Simulation Documents

Includes M&S Requirements Letter, M&S Accreditation Plan, and M&S Accreditation report. 50 Division owns; OTC initiates; OTD/COTD/ACOTD supports. 50 division writes/staffs, gets 00 approval.

D-4.4 Other Communication

All communication between COMOPTEVFOR HQ and squadron during document development must include all three stakeholders to maintain situational awareness (OTD, OTC and 01C).

D-4.5 CRM

All COMOPTEVFOR HQ CRMs, with squadron adjudication included, will be routed with final document.

APPENDIX E - TEST AND EVALUATION STAKEHOLDERS

E-1. INTRODUCTION

In addition to the relationships discussed in chapter 2, there are a number of other organizations the operational tester will likely encounter in the design, planning, execution, and reporting of operational tests. Since most are aligned by warfare area, the stakeholder list is provided by warfare division.

E-2. UNDERSEA WARFARE

E-2.1 PEO Submarines

Focuses on the design, construction, delivery, and conversion of submarines and advanced undersea and anti-submarine systems, including Special Operations Forces delivery systems; submarine rescue systems; torpedoes; towed acoustics sensors; and unique submarine sonar, control, imaging and electronic warfare systems.

E-2.2 PEO Columbia

Focuses on the design, construction, and delivery of the Columbia-class fleet ballistic missile submarine.

E-2.3 PEO Ships

Manages acquisition and complete life-cycle support for all U.S. Navy non-nuclear surface ships. These ships range from frontline combatants to amphibious ships that transport Marines and their equipment to supply and replenishment cargo ships.

E-2.4 PEO Unmanned and Small Combatants (PEO USC)

Designs, develops, builds, maintains and modernizes the Navy's expanding family of unmanned maritime systems, mine warfare systems, and Small Surface Combatants by employing the full arsenal of acquisition authority to develop and deliver innovative solutions and technologies.

E-2.5 PEO for Command, Control, Communications, Computers, and Intelligence (PEO C4I))

PEO C4I provides integrated communications and information technology systems that enable information dominance and the command and control of maritime forces. PEO C4I is the ISIC responsible for C4I-related Program Management Warfare Offices (PMW).

E-2.6 PEO, Integrated Warfare Systems (PEO IWS)

Develops, delivers and sustains operationally dominant combat systems for Ships and Submarines.

E-2.7 Integrated Warfare Systems, Undersea Systems (IWS 5)

Program Manager, oversees the design and development of the Submarine Combat Systems and CRUDES ASW and Mission Planning segments. (ARCI, BYG-1, SQQ-89, USW DSS)

E-2.8 Support Ships, Boats and Craft Program Office (PMS 325)

The Support Ships, Boats and Craft Program Office (PMS 325) within PEO Ships delivers integrated ship, boat and craft products and services to U.S. and international maritime forces around the world. (TAGOS(X))

E-2.9 Advanced Submarine Systems Program Office (PMS 394)

Acquisition and life cycle support for advanced undersea systems, SEAWOLF Class submarines including USS JIMMY CARTER (SSN 23), Deep Submergence Vehicle (DSV) ALVIN, Universal Launch and Recovery Module (ULRM), and related Research and Development (R&D) systems. (Tetra)

E-2.10 Columbia Class Program Office (PMS 397)

Is conducting the design, construction, and delivery of the next-generation Sea-Based Strategic Deterrence submarine (SSBN). (CLB Class)

E-2.11 Submarine Acoustic Systems Program Office (PMS 401)

Develops and implements the Warfare System Modernization Plan that defines future upgrades, systems standards, and interface definitions for development of submarine acoustic systems to include towed arrays and the AN/BQQ-10(V) Sonar System. (BQQ-10, LVA)

E-2.13 Undersea Weapons Program Office (PMS 404)

Oversees the research, development, construction, and modernization of all undersea weapons, including the M-54 lightweight torpedo employed aboard surface ships and aircraft and the Mk 48 ADCAP/CBASS heavyweight torpedoes employed aboard submarines. (Mk 48, Mk 54)

E-2.14 Unmanned Maritime Systems Program Office (PMS 406)

Chartered to develop, acquire, deliver, and support operationally effective, integrated Unmanned Maritime Systems (UMS) for the war fighter and to direct UMS experimentation and technology maturation efforts. (ORCA, Snakehead, Razorback)

E-2.15 Undersea Defensive Warfare Systems Program Office (PMS 415)

Conducts research, development, and construction of submarine defensive systems, including noisemakers and anti-torpedo torpedoes. (CAT, TWS, NIXIE, SubTDS)

E-2.16 Submarine Combat System Program Office (PMS 425)

Develops and acquires the combat and weapons control systems to include the AN/BYG-1(V) Combat System for both in-service and new construction ships. (BYG-1, SLUAS)

E- 2.17 Submarine Sensor Systems Program Office (PMS 435)

Designs, develops, and oversees the construction of EW Systems, periscopes, and the Photonics Mast. (CSIS, BLQ-10).

E-2.18 Virginia Class Program Office (PMS 450)

Oversees the design, construction, and delivery of the United States' newest attack submarine. (VA Class)

E-2.19 Maritime Surveillance Systems Program Office (PMS 485)

Oversees the design and development of the SURTASS ASW Program. (SURTASS, SURTASS-E, DSS DWP)

E-2.18 Mine Warfare Program Office (PMS 495)

Chartered to develop, deliver, field, and sustain enduring MIW systems including unmanned systems. (HAMMERHEAD)

E-2.19 Tactical Networks Program Office (PMW 160)

The Tactical Networks Program Office provides affordable, interoperable, and secure net-centric enterprise capabilities to the Navy, joint, and coalition warfighters. (SubLAN)

E-2.20 Undersea Integration Program Office (PMW 770)

The Undersea Integration Program Office delivers integrated and interoperable C4I capabilities and support to the Navy by connecting the undersea architecture of manned and unmanned systems and undersea vehicles. (OE538, LBUCS, CSRR)

E-2.21 Commander Submarine Forces, Commander Submarine Force Atlantic

Commander, Submarine Forces, is the undersea domain lead, and is responsible for the submarine force's strategic vision. As commander, Submarine Force Atlantic commands all Atlantic-based U.S. submarines, their crews and supporting shore activities. These responsibilities also include duties as commander, Task Force (CTF) 114, CTF 88, and CTF 46. As commander, Allied Submarine Command, provides advice to the North Atlantic Treaty Organization Strategic Commanders on submarine related issues.

E-2.22 Commander Submarine Force, U.S. Pacific Fleet

Commander Submarine Force, U.S. Pacific Fleet is the principal advisor to the Commander, U.S. Pacific Fleet for submarine matters. The Pacific Submarine Force (SUBPAC) includes attack, ballistic missile and auxiliary submarines, submarine tenders, floating submarine docks, deep submergence vehicles and submarine rescue vehicles throughout the Pacific. The Force's mission is to provide the training, logistical plans, manpower and operational plans and support and tactical development necessary to maintain the ability of the Force to respond to both peacetime and wartime demands.

E-2.23 Undersea Warfighting Development Center (UWDC))

UWDC integrates undersea CONOPS, TTP, theater level Command and Control of ASW forces, and prepares submarine crews to conduct assigned advanced missions and all combat missions. UWDC in concert with NWDC develops, validates, publishes, and revises TTP for submarine and undersea warfare to include the Integrated Undersea Surveillance Systems.

E-2.24 Naval Surface and Mine Warfighting Development Center (SMWDC)

SMWDC's mission is to increase the lethality and tactical proficiency of the Surface Force across all domains. SMWDC provides individuals, ships, and staffs tactical sets and reps to increase lethality and tactical proficiency and provides operational and subject matter expert support to ships, squadrons, strike groups, independent deployers, Numbered Fleet Commanders, Naval Component Commanders, and Combatant Commanders through direct, reach-back, BMD mission package, or fly-away team support, as needed.

E-2.25 Naval Undersea Warfare Center (NUWC) Keyport Washington and NUWC Detachment Pacific

Supports system design and integration, test development, execution, and analysis for submarine and surface ship combat systems, sonar systems, and torpedoes. (BQQ-10, BYG-1, SQQ-89, Mk 48, Mk 54, HAMMERHEAD, CRAW, UUVs)

E-2.26 Naval Undersea Warfare Center (NUWC) Newport Rhode Island

Supports system design and integration, test development, execution, analysis, and modeling and simulation efforts for submarine and surface ship combat systems, sonar systems, and torpedoes. (CLB Class, VA Class, BQQ-10, BYG-1, SQQ-89, Mk 48, Mk 54)

E-2.27 Johns Hopkins University Applied Physics Laboratory (JHU/APL)

A Federally Funded Research and Development Center (FFRDC). Supports advanced test and test data analysis for submarine and surface ship combat systems and sonar systems to include in-lab playback of test event recordings on tactical systems. (CLB Class, VA Class, SURTASS, BQQ-10, BYG-1, SQQ-89)

E-2.28 Applied Research Laboratory, Penn State University (ARL/PSU)

ARL/PSU is an integral part of the University. Originally focused on undersea weapons technology development, ARL now includes a broad research portfolio addressing the needs of various sponsors. As a Department of Defense (DoD) designated University Affiliated Research Center (UARC), ARL conducts essential research, development, and systems engineering in support of our nation's priorities, free from conflict of interest or competition with industry. (CLB Class, VA Class, BQQ-10, BYG-1, SQQ-89, Mk 48, Mk 54)

E-2.29 Applied Research Laboratory, University of Texas (ARL/UT)

Applied Research Laboratories, the University of Texas at Austin (ARL/UT), is a Department of Defense University-Affiliated Research Center (UARC). Since 1945, ARL/UT has been engaged in sponsored research dedicated to improving our national security through applications of acoustics, electromagnetics, and information sciences. (CLB Class, VA Class, BQQ-10, SQQ-89)

E-3. AIR WARFARE

E-3.1 Air Test and Evaluation Squadron ONE (VX-1)

The primary mission of VX-1 is to conduct tests, evaluations, and investigations of antisubmarine and anti-surface aircraft weapons systems, airborne early warning aircraft systems, airborne strategic weapons system, support systems, equipment, and materials in an operational environment. The squadron also develops, reviews, and disseminates new ASW/SUW tactics and

procedures for Fleet use, serving as the model manager for all Air ASW/SUW tactical publications. The squadron is administratively assigned to Commander, Naval Air Force, Atlantic.

E-3.2 Air Test and Evaluation Squadron NINE (VX-9)

VX-9 is charged with the testing and evaluation of weapons and their related systems for the F/A-18 and AV-8B families of aircraft. The squadron is administratively aligned under Commander, Naval Air Force, U.S. Pacific Fleet.

E-3.3 Marine Aviation Weapons and Tactics Squadron One (MAWTS-1)

Conducts training for aviation units, most notably the Weapons and Tactics Instructor (WTI) course at Marine Corps Air Station Yuma.

E-3.4 Marine Helicopter Squadron ONE (HMX-1)

Is a United States Marine Corps helicopter squadron responsible for the transportation of the President of the United States, Vice President, Cabinet members, and other VIPs. In addition to its VIP transport role, it is also tasked with operational test and evaluation of Presidential transport helicopters. The squadron is under the administrative control of the Deputy Commandant for Aviation. Routine operational control is under the White House Military Office. Operational testing is executed under the direction of COMOPTEVFOR, when required.

E-3.5 Marine Operational Test and Evaluation Squadron One (VMX-1)

VMX-1 is an independent test organization conducting operational test and evaluation of assigned USMC helicopter, attack helicopter, and tilt rotor aircraft under the direction of COMOPTEVFOR. The squadron is under the administrative control of the Deputy Commandant for Aviation with the charter to:

- Address future requirements.

- Build an operational tactics guide.

- Develop tactics, techniques, and procedures.

- Sponsor tiltrotor issues and concepts of employment.

E-3.6 Air Test and Evaluation Squadron THREE ONE (VX-31)

Developmental Test and Evaluation squadron based at Naval Air Weapons Station China Lake, CA, falls under Naval Test Wing Pacific (NTWP). Responsible for testing manned and unmanned aircraft, air weapons, and air weapon systems.

E-3.7 Commander, Naval Air Forces (CNAF)

Is dual-hatted as Commander, Naval Air Force, Pacific (COMNAVAIRPAC) and is the aviation TYCOM for all United States Navy naval aviation units. CNAF is responsible for the material readiness, administration, training, and inspection of units/squadrons under its command, and for providing operationally ready air squadrons and aircraft carriers to the Fleet. COMNAVAIRPAC exercises administrative control of VX-9.

E-3.8 Commander, Naval Air Force, Atlantic (COMNAVAIRLANT)

Is the aviation TYCOM for the United States Atlantic Fleet naval aviation units. AIRLANT is responsible for the material readiness, administration, training, and inspection of units/squadrons under its command, and for providing operationally ready air squadrons and aircraft carriers to the Fleet. COMNAVAIRLANT exercises administrative control of VX-1.

E-3.9 Commander, Naval Air Systems Command (NAVAIR)

Provides material support for aircraft and airborne weapon systems for the United States Navy and Marine Corps. Serves as the ultimate technical authority for all U. S. Naval aircraft.

E-3.10 Naval Aviation Warfighting Development Center (NAWDC)

NAWDC trains Navy Air Forces in advanced TTP across all combat mission areas at the individual, unit, and integrated levels ensuring alignment of the training continuum; develops, validates, standardizes, publishes, and revises TTPs; provides operational and subject matter expertise support to Strike Group Commanders, Numbered Fleet Commanders, and Combatant Commanders.

E-3.11 Naval Air Warfare Center, Aircraft Division (NAWCAD)

Is an organization within the Naval Air Systems Command (NAVAIR), (aligned under AIR 4.0 – the NAWCAD Commander serves as Assistant Commander for Research and Engineering) focused primarily on aircraft development and testing for the DoN. NAWCAD supports major aspects of aircraft developmental testing including aircraft performance, flying qualities, electromagnetic compatibility, and carrier suitability. NAWCAD serves as ISIC for Naval Test Wing Atlantic and the Training Systems Division (Orlando, FL).

E-3.12 VX-20

Developmental Test and Evaluation squadron based at NAS Patuxent River, MD, falls under Naval Test Wing Atlantic (NWTL). Responsible for testing fixed-wing aircraft and aircraft systems, to include systems for the P-3, P-8, E-2, C-2, C-130, E-6, T-6, and T-34 aircraft.

E-3.13 HX-21

Developmental Test and Evaluation squadron based at NAS Patuxent River, MD, falls under Naval Test Wing Atlantic (NWTL). Responsible for testing rotary-wing aircraft and aircraft systems, to include systems for the H-1, H-3, H-46, H-53, H-57, H-60, MQ-8B, and V-22 series aircraft and UAVs.

E-3.14 VX-23

Developmental Test and Evaluation squadron based at NAS Patuxent River, MD, falls under Naval Test Wing Atlantic (NWTL). Responsible for testing fixed-wing tactical aircraft and aircraft systems, to include systems for the F-18, EA-6B, and T-45 series aircraft.

E-3.15 Naval Air Warfare Center, Weapons Division (NAWCWD)

Is an organization within the Naval Air Systems Command (NAVAIR), (aligned under AIR 5.0 – the NAWCWD Commander serves as the Assistant Commander for Test and Evaluation) focused primarily on EW and weapons development and testing for the DoN. NAWCWD also hosts significant science and technology activity for aviation systems. NAWCWD has two locations in

Southern California: China Lake hosting the land test range and Point Mugu, hosting the sea test range. NAWCWD serves as ISIC for Naval Test Wing Pacific.

E-3.16 Air Force Operational Test and Evaluation Center (AFOTEC)

Is a direct reporting unit of Headquarters, United States Air Force. It is the Air Force operational test agency responsible for testing new systems being developed for Air Force and multiservice use. AFOTEC employs a detachment construct for the execution of operational testing.

E-3.16.1 Detachment 1 (Edwards AFB, CA)

Lead agency for accomplishing Block 2 and 3 Initial Operational Test and Evaluation of the F-35 Lightning II for the U.S. Air Force, U.S. Navy, U.S. Marine Corps, United Kingdom Ministry of Defense, and the Royal Netherlands Air Force. Leads the Joint Operational Test Team.

E-3.16.2 Detachment 2 (Eglin AFB, FL)

Evaluates operational system(s) mission capability, effectiveness, and suitability for Air Force and multiservice users. Primarily focused on weapons and weapon system testing.

E-3.16.3 Detachment 4 (Peterson AFB, CO)

Operationally tests space, missile, and missile defense capabilities.

E-3.16.4 Detachment 5 (Edwards AFB, CA)

E-3.16.5 Operationally tests aircraft systems. Detachment 6 (Nellis AFB, NV)

Plans and conducts operational test and evaluation of fighter aircraft.

E-4. INFORMATION WARFARE

E-4.1 U.S. Fleet Cyber Command

Directs Navy cyberspace operations globally to achieve military objectives in and through cyberspace. Organizes and directs Navy cryptologic operations worldwide and supports information operations and space planning and operations as directed. Executes cyber missions as directed. Operates, maintains, secures, and defends the Navy's portion of the Global Information Grid: Delivers integrated cyber, information operations, cryptologic, and space capabilities. Assesses Navy cyber readiness; manages the Man, Train and Equip (MT&E) functions associated with Navy Component Commander (NCC) for U.S. Cyber Command and Service Cryptologic Commander (SCC) responsibilities.

E-4.2 Commander, TENTH Fleet (C10F)

Numbered Fleet Commander for Fleet Cyber Command and exercises operational control of assigned naval forces to coordinate with other naval, coalition, and Joint Task Forces to execute full spectrum of cyber, EW, information operations and signal intelligence capabilities, and missions across the cyber, electromagnetic, and space domains.

E-4.3 Naval Information Forces (NAVIFOR)

NAVIFOR is the C5I Type Commander. It is responsible for Fleet Readiness, C5I Modernization and Sustainment, Cyber Security, Information Technology Efficiencies, Improvement Program,

and training for the C5I workforce. The Naval OPSEC Support Team (NOST) located at the NAVIFOR, has been designated the Naval (Navy and USMC) OPSEC Support Element, providing OPSEC support throughout the Fleet.

E-4.4 Naval Information Warfare Systems Command (NAVWAR)

NAVWAR identifies, develops, delivers and sustains information warfare capabilities in support of naval, joint, coalition and other national missions.

E-4.5 Naval Information Warfighting Development Center (NIWDC)

NIWDC Develops, validate, standardize, publish, and revise advanced Information Warfare training; tactics, techniques and procedures (TTP).

E-4.6 Information Warfare Training Group (IWTG)

IWTG provide support for Navy unit IW assessments and certification. Trains the fleet to IW mission TTPs at unit level.

E-4.7 Navy Cyber Defense Operation Command (NCDOC)

NCDOC executes Navy's Defensive Cyber Operations. NCDOC is the only Navy organization tasked with providing penetration assessment services for C4I systems.

E-4.8 Naval Network Warfare Command (NETWARCOM)

NETWARCOM Execute tactical-level command and control to direct, operate, maintain and secure Navy communications and network systems for Department of Defense Information Networks; leverage Joint Space capabilities for Navy and Joint Operations.

E-4.9. Program Executive Office for Command, Control, Communications, Computers, and Intelligence (PEO C4I)

PEO C4I provides integrated communications and information technology systems that enable information dominance and the command and control of maritime forces. PEO C4I is the ISIC responsible for C4I-related Program Management Warfare Offices (PMW).

E-4.9.1 PMW 120

The Battlespace Awareness and Information Operations Program Office provides net-ready intelligence, meteorological, oceanographic, and information operations products and services that allow Sailors to correlate data from organic sensors and national sources, to gauge enemy intentions, provide I&W, and determine operationally relevant information about the physical environment.

E-4.9.2 PMW 130

The Information Assurance and Cybersecurity Program Office provides cybersecurity products and services to ensure protection of Navy and joint information and telecommunications systems from hostile exploitation and attack through cryptographic, network, and host-based security products that provide for strong authentication, data integrity, confidentiality, nonrepudiation, and availability of network resources and information.

E-4.9.3 PMW 146

The Navy Communications Satellite Program Office manages the acquisition for all DoD Narrowband satellite systems. PMW 146 is the lead for Mobile Objective User System (MUOS) and also manages the maintenance for the Ultra High Frequency Follow-On (UFO) SATCOM system.

E-4.9.4 PMW 150

The Navy Command and Control Program Office provides operational and tactical command and control capabilities, by integrating real-time and near real-time representations of tactical situations, while including targeting support, chemical-biological warnings, and logistics support for the Navy, Marine Corps, and joint and coalition warfighters.

E-4.9.5 PMW 160

The Tactical Networks Program Office provides affordable, interoperable, and secure net-centric enterprise capabilities to the Navy, joint, and coalition warfighters.

E-4.9.6 PMW 170

The Communications and GPS Navigation Program Office provides satellite, line-of-sight, and extended-line-of-site communication systems for voice and data communications and GPS capabilities for ship navigation, command and control systems, and weapons systems.

E-4.9.7 PMW 180

The Navy's Program Manager for developing, acquiring, fielding, and sustaining integrated, network-ready products and services, including intelligence, meteorology, oceanography, and information operations.

E-4.9.8 PMW 740

The International C4I Integration Program Office delivers and integrates tailored, C4I releasable systems to foreign partners through Foreign Military Sales, Foreign Military Financing, and other DoD-funded international programs to enhance interoperability between the United States and its strategic partners.

E-4.9.9 PMW 750

The Carrier and Air Integration Program Office delivers integrated and interoperable C4I capabilities and support to our Navy's aircraft carriers, amphibious ships, command ships, and aircraft by leading advanced planning for Fleet modernization and new CON ship C4I efforts.

E-4.9.10 PMW 760

The Ship Integration Program Office delivers integrated C4I capabilities to the Navy's unit and group-level ships in new CON and as part of the Navy Modernization Plan.

E-4.9.11 PMW 770

The Undersea Integration Program Office delivers integrated and interoperable C4I capabilities and support to the Navy by connecting the undersea architecture of manned and unmanned systems and undersea vehicles.

E-4.9.12 PMW 790

The Shore and Expeditionary Integration Program Office delivers relevant, integrated, and interoperable C4I capabilities and support to our Navy's shore and expeditionary forces through modernization, acquisition, and system integration.

E-4.10 Program Executive Office for Digital and Enterprise Services (PEO Digital)

PEO Digital oversees a portfolio of enterprise-wide information technology programs designed to provide standard IT capabilities to Sailors at sea, Marines in the field and their support systems. PEO Digital ensures that these programs maximize value to warfighters by balancing costs with the capability delivered to the end-user.

E-4.10.1 PMW 205 – Naval Enterprise Network (NEN)

Manages Navy Marine Corps Intranet (NMCI); Next Generation Enterprise Network (NGEN); BLII/ONE-NET - Manages the acquisition lifecycle of enterprise-wide networks while providing secure, seamless and global computer connectivity for the Department of the Navy.

E-4.10.2 PMW 260 – Special Networks and Intelligence Mission Applications (SNIMA)

Manages the acquisition lifecycle of the Navy's shore-based Joint Worldwide Intelligence Communications Systems (JWICS) IT domain.

E-4.10.3 PMW 270 – Navy Commercial Cloud Services (NCCS)

Develops and executes the Navy's overarching cloud brokerage structure.

E-4.10.4 PMW 280 – Special Access Programs (SAP)

Plans and manages integration of capabilities for DoN SAP enterprise IT networks.

E-4.10.5 PMW 290 – Enterprise IT Strategic Sourcing (EITSS)

Implements and manages IT agreements for the DoN, DoD and the Federal Government through consolidating, centralizing and streaming IT acquisition.

E-4.11 Program Executive Office for Manpower, Logistics and Business Solutions (PEO MLB)

PEO MLB oversees a portfolio of enterprise-wide information technology programs designed to enable common business processes to Sailors at sea, Marines in the field and their support systems. PEO MLB ensures these programs maximize value to the warfighter by balancing cost with the capability delivered to the end user.

E-4.11.1 PMW 220

Navy Enterprise Business Solutions (EBS), PMW 220, is a portfolio program of IT solutions for aligning the Navy's money, manpower, and materials. The Navy EBS portfolio includes both Navy Enterprise Resource Planning (ERP) and the E- Business and Electronic Procurement System (EPS), which modernize and standardize Navy business operations by providing management visibility across the enterprise and increasing effectiveness and efficiency.

E-4.11.2 PMW 230

Delivers integrated IT logistics systems that provide cohesive and seamless high-performance readiness capabilities for Marine Corps logistics operations.

E-4.11.3 PMW 240

Single information technology (IT) acquisition agent for N1 business operations, providing full life cycle management to support the Navy's manpower, personnel, training and education (MPT&E) initiatives. The SWP portfolio includes MyNavy Portal (MNP), mobile apps, Navy eLearning (NeL), distribution systems, Navy Pay and Personnel System (NP2) and Authoritative Data Environment (ADE).

E-4.11.4 PMW 250

Develops and implements reliable, efficient and secure business information technology (IT) solutions. E2S's portfolio includes the Department of the Navy Tasking, Records and Consolidated Knowledge Enterprise Repository (DoN TRACKER), iNAVY, DoN IT Portfolio Repository/DoN Application and Database Management System (DITR/DADMS), Naval Justice Information System (NJIS), Joint Air Logistics Information System (JALIS), NAVY 311, Navy Information Application Product Suite (NIAPS) and Risk Management Information (RMI).

E-4.11.5 PMS 444

Navy Maritime Maintenance Enterprise Solution (NMMES) Technical Refresh (TR) Program Management Office (NMMES-TR) - was established in 2016 to acquire, deliver, and deploy modern Information Technology (IT) systems to replace the current maritime shore maintenance solution which has reached end-of-life.

E-5. SURFACE WARFARE

E-5.1 Board of Inspection and Survey (INSURV)

The Board of Inspection and Survey conducts acceptance trials of ships and service craft for the purpose of determining the quality of construction, compliance with specifications and Navy requirements, to determine if builder responsible equipment is operating satisfactorily during the guarantee period following acceptance and to make recommendations upon their acceptance by the Navy. They conduct material inspections of all naval ships at least once every 3 years if practical, for the purpose of determining and reporting upon a ship's fitness for further service and material conditions which limits its ability to carry out assignment missions. Since testing of platforms and combat systems tends to be quite expensive, the cost efficiencies realized by conducting combined INSURV/COMOPTEVFOR test events whenever possible can be quite substantial.

E-5.2 Commander, Carrier Strike Group FOUR (CSG-4)/FIFTEEN (CSG-15)

CSG-4/CSG-15, along with subordinate commands Tactical Training Group Atlantic (TTGL) and Pacific (TTGP), and Expeditionary Warfare Training Group Atlantic (EWTGL) and Pacific (EWTGP), prepare every Carrier Strike Group (CSG), Amphibious Ready Group (ARG) and Task Force Deployer for sustained, forward-deployed, high tempo operations. On behalf of Commander USFF and Commander Pacific Fleet, CSG-4 and CSG-15, respectively, mentor, train and assess deploying forces through planning and conducting immersive exercises at the operational and

tactical levels of war. CSG-4 assesses Atlantic Fleet and Forward Deployed Naval Forces - Europe (FDNF-E) deployers.

CSG-15 assesses Pacific Fleet and FDNF Japan deployers. Additionally, CSG-4 is USFF's lead agent for Integration and Interoperability (I&I) reviews conducted to establish WCB kill chains, which subsequently inform COI selection consistent with Navy's required operational capabilities and projected operational environments (ROC & POE) Naval Surface and Mine Warfighting Development Center (NSWDC) NSMWDC trains Navy Surface Forces in advanced. TTPs across all combat mission areas at the individual, unit, and integrated levels; develops, validates, standardizes, publishes, and revises TTPs; and provides operational and subject matter expertise support to Strike Group Commanders, Numbered Fleet Commanders, and Combatant Commanders.

E-5.3 Military Sealift Command (MSC)

Mans and operates Fleet auxiliary vessels, such as the Joint High Speed Vessel (JHSV) and Dry Ammunition and Cargo Ship (T-AKE). Responsible for maintenance and operations of all vessels assigned to the MSC, including Military Preposition Force (MPF) ships.

E-5.4 Missile Defense Agency (MDA)

The MDA is a research, development, and acquisition agency within the Department of Defense. The Navy's program element of MDA is MDA/AB (PD-452), which coordinates the developmental efforts of the Navy's afloat and shore Ballistic Missile Defense (BMD) systems. The Navy's BMD systems are part of the larger Ballistic Missile Defense System (BMDS).

E-5.5 Naval Surface Warfare Center, Corona Division (NSWCCO)

One of two suppliers of Navy Working Capital Funded (NWCF) government civilian OTDs, AOTDs, and analysts. Additionally, one of Surface Warfare division's main data reduction and analysis agencies. As a third-party data collector, NSWCCD serves warfighters and program managers as an independent performance assessment agent throughout systems' life cycles by gauging the Navy's warfighting capability of weapons and integrated combat systems, from unit to force level, through assessment of those systems' performance, readiness, quality, supportability, and the adequacy of training.

E-5.6 Naval Surface Warfare Center, Dahlgren Division (NSWCDD)

Home to several laboratories conducting R&D, as well as DT&E activities for programs covered by Surface Warfare Division TEINs.

E-5.7 Naval Surface Warfare Center, Port Hueneme Division (NSWCPHD)

One of two suppliers of NWCF government civilian OTDs, AOTDs, and analysts.

E-5.8 PEO Integrated Warfare Systems (PEO (IWS))

Manages surface ship and submarine combat technologies and systems, and coordinates Navy Open Architecture across ship platforms.

E-6.   EXPEDITIONARY WARFARE DIVISION/LCS

E-6.1 PEO Unmanned and Small Combatants (PEO USC)

PEO Unmanned and Small Combatants designs, develops, builds, maintains and modernizes the Navy's expanding family of unmanned maritime systems, mine warfare systems and small surface combatants.

E-6.2 PMS 406 - Unmanned Maritime Systems

Chartered to develop, acquire, deliver, and support operationally effective, integrated Unmanned Maritime Systems (UMS) for the war fighter and to direct UMS experimentation and technology maturation efforts to meet the Fleet's capability needs. UMS comprises Unmanned Maritimes Vehicles (UMV), which includes both Unmanned Undersea Vehicles (UUVs) and Unmanned Surface Vehicles (USVs), and fully integrated sensors and payloads as necessary to accomplish the required missions

E-6.3 PMS 420 – LCS Mission Modules

Develops and acquires the Surface Warfare (SUW), Anti-submarine Warfare (ASW), and Mine Countermeasures (MCM) Mission Packages for installation on both Littoral Combat Ship (LCS) variants, enabling LCS to perform a diverse portfolio of mission sets from a common base platform.

E-6.4 PMS 495 - Mine Warfare

Deliver mine warfare capabilities to the warfighter. PMS 495 systems provide mining and mine countermeasure capability from the beach zone out to deep water.

E-6.5 PMS 501 - Littoral Combat Ships

Responsible for pre-OWLD (Obligation Work Limiting Date) LCS Seaframes (12-18 months after delivery).

E-6.6 PMS 505 - LCS Fleet Introduction & Sustainment

Responsible for post- OWLD LCS Seaframes (in-service).

E-6.7 IWS 8 – LCS Combat Systems Integration

Responsible for LCS systems integration

E-6.8 PMS 340 (SEA-06 NSW)

Provides Program Management for Navy common service programs typically funded through title 10 appropriation. Mile Stone Decision Authority is SEA-06 or PEO Maritime at SOCOM.

E-6.9 PMS 408 (SEA-06 EXM)

Provides Program Management for Navy Expeditionary Warfare, Anti-Terrorism, Explosive Ordnance Disposal, and CREW systems. Mile Stone Decision Authority is SEA-06.

E-6.10 SOCOM PEO Maritime

Mile Stone Decision Authority for all SOF AT&L managed programs in the maritime competency to include small craft, submersibles, and diving system. Their subordinate Program Managers

provide development and program management support for Special Operations Force peculiar capability funded though MFP 11 appropriation.

E-6.11 SOCOM J-8O

Provides oversight for PEO Maritime programs funded through MFP 11 where the requirements are managed through SOCOM J-8. Works closely with the OTAs in observing testing as they receive the OTA test report and grant fielding and deployment release of all SOCOM developed technology.

E-6.12 Joint Service EOD Military Technical Acceptance Board

Comprised of services detachment from all four services, conducts testing and validation of EOD tools, techniques and publications prior to authorization for EOD use and fielding

E-6.13 Naval Mine and ASW Warfare Center of Excellence (NMAWC)

The warfighting center of excellence for Mine Warfare (MIW) and Antisubmarine Warfare (ASW), focuses efforts across numerous resource sponsors, systems commands, research laboratories, training organizations, and operational commands to ensure Navy-wide competency in the MIW and ASW mission areas. NMAWC is the primary command through which issues related to MIW and ASW are coordinated with tactical development agencies and commands.

E-6.14 Naval Surface Warfare Center Panama City Division

Conduct research, development, test and evaluation, in-service support of mine warfare systems, mines, naval special warfare systems, diving and life support systems, amphibious/expeditionary maneuver warfare systems, other missions that occur primarily in coastal (littoral) regions and to execute other responsibilities as assigned by Commander, Naval Surface Warfare Center.

E-6.15 Joint Program Executive Office – Chemical-Biological-Radiological Defense (JPEO-CBRD)

Provides single program executive responsibility for the acquisition, testing and fielding of new or advanced chemical, biological or radiological (CBR) capabilities to the Joint services. Serves as the Milestone Decision Authority for programmatic decisions and provides principle funding for all test and evaluation requirements inclusive of OPTEVFOR support functions. Programs may be delegated to Joint Program Managers (Protection, Sensors, Radiological/Nuclear, Medical Countermeasures, Guardian and Information Management/Information Technology) as required by system function.

E-6.16 Deputy Undersecretary of the Army for Test and Evaluation (DUSA-TE)

Serves as the executive oversight responsibility of all test and evaluation activities in the Department of Defense when DOT&E is not involved. Provides policy, guidance and certification for all chemical, biological or radiological test infrastructure or laboratory capability. Leads the Test and Evaluation Capabilities and Methodologies Integrated Process Team (TECMIPT) which provides T&E Test Operating Procedures (TTOPs) as guidelines for developmental test administration, procedure and disposition of data. DUSA-TE involvement extends to all CBRT&E activities regardless of Service affiliation or leadership.

E-6.17 Naval Surface Warfare Division Indian Head Explosive Ordnance Disposal Technology Division (NSWC IHEODTD)

Conduct research, development, test and evaluation, in-service support of Navy EOD explosive tools, robotics, and CREW systems, and CBR capabilities. Serves as the Developmental Test and Evaluation organization for Navy CBR capabilities. Executes other responsibilities as assigned by Commander, Naval Surface Warfare Center.

E-6.18 Commander, Naval Special Warfare Command (SPECWARCOM)

Type Commander and Operational Commander for Navy Special Warfare (NSW). Responsible for requirements generation and concurrence and clarification of requirements and OTA derived data requirements. Responsible for all NSW tactics, techniques and procedures as well as concept of operations and mission essential task lists.

E-7. OTHER ORGANIZATIONS

E-7.1 Assistant Secretary of the Navy (Research, Development and Acquisition)

Responsible for the research, development, and acquisition of Navy and Marine Corps platforms and warfare systems. Relevant to the COMOPTEVFOR mission, supporting the ASN (RDA) are:

- Principal Military Deputy - Principal military advisor to ASN (RDA) on all Navy and Marine Corps acquisition matters.

- Principal Civilian Deputy - Principal civilian advisor to ASN (RDA) on all Navy and Marine Corps acquisition matters.

- Deputy Assistant Secretary of the Navy (DASN) for Research Development Test and Evaluation (RDT&E) – principal advisor and policy coordinator for ASN (RDA) on all matters pertaining to Navy science, technology, advanced research and development programs; system prototype programs; and management of science and engineering. Via the DoN Chief Systems Engineer (CHSENG) provides engineering leadership and focus within the acquisition community to ensure the DoN delivers integrated and interoperable enterprise capabilities.

- DASN Ships - Principal advisor to ASN (RDA) on all matters pertaining to aircraft carriers, surface ships, and submarines, as well as associated weapon systems.

- DASN Air - Principal advisor to ASN(RDA) on all matters pertaining to aircraft, cruise missiles, air-launched weapons, airborne sensors, avionics, and support equipment.

- DASN Information Warfare and Enterprise Services (DASN IWAR) – principal advisor to ASN (RDA) for all matters related to C4I and space programs, enterprise information technologies, business systems, enterprise information technology services and related policies. Leading process, culture and architectural changes in support of a modern digital operating model, DASN IWAR provides acquisition program guidance, oversight and advocacy for PEO C4I & Space, PEO Digital and PEO MLB.

- DASN Acquisition Policy and Budget (DASN AP&B) – coordinates Acquisition Policy, to include Earned Value Management and Acquisition Reporting; Programming, Planning, Budgeting, and Execution (PPBE) and Congressional Affairs.

E-7.2 Center for Naval Analyses (CNA)

A FFRDC that provides analytical support to the Chief of Naval Operations, Fleet Commanders, as well as subordinate operational commanders. There is a CNA representative assigned as an advisor on the staff of COMOPTEVFOR. In addition, a second CNA representative supports the DOT&E-funded Interoperability and Cybersecurity Program at OPTEVFOR and other CNA representatives provide direct support to selected warfare divisions and squadrons.

E-7.3 Commander, U. S. Fleet Forces Command (USFF)

U. S. Fleet Forces Command supports both the Chief of Naval Operations and Combatant Commanders worldwide by providing naval forces ready-for-tasking. The command provides operational and planning support to Combatant Commanders and integrated warfighter capability requirements to the CNO.

- Additionally, U.S. Fleet Forces Command serves as the CNO's designated Executive Agent for Antiterrorism/Force Protection (ATFP), Individual Augmentees (IA), and Sea Basing.

- In collaboration with U.S. Pacific Fleet, USFF organizes, mans, trains, maintains, and equips Navy forces, develops and submits budgets, and executes readiness and personnel accounts to develop both required and sustainable levels of Fleet readiness. Additionally, the command serves as the unified voice for Fleet training requirements and policies.

- OPTEVFOR's engagement with the USFF staff is generally through the N8 staff. COMOPTEVFOR is the only outside commander to participate in the USFF Fleet Introduction Program assessment process.

- Together with the Commander, U.S. Pacific Fleet, the Commander, USFF nominates effects chains for evaluation during the Warfare Capability Baseline Assessments.

E-7.4 Under Secretary of Defense for Research and Engineering (USD(R&E))

Serves as the Principal Staff Assistant and advisor to the Secretary of Defense and Deputy Secretary of Defense for all research, engineering, and technology development activities and programs in the DoD. Per Section 133a, Title 10, U.S.C. and DoDD 3134.AB, the USD(R&E):

- Establishes policies and strategic guidance and leads defense research; engineering; developmental prototyping and experimentation; technology development, exploitation, transition, and transfer; DT&E; and manufacturing technology activities.

- Prepares Milestone B (MS B) and Milestone C (MS C) DT&E sufficiency assessments on those MDAPs where the Defense Acquisition Executive (DAE) is the milestone decision authority (MDA).

- Develops DT&E policy and ensures appropriate test facilities, test ranges, tools, and related modeling and simulation capabilities are maintained within the DoD.

- Serves as an advisor to the Joint Requirements Oversight Council on matters within USD(R&E) authority and expertise to inform and influence requirements, concepts, capabilities-based assessments, and concepts of operations.

- Approves the DT&E plans within TEMPs. Delegates approval authority, as appropriate.

- Develops governing policy and advances practices and workforce competencies for DT&E.

E-7.5 Director, Operational Test and Evaluation, Office of the Secretary of Defense (OSD/DOT&E)

The Director is a Senate-confirmed Presidential Appointee who serves as the principal staff assistant and senior advisor to the Secretary of Defense on OT&E in the DoD.

E-7.5.1 The Director

The DOT&E is responsible for issuing DoD OT&E policy and procedures; reviewing and analyzing the results of OT&E conducted for each major DoD acquisition program; providing independent assessments to Secretary of Defense, the Under Secretary of Defense for Acquisition and Sustainment (USD(A&S)), and Congress; making budgetary and financial recommendations to the Secretary regarding OT&E; and oversight to ensure OT&E for major DoD acquisition programs is adequate to confirm operational effectiveness and suitability of the defense system in combat use.

E-7.5.2 The Staff

The staff is led by a Principal Deputy (career SES) and is supported by four Deputy Directors and a Deputy for Live Fire Test and Evaluation as well as a Science Advisor.

E-7.5.3 Deputy Directors

The four Deputy Directors (Deputy Assistant Secretary of Defense equivalents) oversee the following areas:

- Air Warfare

- Land and Expeditionary Warfare (including land-based rotary-wing aviation),

- Naval Warfare (including Navy sea-based helicopters)

- Net-centric and Space Systems/Ballistic Missile Defense (includes Defense Business Systems)

E-7.5.4 Other Responsibilities

The DOT&E also manages several other efforts not directly related to his primary responsibilities. These include the Joint Test and Evaluation Program managed by the Deputy Director for Air Warfare and the Interoperability and CAP managed by the Deputy Director for Net-centric and Space Systems (see appendix C for additional information on these programs.)

E-7.6 Institute for Defense Analyses (IDA)

A FFRDC that provides analytical support to the Office of the Secretary of Defense. The Operational Evaluation Division provides analytical support to the Director, Operational Test and Evaluation.

E-7.7 Office of the Chief of Naval Operations

- N94/ONR - Director, Innovation, Technology Requirements, and T&E. Dual-hatted as the Director of the Office of Naval Research and the Navy's T&E Executive. Determines the requirements of Science and Technology (S&T), T&E. Establishes and promulgates Navy S&T and T&E requirements, issues policy, regulations, and procedures governing S&T and

T&E. Acts for CNO in resolving T&E requirements issues. Approves Test and Evaluation Strategies, Test and Evaluation Master Plans, and LFT&E Management Plans on behalf of the CNO.

- N942 - T&E Division of N94. Coordinates warfare T&E programs, C4I/AIS T&E programs, and T&E Modeling and Simulation.

- N9SP - Special Access Programs Coordinator. Responsible for management of the DoN Special Access Program (SAP) Central Office.

- N98 - Deputy CNO for Information Dominance. Responsible for functional integration of intelligence, information warfare, information/network management, oceanography, and geospatial information. Coordinates resource investments to deliver information-centric capabilities and competitive advantages.

- N2/6F - Director, Concepts, Strategies, and Integration. Serves as the Warfare Integration Directorate (resource sponsor) validating requirements and provisioning program of record systems across Navy equities in Communications and Networks (F1), ISR Capabilities (F2), Electronic and Cyber Warfare (F3), and Decision Superiority (F4).

- N9 - Deputy CNO for Warfare Systems. Responsible for optimizing Navy investments through centralized coordination of Navy warfighting and warfighting support analysis and assessments, Navy capability development and integration, joint and Navy requirements development, and resources programming.

- N9I – Responsible for warfare integration of the systems provided by N9 and N2/N6 resource sponsors.

- N95 - Resource sponsor for naval expeditionary warfare missions and programs. Mission areas include AMW, mine warfare, naval special warfare, expeditionary warfare (Explosive Ordnance Disposal (EOD), and maritime expeditionary security force/naval coastal warfare).

- N96 - Resource sponsor for surface combatants and command ships. Readiness, safety, survivability, training, and preparation for war for above surface forces.

- N97 - Resource sponsor for submarines, deep submergence systems, and undersea surveillance systems and preparation for war for below surface forces.

- N98 - Resource sponsor for aircraft carriers, specific aviation type ships, and naval aircraft, and preparation for war for naval air forces.

E-7.8 Expeditionary Warfare Development Center (EXWDC)

EXWDC is a warfighting development center under the administrative control of Commander, Naval Expeditionary Command. EXWDC provides training and subject matter expertise for antiterrorism/force protection, CON, expeditionary warfare, and irregular warfare.

E-7.9 Commander, U.S. Pacific Fleet (COMPACFLT)

The mission of COMPACFLT is to protect and defend the maritime interests of the United States in the Indo-Asia Pacific region. By providing combat-ready naval forces and operating forward in global areas of consequence, COMPACFLT enhances stability, promotes maritime security and freedom of the seas, defends the nation's homeland, deters aggression, and when necessary,

conducts decisive combat action against the enemy. COMPACFLT collaborates with Commander USFF to ensure optimum warfighting capacity and capability.

E-7.10 Joint Interoperability Test Command (JITC)

The JITC Operational Test and Evaluation (OT&E) Division (JT1) conducts operational testing of Information Technology and National Security Systems acquired by the Defense Information Systems Agency, other DoD organizations, and non-DoD entities to ensure operational effectiveness, suitability, and security. JITC conducts the test and collects the data. JITC then prepares an Operational Test and Evaluation Report (OTER), consistent with the test concept and plan, and provides a copy to the appropriate offices of the Component and to DOT&E.

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APPENDIX F - GLOSSARY

Acquisition Category (ACAT). Categories established to facilitate decentralized decision making and execution and compliance with statutorily imposed requirements. The categories determine the level of review, decision authority, and applicable procedures. ACAT I, ACAT II, ACAT III, and IV (ACAT IV is USN and USMC only)

Acquisition Program Baseline (APB). The PM initially develops the APB as a concept baseline for the Milestone A (MS-A) decision point. A development baseline and a production baseline are prepared for MS-B and -C. These baselines capture the threshold and objective values for the minimum number of cost, schedule, and performance attributes (called "key performance parameters") that describe the program over its life cycle. (CJCSM 3170. 01C)

Adjunct Tester. A person, not normally assigned to COMOPTEVFOR, who is appointed by COMOPTEVFOR to assist in test execution and/or data collection for a particular phase of test. Each adjunct tester will be required to execute the COMOPTEVFOR Adjunct Tester Form. The template is found with Test Plan templates.

Advanced Concept Technology Demonstration (ACTD). An ACTD (formerly a Joint Concept of Technology Demonstration (JCTD)) is a demonstration of the military utility of a significant new technology and an assessment to clearly establish operational utility and system integrity. (CJCSI 3170. 01G)

Advisory and Assistance Services. Technical support provided under contract by nongovernmental sources, with outputs that take the form of information, advice, opinions, alternatives, analyses, evaluations, recommendations, and training. (FAR 37.104)

Analytical Support. Support provided via military or civilian analysts, Navy laboratory or defense contractors to assist force personnel in data collection, reduction, and analysis in support of OT&E.

Analysis. A verification method involving the use of recognized analytic techniques (including computer models) to interpret or explain the behavior/performance of the system element. Analysis of test data or review and analysis of design data should be used as appropriate to verify requirements (Defense Acquisition Guidebook). See Verification.

Analysis of Alternatives (AOA). The evaluation of the performance, operational effectiveness, operational suitability, and estimated costs of alternative systems to meet a mission capability. The AoA assesses the advantages and disadvantages of alternatives being considered to satisfy capabilities, including the sensitivity of each alternative to possible changes in key assumptions or variables. The AoA is one of the key inputs to defining the system capabilities in the capability development document. (CJCSM 3170.01C)

Assessment of Operational Capability (AOC) – A brief report prepared after observing a DT phase or DT event(s) of an acquisition program to assess the operational capabilities of a System Under

Test (SUT) prior to introducing/releasing it for Fleet/operational use, and the Program has no future phase of Operational Test (OT) planned.

Application Software. Consists of the computer program, firmware, and associated data that implement the operational capabilities required for tactical weapon system employment; e.g., target tracking, navigation, avionics programs, and Built-In Test (BIT). A software change required because of changed system performance requirements or new or redesigned hardware shall be termed application vice support software.

Attribute. A quantitative or qualitative characteristic of an element or its actions. (CJCSM 3170.01C) For purposes of OT, "element," refers to the system under test.

Availability. A measure of the degree to which an item is in an operable and committable state at an unknown (random) point in time. (DAU Glossary) In OT&E, Operational Availability (A_o) is the usual measure. (See Operational Availability.)

Board of Inspection and Survey (INSURV) Responsibilities. INSURV is tasked with certain responsibilities relating to RDT&E and the acquisition process. When tasked by CNO, PRESINSURV will submit an individual technical assessment of readiness for OT&E to CNO and COMOPTEVFOR for all ships, craft, or ship installations at the ACAT I and II levels.

Capabilities-Based Test and Evaluation (CBTE). A SYSCOM process that incorporates COMOPTEVFOR's MBTD into DT and ST test plans, such that operationally relevant data is collected throughout the test program.

Capability Development Document (CDD). A document that captures the information necessary to develop a proposed program(s), normally using an evolutionary acquisition strategy. The CDD outlines an affordable increment of militarily useful, logistically supportable, and technically mature capability. The CDD supports a Milestone B decision review. The CDD format is contained in CJCSM 3170.01C. (DoD 5000.2 and CJCSI 3170.01G)

Capability Production Document (CPD). A document that addresses the production elements specific to a single increment of an acquisition program. The CPD defines an increment of militarily useful, logistically supportable, and technically mature capability that is ready for a production decision. The CPD must be validated and approved prior to a Milestone C decision review. The CPD format is in the JCIDS Manual, CJCSM 3170.01C. (DoD 5000.02 and CJCSI 3170.01G) OT&E shall determine the operational effectiveness and suitability of a system under realistic operational conditions, including combat; determine if thresholds in the approved CPD and COIs have been satisfied; and assess impacts to combat operations.

Capstone Test and Evaluation Master Plan (CTEMP). A TEMP which addresses the testing and evaluation of a defense system consisting of a collection of individual systems which function collectively to achieve the objectives of the defense system. Individual system-unique content requirements are addressed in an annex to the basic CTEMP. (DAU Glossary)

Combined Developmental Testing (DT) and OT. Used to save time and reduce costs; must be configured to meet operational capabilities/functions and developmental test objectives; must be

covered by an MOA; and must be followed by an appropriate final period of testing which will emphasize appropriate separate OT before a MS-C decision.

Commercial Off-the-Shelf (COTS) Items. Use of COTS items offers significant opportunities for reduced development time, faster insertion of new technology, and lower life-cycle costs, owing to a more robust industrial base.

COMOPTEVFOR. Commander, Operational and Test Evaluation Force. This acronym should be used to represent the Commander. (Note: The acronym OPTEVFOR should be used in reference to COMOPTEVFOR's staff.)

Compatibility. The capability of two or more items or components of equipment or material to exist or function in the same system or environment without mutual interference. (DAU Glossary) Compatibility includes physical, functional, electrical and electronic, and environmental issues.

Computer Resources. The totality of computer hardware, firmware, software, personnel, documentation, supplies, services, and support services applied to a given effort.

Computer Software (or Software). A combination of associated computer instructions and computer data definitions required to enable the computer hardware to perform computational or control functions.

Computer Software Documentation. Technical data or information, including computer listings and printouts, which documents the requirements, design, or details of computer software; explains the capabilities and limitations of the software; or provides operation instructions for using or supporting computer software during the software's operational life.

Concurrent Testing. A form of combined DT/OT in which test events are generally broken into separate DT and OT events. Concurrent testing consists of DT and OT testers on a ship, conducting separate and distinct test scenarios, some for DT, some for OT.

Condition. Variables of the environment that affect the performance of subtasks in the context of the assigned mission. They are categorized by conditions of the physical environment (e. g., sea state, terrain, or weather), military environment (e.g., forces assigned, threat, command relationships), and civil environment (e.g., political, cultural, and economic factors). (OPNAVINST 3500.38B)

Contracting Officer Technical Representative (COTR). Personnel nominated by COMOPTEVFOR and appointed in writing by the contracting officer and designated in the contract, who provide technical direction/clarification and guidance with respect to the contract specifications or SOW. The term COR is now used interchangeably with COTR.

Criteria. The element of a standard that defines acceptable levels of performance. (OPNAVINST 3500.38B)

Critical Intelligence Parameters (CIP). CIPs are those key performance thresholds of foreign threat systems, which, if exceeded could compromise the mission effectiveness of the U.S. system in development. CIPs, and their accompanying production requirements, will be included in the

System Threat Assessment Report (STAR) unless DIA's Acquisition Support Division in the Defense Warning Office (DWO-3), the Threat Steering Group, and the program office agree that CIPs are not required. If a CIP is breached, the responsible intelligence production center will notify the program office and DIA/DWO-3 per DIA Instruction 5000.002. DIA/DWO-3 will notify the appropriate organizations in the Office of the Secretary of Defense. (Defense Acquisition Guidebook) CIPs are expressed in terms of a potential adversary's quantity, type, force mix, and system capabilities for actual and projected specific threats.

Critical Operational Issues (COI). A key Operational Effectiveness (OE) and/or Operational Suitability (OS) issue (not a parameter, objective, or threshold) that must be examined in OT&E to determine the system's capability to perform its mission. A COI is normally phrased as a question that must be answered in order to properly evaluate OE or OS. (DAU Glossary)

Critical Safety Item. A part, assembly, installation or production system with one or more critical safety characteristics that, if missing or not conforming to the design data, quality requirements, or overhaul and maintenance documentation, would result in an unsafe condition.

Current Threat. The threat which has been fielded or is assessed to be currently available.

Cybersecurity. Prevention of damage to, protection of, and restoration of computers, electronic communications systems, electronic communications services, wire communication, and electronic communication, including information contained therein, to ensure its availability, integrity, authentication, confidentiality, and nonrepudiation.

Cyber Survivability. A system's capability to survive and operate after exposure to cyber threats which attempt to prevent the completion of operational mission(s) by destruction, corruption, denial, or exposure of data transmitted, processed, or stored.

Defense Acquisition Board (DAB). The senior DoD acquisition review board for ACAT 1D and selected ACAT IAM programs, chaired by the Under Secretary of Defense for Acquisition. The Vice Chairman of the Joint Chiefs of Staff is the Vice-Chair. Other members of the board are: the Deputy Under Secretary of Defense for Acquisition; service acquisition executives of the Army, Navy, and Air Force; the Director of Defense Research and Engineering; the Assistant Secretary of Defense for Program Analysis and Evaluation; the Comptroller of the Department of Defense; the Director of Operational Test and Evaluation; the appropriate DAB Chair; and the Defense Acquisition Board Executive Secretary. Other persons may attend at the invitation of the chair. (See DoD Directive 5000.49, Defense Acquisition Board.)

Deferrals. The term "Deferrals" applies to a delay in testing requirements directed by the resource sponsor. A deferral moves a testing requirement from one test period to a later period. Deferred items cannot be used in the analysis to resolve COIs; however, the OTA may comment on operational considerations in the appropriate sections of the test report. A deferral does not change the requirement to test a system capability, function, or mission, only the timeframe in which it is evaluated. Also see Waivers. (SECNAVINST 5000.2F)

Deficiency. Operational need minus existing and planned capability. The degree of inability to successfully accomplish one or more mission tasks or functions required to achieve mission or

mission area objectives. Deficiencies might arise from changing mission objectives, opposing threat systems, changes in the environment, obsolescence, or depreciation in current military assets. (DAU Glossary)

Demonstration. A verification method involving the performance of operations at the system or system element level where visual observations are the primary means of verification. Demonstration is used when quantitative assurance is not required for verification of the requirements (Defense Acquisition Guidebook). See Verification.

Derived Measure. Any requirement not clearly stated in the system's capabilities document that is necessary for the effective delivery of the system under test capability as defined in the capabilities document, or are derived from:
1. Concept of Operation
2. Office of the Secretary of Defense/Joint Chiefs of Staff/Secretary of the Navy/Office of the Chief of Naval Operations instructions
3. Threat documents
4. System under test specifications
5. System Stakeholders agreed upon capability/function to be delivered (Navy Sponsor's intent for funded capability). (COMOPTEVFOR derived definition)

Developing Agency (DA). The agency or command responsible for system design and development, and accomplishment of DT&E to verify attainment of technical performance specifications and objectives. The DA is usually a SYSCOM/PEO. (DAU Glossary)

Developmental Test and Evaluation (DT&E). Any engineering-type test used to verify status of technical progress, verify that design risks are minimized, substantiate achievement of contract technical performance, and certify readiness for initial Operational Testing (OT). Development tests generally require instrumentation and measurements and are accomplished by engineers, technicians, or soldier operator-maintainer test personnel in a controlled environment to facilitate failure analysis. (DAU Glossary)

Direct Liaison Authorized (DIRLAUTH). That authority granted by a commander (any level) to a subordinate to directly consult or coordinate an action with a command or agency within or outside of the granting command. DIRLAUTH is more applicable to planning than operations and always carries with it the requirement of keeping the commander granting DIRLAUTH informed. DIRLAUTH is a coordination relationship, not an authority through which command may be exercised.

Director, Operational Test and Evaluation (DOT&E). According to DoD Directive 5000.1, DOT&E is the principle advisor to the Secretary of Defense on DoD OT&E matters.

Discrepancy Reporting. The lead OT&E agency is responsible for ensuring a system is established to track discrepancies and to provide periodic status reports to participating OT&E agencies. Control of promulgation of such reports should be included in an MOA between the participating OT&E agencies. An example of another agency's reporting is the service reports that can be issued by any Air Force organization.

Documentation. Documents used to determine suitability, e.g., operator and maintenance instructions, repair parts lists, support manuals, and manuals related to computer programs and system software. (DAU Glossary)

DT Assist. Similar to an early phase of combined DT/OT, but with a predominantly DT flavor. OTDs take an active role in the DT effort. DT Assists are not assigned an OT number and are not a formal phase of OT. See paragraph C-6.3 for detailed information.

Early Operational Assessment (EOA). An Operational Assessment (OA) conducted early in an acquisition program (prior to, or in support of, MS-B), often on subsystems and early prototype equipment, to forecast and assess the risk to successful completion of the IOT&E. EOAs also assist in determining any system-unique test assets for future developmental and operational tests. (DAU Glossary) (See Operational Assessment.)

Evaluation Report. One of the two products of OT&E (the other possible product is the OPTEVFOR Tactics Guide).

Evolutionary Acquisition (EA). The preferred DoD strategy for rapid acquisition of mature technology for the user. An evolutionary approach delivers capability in increments, recognizing up front the need for future capability improvements. Each increment is a militarily useful and supportable operational capability that can be developed, produced, deployed, and sustained. Block upgrades, pre-planned product improvements, and similar efforts that provide a significant increase in operational capability and meet an acquisition category threshold as specified by DoDI 5000.02 are managed as separate increments. (DoDI 5000.02)

Examination. A verification method involving visual inspection of equipment and evaluation of drawings and other pertinent design data and processes should be used to verify conformance with characteristics such as physical, material, part, and product marking and workmanship (Defense Acquisition Guidebook). See Verification.

Exit Criteria. Program-specific accomplishments that must be satisfactorily demonstrated before a program can progress further in the current acquisition phase or transition to the next acquisition phase. (DAU Glossary) Exit criteria may include such factors as critical test issues, the attainment of projected growth curves and baseline parameters, and the results of risk reduction efforts deemed critical to the decision to proceed further. Exit criteria supplement minimum required accomplishments and are specific to each acquisition phase.

Failure (Reliability). The malfunction or inoperable state of a previously operable system or part of a system; reliability failures exclude damage caused by careless or improper operation or operation outside the environment for which it was designed.

Fleet Operators. In the context of this manual, Fleet operators refers to Sailors, Marines, Soldiers, and/or Airmen, to include the U.S. Coast Guard.

Fleet-Releasable Software. Software for which OT&E results confirm that all significant design problems have been identified, that solutions to these problems are available, and that the software

actually tested is effective and suitable for its intended use and meets operational requirements. This term is reserved for use by CNO following successful OT&E.

Fleet Services. These are used to plan and program not only Fleet support, but also financial support, ranges, targets, simulators, and other required support.

Follow-on Operational Test and Evaluation (FOT&E). The Test and Evaluation (T&E) that may be necessary after the Full Rate Production Decision Review (FRPDR) to refine the estimates made during Operational Test and Evaluation (OT&E), to evaluate changes, and to reevaluate the system to ensure that it continues to meet operational needs and retains its effectiveness in a new environment or against a new threat. (DAU Glossary)

Foreign Weapons Evaluation (FWE). FWE evaluates foreign weapons systems, equipment, and technologies that have the potential to satisfy a specific U.S. requirement. FWE applies to any system, subsystem, or component purchased from a friendly or neutral country which is available for procurement by the U.S.

Full Mission Capable (FMC). Material condition of any piece of military equipment, aircraft, or training device indicating that it can perform all of its missions. (JP 1-02)

Full Rate Production and Deployment (FRP&D). Continuation into full-rate production results from a successful Full-Rate Production (or Full Deployment) Decision Review by the MDA. The decision to proceed into Full-Rate Production will be documented in an acquisition decision memorandum (ADM). This effort delivers the fully funded quantity of systems and supporting materiel and services for the program or increment to the users. During this effort, units will typically attain Initial Operational Capability (IOC). As technology, software, and threats change, FOT&E shall be considered to assess current mission performance and inform operational users during the development of new capability requirements. (DoDI 5000.02)

Full Rate Production Decision (FRPD). The decision to enter into full rate production for the system.

Full Rate Production Decision Review (FRPDR). A review normally conducted at the conclusion of Low Rate Initial Production (LRIP) effort that authorizes entry into the Full Rate Production (FRP) and Deployment effort of the Production and Deployment phase of the Defense Acquisition Management Framework. (DAU Glossary)

Human Factors. A body of scientific facts about human characteristics. The term covers all biomedical and psychosocial considerations. It includes, but is not limited to, principles and applications in the areas of human engineering, personnel selection, training, life support, job performance aids, and human performance evaluations (DoD 5000.2). OT includes examination of those elements of system operation and maintenance which influence the efficiency with which people can use systems to accomplish the operational mission of the system (e.g., arrangement of controls and displays), the work environment (e.g., room layout, noise level, temperature, lighting, etc.), the task (e.g., length and complexity of operating procedures), and personnel (e.g., capabilities of operators and maintainers).

Human Factors Engineering. The systematic application of relevant information about human abilities, characteristics, behavior, motivation, and performance to provide for effective human-machine interfaces and to meet Human System Integration (HSI) requirements. Where practicable and cost effective, system designs should minimize or eliminate system characteristics that require excessive cognitive, physical, or sensory skills; entail extensive training or workload-intensive tasks; result in mission-critical errors; or produce safety or health hazards. (DoDI 5000.02)

Incremental Development. In this process, a desired capability is identified, an end-state requirement is known, and that requirement is met over time by developing several increments, each dependent on available mature technology. Incremental development relies heavily on prototyping, both physical and functional, to get stakeholder feedback and reduce risk. See Evolutionary Acquisition. (DAU Glossary and Defense Acquisition Guidebook)

Initial Capability Technical Baseline. This is a multi-tier product providing the following:

- ICTB 1 – Describes a CONEMP designed to provide an effect described in an MTB.

- ICTB 2 – Defines the SYSCOM contributions to the scenario detailed in ICTB 1.

- ICTB 3 – Links system/platform specific requirements to the SOS mission level capabilities in ICTB 2. The ICTB 3 integrated architecture describes the technical approaches and agreements made between individual programs.

Initial Capabilities Document (ICD). Representatives from multiple DoD communities shall assist in formulating broad, time-phased, operational goals, and describing requisite capabilities in the ICD. Programs that enter the acquisition process at MS-B shall have an ICD that provides the context in which the capability was determined and approved, and a CDD that describes specific program requirements. Projects that undergo a MS-A decision shall have a T&E strategy that primarily addresses M&S, including identifying and managing the associated risk, and that evaluates system concepts against mission requirements. Pre-MS-A projects shall rely on the ICD as the basis for the evaluation strategy.

Initial Operational Capability (IOC). The first attainment of the capability to employ, effectively, a weapon, item of equipment, or system of approved specific characteristics, that is manned or operated by an adequately trained, equipped, and supported military unit or force. (JP 1-02)

Initial Operational Test and Evaluation (IOT&E). Dedicated Operational Test and Evaluation (OT&E) conducted on production, or production representative articles, to determine whether systems are operationally effective and suitable to support a Full Rate Production (FRP) decision. (DAU Glossary)

Integrated Evaluation Framework. The IEF is the primary document for defining adequate OT, and for integrating the OT requirements with DT and CT requirements to form an IT matrix. It defines the OT objectives and the requirements for resolution of each COI, as well as the OTD's minimum IOT&E requirements.

Integrated Program Summary (IPS). A DoD component document prepared and submitted to the MDA in support of MS-A, -B, -C, and -D reviews. It concisely highlights the status of a program and its readiness to proceed into the next phase of the acquisition cycle.

Integrated Testing (IT). IT is the collaborative planning and collaborative execution of test phases and events to provide shared data in support of independent analysis, evaluation, and reporting by all stakeholders, particularly the developmental (both contractor and government) and operational test and evaluation communities. (OSD memo, dated 25 April 2008) IT is not an event or separate test phase, nor is it a new type of test. IT is a process intended to result in resource efficiencies (time, money, people, and assets) and an enhanced data set for separate evaluations. For example, the data from an IT could be used by the contractor for design improvements, by the developmental evaluators for risk assessments, and the operational evaluators for operational assessments. However, IT does not replace or eliminate the need for dedicated Initial Operational Test and Evaluation required by 10 USC 2399, "Operational Test and Evaluation of Defense Acquisition Programs" and DoD Instruction 5000.02.

Intelligence Production Requirement (IPR). An IPR may be initiated by a user whenever there is a perceived data gap. It may cover current, midterm, or long range intelligence requirements which cannot be wholly satisfied by the resources of the requester.

Interoperability. The ability of systems, units, or forces to provide data, information, materiel, and services to and accept the same from other systems, units, or forces and to use the data, information, materiel, and services so exchanged to enable them to operate effectively together. National Security System (NSS) and Information Technology System (ITS) interoperability includes both the technical exchange of information and the operational effectiveness of that exchanged information as required for mission accomplishment. (CJCSI 6212.01F).

IT Integration. IT blends or combines contractor, developmental, and operational testing to form a cohesive testing continuum. This integration cannot occur unless the participants (CT, DT, and OT) have determined their entering requirements for adequate testing of the system under evaluation. IT does not remove or combine any of OPTEVFOR's current or future requirements for reporting based on a separate (OPTEVFOR) analysis of the shared test information produced by the IT effort.

Joint Interoperability. Joint Interoperability is an effectiveness measure that examines the use of systems which must exchange information or services with non-Navy systems and platforms; that is, Army or Air Force and in some cases, Marines or Coast Guard. For instance, in designing a test for a submarine antenna, the capability of the antenna to assist the platform in communicating with Army helicopters, USAF aircraft and satellites, and a Marine unit might need to be examined.

Joint Test and Evaluation (JT&E) Program. An OSD program that is structured to evaluate or provide information on system performance, technical concepts, system requirements or improvements, and system interoperability; to improve or develop test methodologies; or for force structure planning, doctrine or procedures.

Key Performance Parameters (KPP). Those system requirements designated by the resource sponsor as critical or essential to the development of an effective military capability and that make

a significant contribution to the characteristics of the future joint force as defined in the Capstone Concept for Joint Operations. KPPs must be testable to enable feedback from test and evaluation efforts to the requirements process. KPPs are validated by the Joint Requirement Oversight Council (JROC) for JROC Interest documents, by the JCB for JCB Interest documents, and by the DoD component for Joint Integration, Joint Information, or Independent documents. CDD and CPD KPPs are included verbatim in the APB. (CJCSI 3170.01 series)

Key System Attributes (KSA). A system requirement considered crucial in support of achieving a balanced solution/approach to a KPP or some other key performance attribute deemed necessary by the sponsor. KSAs provide decision makers with an additional level of capability performance characteristics below the KPP level and require a sponsor 4-star, Defense agency commander or Principal Staff Assistant to change. (CJCSI 3170.01 series)

Land-Based Test Sites (LBTS). An LBTS is a facility that duplicates, simulates, or stimulates the employment of a system's planned operational installation and use for the purpose of conducting DT. (Navy) (DAU Glossary)

Lead Component/Service. The DoD Component responsible for management of a system acquisition involving two or more DoD Components in a joint program. (DAU Glossary)

Lethality. The probability that a weapon will destroy or neutralize a target. (DAU Glossary)

Level of Effort (LOE). Effort of a general or supportive nature which does not produce definite end products or results, i.e., contract for man-hours.

Level of Repair Analysis (LORA). A trade study conducted by a contractor as part of the system/equipment engineering analysis process. A basis on which to evolve an optimum approach to repair recommendations concurrent with the design and development process. Also referred to as Optimum Repair Level Analysis (ORLA) or Level of Repair Analysis (LOR/A). (DAU Glossary)

Level of Test Determination (LTD). Replaced RALOT in March, 2020. The process by which COMOPTEVFOR determines the level of OT involvement in a program going forward. This may apply to an ACAT-IV program that may or may not require OT, or a program that is past IOT&E that may or may not require FOT&E. Other applications of LTD are also likely to arise.

Life Cycle Costs (LCC). The total cost to the government of acquisition and ownership of that system over its useful life. It includes the cost of development, acquisition, operations, and support (to include manpower), and where applicable, disposal. For defense systems, LCC is also called Total Ownership Cost (TOC). (DAU Glossary)

Likert Scale. The most widely used scale in survey research. When responding to a Likert questionnaire item, respondents specify their level of agreement to a statement. Further detail is provided in the OT Analysis Handbook.

Live-Fire Test and Evaluation (LFT&E). LFT is conducted to provide a timely and thorough assessment of the vulnerability and lethality of a conventional weapon or conventional weapon system as it progresses through its development and subsequent production phases. The primary

emphasis of LFT is on realistic testing as a source of personnel casualty, vulnerability, and lethality information, taking into account the susceptibility to attack and combat performance of the system. LFT will include, when feasible, the firing of threat munitions (or surrogates) at operational, combat-loaded U.S. weapon systems to test their vulnerability; and/or the firing of U.S. munitions or missiles against operational, combat-loaded threat targets (or surrogates) to test the lethality of those munitions or missiles. (Derived from DAU Glossary)

Live-Fire Test and Evaluation Report

1. Report prepared by the Director, Operational Test and Evaluation (DOT&E) on survivability and lethality testing. Submitted to the Congress for covered systems prior to the decision to proceed beyond Low Rate Initial Production (LRIP). Prepared within 45 days of receiving the Component LFT&E Report.

2. Report prepared by the Component on the results of survivability and lethality testing. (Defense Acquisition Guidebook)

Logistic Supportability. The degree of ease to which system design characteristics and planned logistics resources (including the Logistics Support (LS) elements) allow for the meeting of system availability and wartime usage requirements. (DAU Glossary)

Logistic Support (LS) Elements. A traditional group of items, that taken together constitutes LS. These include: maintenance planning; Manpower and Personnel (M&P); supply support; support equipment; Technical Data (TD); training and training support; computer resources support; facilities; Packaging, Handling, Storage, and Transportation (PHST); and, design interface. (DAU Glossary)

Low Rate Initial Production (LRIP). The first effort of the Production and Deployment (P&D) phase. This effort is intended to result in completion of manufacturing development in order to ensure adequate and efficient manufacturing capability and to produce the minimum quantity necessary to provide production or production-representative articles for IOT&E; establish an initial production base for the system; and permit an orderly increase in the production rate for the system, sufficient to lead to full-rate production upon successful completion of operational (and live-fire, where applicable) testing. (DoDI 5000.02 and DAG)

Maintainability. The ability of an item to be retained in, or restored to, a specified condition when maintenance is performed by personnel having specified skill levels, using prescribed procedures and resources, at each prescribed level of maintenance and repair. (DAU Glossary) MTFL, MCMTOMF, and Maintenance Ratio (MR) are frequently calculated in maintainability evaluations.

Major Deficiency. An operational mission failure or software fault (precludes successful completion of a mission and no acceptable work-around is known). If occurring in sufficient numbers during testing, can lead to an unresolved/split resolution or UNSAT resolution of a COI. Conversely, only one major deficiency occurring may not lower the result to below a stated threshold, meaning that the COI is still resolved as SAT.

Material Support Date (MSD). The date when all necessary supply support of the system or equipment is furnished. Supply support includes allowance quantities stocked in the supply system or furnished directly to the end-user.

Matrix. The arrangement of specific elements into rows and columns to indicate interdependence or correlation.

Mean Corrective Maintenance Time for Operational Mission Failures (MCMTOMF). Normally computed as part of Test S-2, MCMTOMF is the average time required to perform active corrective maintenance. Corrective maintenance is the time during which one or more personnel are repairing an operational mission failure and includes: preparation, fault location, part procurement from local (onboard) sources, fault correction, adjustment and calibration, and follow-up checkout times. It excludes off-board logistic delay time.

Mean Time to Fault Locate (MTFL). The total fault location time divided by the number of critical failures. Frequently computed as part of Test S-2, Maintainability.

Measure. The element of a standard that provides the basis for describing varying levels of task performance.

Measure of Effectiveness (MOE). The data used to measure the military effect (mission accomplishment) that comes from the use of the system in its expected environment. That environment includes the SUT and all interrelated systems, that is, the planned or expected environment in terms of weapons, sensors, Command and Control (C2), and platforms, as appropriate, needed to accomplish an end-to-end mission in combat. (DAU Glossary) In MBTD, MOEs are measures traced to effectiveness COIs or subtasks of effectiveness COIs.

Measure of Suitability (MOS). Measure of an item's capability to be supported in its intended operational environment. MOSs typically relate to readiness or operational availability, and hence reliability, maintainability, and the item's support structure. (DAU Glossary) In MBTD, MOSs are measures traced to suitability COIs or subtasks of suitability COIs.

Milestone A Decision. The decision to establish a new acquisition program and establish a concept baseline containing initial program cost, schedule, and program objectives. Approves entry into the Technology Development (TD) phase of acquisition.

Milestone B Decision. The decision to begin the Engineering and Manufacturing Development (EMD) phase of acquisition.

Milestone C Decision. The decision to begin the Production and Deployment (P&D) phase of acquisition.

Militarily Useful Capability. A capability that achieves military objectives through operational effectiveness, suitability, and availability, which is interoperable with related systems and processes, transportable and sustainable when and where needed, and at costs known to be affordable over the long term. (CJCSM 3170.01C)

Minor Deficiency. A deficiency that affects system performance, but does not impact the ability to perform the mission. Usually requires only a minor workaround to continue testing.

Mission. The task, together with the purpose, that clearly indicates the action to be taken and the reason therefore. (JP 1-02)

Mission Analysis. The mission analysis is a combined effort between OPTEVFOR and the program representatives (T&E IPT), and should include other participants such as the Fleet Forces Command (N8) representative, and operational user representatives. Other SMEs may be included to ensure this evolution is completed correctly. These SMEs might include center of excellence representatives.

Mission-Based Test Design (MBTD). MBTD is COMOPTEVFOR's primary test planning methodology.

Mission Capability by Primary Mission Area (MC$_{MA}$). The percentage of time the test aircraft is capable of performing a specified mission.

Mission Critical System. A system whose Operational Effectiveness (OE) and Operational Suitability (OS) are essential to successful completion or to aggregate residual combat capability. If this system fails, the mission likely will not be completed. Such a system can be an auxiliary or supporting system, as well as a primary mission system. (DAU Glossary)

Mission Need Statement (MNS). A statement of operational capability required to perform an assigned mission or to correct a deficiency in existing capability to perform the mission. (Replaced by the Initial Capabilities Document (ICD))

Mission Reliability. See Reliability.

Mission Technical Baseline (MTB). SYSCOMs develop and maintain these documents in coordination with Fleet Forces, OPNAV, and COMOPTEVFOR. MTBs consist of a scenario summary, commander's intent, tactical situation with associated targets, desired effects, controlling threat baseline, integrated architecture, and requirements document.

Model. A model is a representation of an actual or conceptual system that involves mathematics, logical expressions, or computer simulations that can be used to predict how the system might perform or survive under various conditions or in a range of hostile environments.

Modeling and Simulation (M&S). DoD directives encourage the use of M&S to assist in projecting operational effectiveness and operational suitability prior to MS-B, but limit its use in subsequent OT&E to that of supplementing OT&E test data. Because of the increased emphasis on the use of simulation in early OT&E, the OTD must give careful consideration to requirements for the use of threat simulation.

Multiservice T&E. T&E conducted by two or more DoD Components for systems to be acquired by more than one DoD Component, or for a DoD Component's systems that have interfaces with equipment of another DoD Component. (DAU Glossary)

NATO Comparative Test Program (CTP). NATO CTPs evaluate foreign weapons systems, equipment, and technologies that have the potential to satisfy a specific U.S. requirement. NATO CTP applies only to items of NATO origin. (See Foreign Comparative Testing (FCT) (DAU Glossary)

Net-Ready Key Performance Parameter (NR-KPP). The NR-KPP assesses information needs, information timeliness, cybersecurity, and net-ready attributes required for both the technical exchange of information and the end-to-end operational effectiveness of that exchange. The NR-KPP consists of measurable and testable characteristics and/or performance metrics required for the timely, accurate, and complete exchange and use of information to satisfy information needs for a given capability. The NR-KPP is comprised of the following attributes:

1. IT must be able to support military operations.
2. IT must be able to be entered and managed on the network.
3. IT must effectively exchange information.

(See CJCSM 3170.01C and CJCSI 6212.01F for amplifying information)

Non-developmental Item (NDI).

1. Any previously developed item of supply used exclusively for government purposes by a Federal Agency, a State or local government, or a foreign government with which the United States has a mutual defense cooperation agreement.
2. Any item described in paragraph 1 that requires only minor modifications or modifications of the type customarily available in the commercial marketplace in order to meet the requirements of the procuring department or agency.
3. Any item of supply being produced that does not meet the requirements of paragraphs 1 or 2 solely because the item is not yet in use. (FAR 2.101) See Commercial Off-the-Shelf (COTS).

Notice of Intent (NOI). An NOI reserves a submerged operating area and establishes procedures that will minimize mutual interference between submerged submarines, and between submarines and other operations, such as surface ships, using variable depth sonar or dropping of explosive ordnance. (COMSECONDFLT OPORD 2000)

Operational Assessment (OA). A risk assessment for successful completion of IOT&E made by an independent operational test activity, with user support as required, on other than production systems. An OA is a test event that is conducted before initial production units are available and which incorporates substantial operational realism. The focus of an OA is on significant trends noted in development efforts, programmatic voids, areas of risk, adequacy of requirements, and the capability of the program to support adequate OT. An OA is conducted when there is enough system maturity to conduct an operational test and may use technology demonstrators, prototypes, or Engineering Development Models, if those articles can be placed in an operational context and risk to IOT&E can be adequately assessed. An OA will not substitute for the IOT&E necessary to support FRPDs. Normally conducted prior to, or in support of, Milestone C.

Operational Availability (A_o). (See Availability for basic definition.) A_o is computed and reported as follows:

- For continuous-use system, operational availability shall be designated A_o and shall be determined as the ratio of system "uptime" to system "uptime plus downtime."

- For "on-demand" systems, operational availability shall be designated A_{od} and shall be determined as the ratio of the "number of times the system was available to perform as required" to the "total number of times its performance was required." (Note: "Total number of times its performance was required" shall be the number of times attempted and the number of times it was operationally demanded, but not attempted because the system was known to be inoperable.)

Operational Consideration (OPCON). A type of OT deficiency or issue used in OT reports to document tactical considerations which inform operational commanders of significant aspects (pro and con) of system employment, or make clear what special measures would be required to make the system more efficient in battle.

Operational Effectiveness. The overall degree of mission accomplishment of a system when used by representative personnel in the environment planned, or expected (e.g., natural, electronic, threat etc.), for operational employment of the system, considering organization, doctrine, tactics, supportability, survivability, vulnerability, and threat (including countermeasures, initial nuclear weapons effects, and NBCC threats). (DAU Glossary and CJCSM 3170.01C)

Operational Evaluation (OPEVAL). Term formerly used for IOT&E. OPEVAL can be used as a generic term to refer to the conglomerate OT&E processes across an acquisition cycle.

Operational Mission Failure (Reliability). A hardware failure or software fault that precludes successful completion of a mission, and must be specifically defined for each system.

Operational Mission Software Fault (Reliability). A software fault that precludes successful completion of a mission, and must be specifically defined for each system.

Operational Requirements. User- or user representative-generated validated needs developed to address mission area deficiencies, evolving threats, emerging technologies, or weapon system cost improvements. Operational performance requirements from the Capability Development Document (CDD) and Capability Production Document (CPD) form the foundation for weapon system technical specifications and contract requirements. (DAU Glossary)

Operational Requirements Document (ORD). With the implementation of the JCIDS process (2003), the ORD was replaced by the CDD and CPD. Many acquisition programs are grandfathered and will continue to use an ORD for system requirements for OT&E.

Operational Suitability. The degree to which a system can be placed and sustained satisfactorily in field use with consideration being given to availability, compatibility, transportability, interoperability, reliability, wartime usage rates, maintainability, safety, human factors, habitability, manpower, logistics supportability, natural environmental effects and impacts, documentation, and training requirements. (CJCSM 3170.01C)

Operational Test and Evaluation (OT&E). The field test, under realistic conditions, of any item (or key component) of weapons, equipment, or munitions for the purpose of determining the

effectiveness and suitability of the weapons, equipment, or munitions for use in combat by typical military users; and the evaluation of the results of such tests. (DAU Glossary)

Operational Utility Assessment (OUA) Report. The OUA report describes how a Joint Capability Technology Demonstration's (JCTD's) products affect the resolution of an Operational Problem (OP) and fulfill operational Desired Capabilities (DC). It declares the level of operational utility according to the Concept of Operations (CONOPs) and TTPs and provides post-JCTD transition, CONOPs and TTP and DOTMLPF-P recommendations. The OUA report and applicable Initial Capabilities Document (ICD) [if required in lieu of OUA Report] and /or Capability Development Document (CDD) are needed to meet the requirements of the Joint Staff JCIDS process. Referred to as a "Military Utility Assessment (MUA)" by the JCIDS Manual. See Military Utility Assessment (MUA). (DAU Glossary)

Operations Security (OPSEC). OPSEC, as it relates to COMOPTEVFOR testing, may be defined as the identification and protection of a broad spectrum of classified and open-source information that collectively reveals current and future U.S. military capabilities, plans, and operational procedures. In this respect, it encompasses and relates to other security programs such as signal security, physical security, automated data processing, and operational deception.

OTD Journal. The OTD journal records, for possible later use, data that the OTD hadn't considered when developing the data or survey sheets, and may be of significance in the program. While each OTD must use his own judgment when deciding what is significant, it is better to record too much data rather than too little. And, it is better to record it as soon as an event occurs, rather than to wait until later and risk forgetting.

Operational Test Readiness Review (OTRR). A multi-disciplined product and process assessment to ensure that the production configuration system can proceed into Initial Operational Test and Evaluation (IOT&E) with a high probability of success. More than one OTRR may be conducted prior to IOT&E. (Defense Acquisition Guidebook)

OPTEVFOR. The acronym used in reference to COMOPTEVFOR's staff.

Program Executive Officer (PEO). A military or civilian official who has responsibility for directing several Major Defense Acquisition Programs (MDAPs) and for assigned major system and non-major system acquisition programs. A PEO normally has no other command or staff responsibilities within the Component, and only reports to and receives guidance and direction from the DoD CAE. (DAU Glossary)

Program Manager (PM). Designated individual (military or civilian) with responsibility for and authority to accomplish program objectives for development, production, and sustainment to meet the user's operational needs. The PM shall be accountable for credible cost, schedule, and performance reporting to the Milestone Decision Authority (MDA). (DoDD 5000.1)

Projected Threat. A best estimate based on historical trends data, evidence of continuing research and development, postulated military requirements, technological capabilities, and the best intelligence available. This threat consists of the weapon systems and characteristics that an

adversary can be expected to develop and deploy during the specified period. See Validated Online Lifecycle Threat (VOLT) Report

Quick Reaction Assessment (QRA) (USN and USMC only). A QRA is a quick assessment that examines specific operational considerations and capabilities of a system. Used when operational necessity dictates deploying a rapid capability in the Fleet. A QRA will not be used to resolve COIs.

Reliability. The probability that a system will perform its required functions without failure (see failure) understated conditions for a stated period of time. In OT&E, reliability is usually reported in one of two ways:

- Mission Reliability (R). For equipment operated only during a relatively short duration mission (as opposed to equipment operated more or less continuously), the probability of completing the mission without an operational mission failure.

- Mean Time Between Operational Mission Failures (MTBOMF). For more or less continuously operated equipment or systems. MTBOMF measures reliability as it relates to the overall mission of the equipment or system being tested and is the total operating time divided by the number of operational mission failures. MTBOMF is the figure used in the calculation of overall mission Reliability (R). MTBOMF is sometimes modified to Mean Flight Hours Between Operational Mission Failures (MFHBOMF).

Resource Sponsor. See Sponsor.

Research, Development, Test, and Evaluation (RDT&E). See NAVSO P-2457 (RDT&E Management Guide).

Research Laboratories. Laboratories available to provide analytical support to COMOPTEVFOR in the OT&E of assigned CNO projects.

Requirement (Military Requirement or Operational Requirement). An established need justifying the timely allocation of resources to achieve a capability to accomplish approved military objectives, missions, or tasks. (JP 1-02) The need or demand for personnel, equipment, facilities, other resources, or services, by specified quantities for specific periods of time or at a specified time. (DAU Glossary)

Risk. A measure of future uncertainties in achieving program performance goals and objectives within defined cost, schedule, and performance constraints. Risk can be associated with all aspects of a program (e.g., threat, technology, maturity, supplier capability, design maturation, performance against plan) as these aspects relate across the Work Breakdown Structure (WBS) and Integrated Master Schedule (IMS). Risks have three components: 1) A future root cause (yet to happen), which, if eliminated or corrected, would prevent a potential consequence from occurring, 2) A probability (or likelihood) assessed at the present time of that future root cause occurring, and 3) A consequence (or effect) of that future occurrence. (Risk Management Guide for DoD Acquisition, Sixth Edition)

Risk Mitigation Plan. A document that records the results of Risk Mitigation Planning. It typically addresses topics such as descriptive title of the risks, date of the plan, points of contact for controlling identified root causes, options for mitigation, risk status, fallback approach, recommendations, approval levels, and resource requirements. (Risk Management Guide for DoD Acquisition, Sixth Edition)

Safety. Freedom from conditions that can cause death, injury, occupational illness, damage/loss of equipment or property, or damage to the environment. (DAU Glossary) The program's risk management activities, and organizational and cultural values dedicated to preventing injuries and accidental loss of human and materiel resources and to protecting the environment from the damaging effects of DoD mishaps. (CJCSM 3170. 01C)

SECNAVINST 5000.2F. The fundamental Navy instruction on T&E.

Self-Defense Test Ship (SDTS). Realistic OT for softkill and short range hardkill self-defense weapon systems is often restricted by safety considerations that prohibit threat-representative target presentations for manned ships. For this reason, the former USS PAUL F FOSTER (DD 964) has been configured as an unmanned ship outfitted with current softkill and hardkill self-defense weapon systems for use by the DT and OT communities.

Severe Deficiency. A deficiency that prevents the accomplishment of a requirement designated as critical to achievement of a KPP and results in the inability to accomplish the mission. If a deficiency is determined to be severe, the affected COI should be resolved UNSAT for IOT&E and FOT&E.

Simulation. A method for implementing a model. It is the process of conducting experiments with a model for the purpose of understanding the behavior of the system modeled under selected conditions or of evaluating various strategies for the operation of the system within the limits imposed by developmental or operational criteria. Simulation may include the use of analog or digital devices, laboratory models, or test-bed sites. Simulations are usually programmed for solution on a computer; however, in the broadest sense, military exercises and war games are also simulations. (DAU Glossary)

Simulator. A generic term used to describe equipment used to represent weapon systems in DT, OT, and training, e.g., a threat simulator has one or more characteristics which, when detected by human senses or manmade sensors, provide the appearance of an actual threat weapon system with a prescribed degree of fidelity. (DAU Glossary)

Software Qualification Test (SQT). Post-MS-C software testing will be conducted by COMOPTEVFOR as SQT and is solely intended for a Fleet release recommendation. SQT applies to software modifications of limited scope, such as aircraft and weapons systems Operational Flight Programs (OFP) and other systems in which software provides a similar function.

Software Test. Software will be operationally tested in the system in which the application is installed or implemented when fielded. The software to be used for IOT&E and FOT&E will be the software intended for Fleet use.

Software Upgrade (U.S. Navy). Navy software upgrades (releases) fall into three categories: Major -- adds new functions or warfare capabilities, interfaces with a different weapon system, redesigns the software architecture, or rewrites the software in a different language (requires OT by OPTEVFOR); Minor -- changes that do not add any significant functions or interfaces as determined by CNO (OT by OPTEVFOR upon CNO approval); Maintenance -- releases that are fixes to minor problems (no testing by OPTEVFOR).

Specified Requirement. A system requirement that is clearly documented in the system's capabilities document (Operational Requirements Document, Capabilities Development Document, Capabilities Production Document) and must be either:

1. A KPP, KSA, MOE, MOS, or other performance threshold (not objective), or

2. Any capability stated as a "shall" or "will" statement.

Sponsor. The DoD Component, Principal Staff Assistant or domain owner responsible for all common documentation, periodic reporting, and funding actions required to support the capabilities development and acquisition process for a specific capability proposal. (CJCSI 3170.01G) (Also commonly called resource sponsor.)

Standard. The minimum acceptable proficiency required in the performance of a particular task under a specified set of conditions. (OPNAVINST 3500.38B) Defined by the ORD/CD or assigned by OPTEVFOR, standards consist of measures and criteria.

Statement of Work (SOW). That portion of a contract which establishes and defines all non-specification requirements for contractor's efforts either directly or with the use of specific cited documents. (DAU Glossary)

Subtask. The further breakdown of a task into the discrete events or actions required to complete the task. (See OPNAVINST 3500.38B)

Survivability. The capability of a system and its crew to avoid or withstand man-made, hostile environment without suffering an abortive impairment of its ability to accomplish its designated mission. (DAU Glossary)

Susceptibility. The degree to which a device, equipment, or weapons system is open to effective attack due to one or more inherent weaknesses. (Susceptibility is a function of operational tactics, countermeasures, probability of the enemy fielding a threat, etc.) Susceptibility is considered a subset of survivability. (DAU Glossary)

Sustainability. The ability to maintain the necessary level and duration of operational activity to achieve military objectives. Sustainability is a function of providing for and maintaining those levels of ready forces, materiel, and consumables necessary to support military effort. (CJCSM 3170.01C)

Synergy. Interaction of discrete agents or conditions such that the total effect is greater than the sum of the individual effects.

System-of-Systems (SoS). A set or arrangement of interdependent systems that are related or connected to provide a given capability. The loss of any part of the system will significantly degrade the performance or capabilities of the whole. The development of a SoS solution will involve trade space between the systems as well as within an individual system performance. (CJCSM 3170.01C)

Systems Engineering (SE). The overarching process that a program team applies to transition from a stated capability to an operationally effective and suitable system. SE encompasses the application of SE processes across the acquisition life cycle (adapted to each and every phase) and is intended to be the integrating mechanism for balanced solutions addressing capability needs, design considerations and constraints, as well as limitations imposed by technology, budget, and schedule. The SE processes are applied early in concept definition, and then continuously throughout the total life cycle. (Defense Acquisition Guidebook)

System Service Reports. Service reports are issued when a system in RDT&E has a major or minor failure. They may be issued during any phase of T&E or between scheduled phases of T&E.

System Threat Assessment. Describes the threat to be countered and the projected threat environment. The threat information should reference DIA or Service Technical Intelligence Center-approved documents. (DoDI 5000.02)

System Threat Assessment Report (STAR). The STAR was recently the basic authoritative threat assessment tailored for and focused on a particular U.S. defense acquisition program. The STAR has been replaced by the Validated Online Lifecycle Threat (VOLT).

System Under Test (SUT). The SUT is the hardware and/or software being delivered/developed to meet the requirements set by the resource sponsor and provide the capabilities needed by the Fleet. Through MBTD, the SUT evaluation will be made against specified, derived, and other measures. Issues that are identified as specific to the SUT shall be used for COI risk [Early Operational Assessment (EOA) and Operational Assessments (OA)] or deficiency [Initial Operational Test and Evaluation (IOT&E) or Follow-on Operational Test and Evaluation (FOT&E)] determinations, COI resolution (SAT/UNSAT), system effectiveness/suitability determinations, and fielding recommendations.

Tactical Development and Evaluation (TAC D&E). A program designed to improve tactical readiness through development of tactical doctrine for the effective employment of current combat systems or systems approaching IOC.

Tactical Situation (TACSIT). TACSITs provide Red Order of Battle (OOB), Red doctrine and TTPs, Blue OOB, Blue doctrine and TTPs, environmental details, C2, ROE, and more based on current OPLANs. They are Fleet documents.

Task. A discrete event or action, not specific to a single unit, weapon system, or individual, that enables a mission or function to be accomplished by individuals and/or organizations. (OPNAVINST 3500.38B)

Test. Any program or procedure which is designed to obtain, verify, or provide data for the evaluation of any of the following: 1) progress in accomplishing developmental objectives; 2) the performance, operational capability and suitability of systems, subsystems, components, and equipment items; and 3) the vulnerability and lethality of systems, subsystems, components, and equipment items. (DAU Glossary) The test verification method is an activity designed to provide data on functional features and equipment operation under fully controlled and traceable conditions. These data are subsequently used to evaluate quantitative characteristics (Defense Acquisition Guidebook). See Verification.

Test and Evaluation Identification Number (TEIN). When a program becomes a program of record, the CNO will assign a TEIN. If the program is internal to COMOPTEVFOR the TEIN will start with 3000.

Test and Evaluation Master Plan (TEMP). Documents the overall structure and objectives of the Test and Evaluation (T&E) program. It provides a framework within which to generate detailed T&E plans and it documents schedule and resource implications associated with the T&E program. The TEMP identifies the necessary Developmental Test and Evaluation (DT&E), Operational Test and Evaluation (OT&E), and Live Fire Test and Evaluation (LFT&E) activities. It relates program schedule, test management strategy and structure, and required resources to: Critical Operational Issues (COI), Critical Technical Parameters (CTP), objectives and thresholds documented in the Capability Development Document (CDD), evaluation criteria, and milestone decision points. For multiservice or joint programs, a single integrated TEMP is required. Component-unique content requirements, particularly evaluation criteria associated with COIs, can be addressed in a component-prepared annex to the basic TEMP. (See Capstone TEMP). (DAU Glossary) See SECNAVINST 5000.2E, DoD Instruction 5000.02, and the Defense Acquisition Guidebook.

Test and Evaluation Coordinating Group (TECG). A TECG will convene when T&E issues arise that cannot be resolved between the applicable commands or when extensive T&E coordination is required. A TECG may also be used to implement urgent required changes to TEMPs. In this case, either a page change will be issued or the formal report of the TECG will be attached to the TEMP as an annex until the next required update or revision.

Test Report. Formally documents the results, conclusions, and recommendations as a result of each phase of DT/OT. (DAU Glossary)

Test Reporting. For major programs, the lead service will prepare and coordinate the single (interim or final) report reflecting the system's operational effectiveness and operational suitability for each service. The participating services' independent evaluation reports will be appended to final reports.

Threat. The sum of the potential strengths, capabilities, and strategic objectives of any adversary that can limit or negate U.S. mission accomplishment or reduce force, system, or equipment effectiveness. (DAU Glossary)

Threat Assessment. The provisions of intelligence assessment of the threat in the appropriate context and detail necessary to support plans, programs, or actions. Threat support is normally

provided in the form of threat or capabilities publications, generic threat assessments, and specific threat statements, all of which emphasize system projections and threat forecasts. Threat support also includes operational intelligence on foreign naval targets and force employment. (See System Threat Assessment and Capstone Threat Assessment in the DAU Glossary)

Threat Support. The provisions of intelligence assessments of the threat in the appropriate context and detail necessary to support plans, programs, or actions. Threat support is normally provided in the form of threat or capabilities publications, generic threat assessments, and specific threat statements, all of which emphasize system projections and threat forecasts. Threat support also includes operational intelligence on foreign naval targets and force employment. (See DoDI 5000.02 and DIA Directive 5000.200)

Threat Validation. The evaluation of, and concurrence with, threat documentation. DIA evaluation of service-produced threats stresses the appropriateness and completeness of the intelligence positions and the logic of extrapolations from existing intelligence. (See DoDI 5000.02)

Threshold. A minimum acceptable operational value below which the utility of the system becomes questionable. (CJSCM 3170.01C)

Training. The level of learning required to adequately perform the responsibilities designated to the function and accomplish the mission assigned to the system. (DAU Glossary)

Under Secretary of Defense (Acquisition and Sustainment) (USD (A&S). The USD (A&S) has policy and procedural authority for the defense acquisition system, is the principal acquisition official of the Department, and is the acquisition advisor to the Secretary of Defense (SECDEF). In this capacity the USD (A&S) serves as the Defense Acquisition Executive (DAE), the Defense Senior Procurement Executive, and the National Armaments Director, the last regarding matters of the North Atlantic Treaty Organization (NATO). For acquisition matters, the USD (A&S) takes precedence over the Secretaries of the Military Departments after the SECDEF and Deputy SECDEF. The USD (A&S) authority ranges from directing the Military Departments and Defense agencies on acquisition matters, to establishing the Defense Federal Acquisition Regulation Supplement (DFARS), and chairing the Defense Acquisition Board (DAB) for Major Defense Acquisition Program (MDAP) reviews. (DAU Glossary)

Universal Navy Task List (UNTL). A list of Navy tasks considered essential to the accomplishment of an assigned or anticipated mission. OPNAV Instruction 3500.38 series applies.

User. An operational command or agency that receives or will receive benefit from the acquired system. Combatant Commanders (COCOMs) and their Service Component commands are the users. There may be more than one user for a system. Because the Service Component commands are required to organize, equip, and train forces for the COCOMs, they are seen as users for systems. The Chiefs of Services and heads of other DoD Components are validation and approval authorities and are not viewed as users. (JCIDS Manual) See Validation Authority. (DAU Glossary). In MBTD, users are Fleet operators that employ the SUT.

Validation. Provides objective evidence that the capability provided by the system complies with stakeholder performance requirements, achieving its use in its intended operational environment. Validation answers the question: "Is it the right solution to the problem?" Validation consists of evaluating the operational effectiveness, operational suitability, sustainability, and survivability of the system or system elements under operationally realistic conditions (Defense Acquisition Guidebook).

1. The review of documentation by an operational authority other than the user to confirm the operational capability. Validation is the precursor to approval. (JCIDS Manual)

2. The process by which the contractor (or as otherwise directed by the DoD Component procuring activity) tests a publication/Technical Manual (TM) for technical accuracy and adequacy. (DAU Glossary)

3. The process of evaluating a system or software component during, or at the end of, the development process to determine whether it satisfies specified requirements. (DAU Glossary)

Verification. Provides evidence that the system or system element performs its intended functions and meets all performance requirements listed in the system performance specification and functional and allocated baselines. Verification answers the question: "Did you build the system correctly?" (Defense Acquisition Guidebook). See Analysis, Demonstration, Examination, and Test.

Verification of Correction of Deficiencies (VCD) (U.S. Navy). VCDs are used to support acquisition decisions for limited or full rate production. Evaluation of corrections to specific deficiencies cited in a previous OT&E report will apply to only those COIs that have been corrected, and the evaluation will not require end-to-end testing of the complete system.

Vignette. A convenient or logical grouping of a subtasks to allow testing and data collection. Vignettes are conducted under the varying conditions determined to have impact on the associated subtask performance.

Validated Online Lifecycle Threat (VOLT) Report. A regulatory document for Acquisition Category (ACAT) I-III programs. The VOLT supersedes the STAR and is a system-specific report supporting capability development and PM assessments of mission needs and capability gaps against likely threat capabilities at Initial Operational Capability (IOC).

Vulnerability. The characteristics of a system that cause it to suffer a degradation (loss or reduction of capability to perform the designated mission) as a result of having been subjected to a certain (defined) level of effects in an unnatural (man-made) hostile environment. Vulnerability is considered a subset of survivability. (DAU Glossary)

Waivers. The term "Waivers" applies to a deviation from the criteria identified for certification for operational testing in SECNAVINST 5000.2F. Waivers do not change or delay any testing or evaluation of a system. Also see Deviations. (SECNAVINST 5000.2F)

Warfighting Development Centers (WDC). In DEC 2014, COMUSFLTFORCOM and COMPACFLT stood up WDC to replace Warfare Centers of Excellence. WDCs are established

for air, undersea, surface, and expeditionary forces. Navy Warfare Development Command (NWDC) leads cross domain warfare integration at all levels of Naval warfare.

Workaround. A procedure developed for taking into account shortcomings or other problems in a program and devising workable solutions to get around the problems. (DAU Glossary)