

**BY ORDER OF THE COMMANDER  
96TH TEST WING**



**96 TEST WING HANDBOOK 99-101**

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***Test and Evaluation***

***TEST PROJECT***

***MANAGEMENT PROCEDURES***

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This handbook is a reference document providing information, best practices and procedures for implementing 96TWI 99-100, *Test Project Management*. The purpose is to provide assistance in effectively managing projects conducted by the 96th Test Wing (96 TW). This handbook is a “how to” guide and applies predominantly to all Project Engineers (PE) and Project Managers (PM) but may be used by other personnel supporting test and training/exercise projects within the 96 TW. While non-directive, project management personnel should comply with these recommended processes and procedures as described herein to the maximum extent possible for best success. The core processes of the Test Wing’s Test Project Management is in this handbook’s initial chapters. More detailed information and additional process information is referred to and expanded in the later chapters. This information aids in education, training, and reference, but should not be used as a replacement for official Department of Defense (DoD) or Air Force policy or directives. Always consult the Office of Primary Responsibility for subject matter expertise and official guidance in regard to finance, safety, security and application. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using Air Force (AF) Form 847, *Recommendation for Change of Publication*. Ensure that all records created because of processes prescribed in this publication are maintained IAW Air Force Instruction (AFI) 33-322, *Records Management and Information Governance Program*, and disposed of IAW Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS).

## ***SUMMARY OF CHANGES***

This interim change revises 96TWH 99-101 by (1) removing the reference to Early Turn-on process for scheduling, (2) adding procedures on developing and staffing an Aircraft Possession-Only Transfer MOA, and (3) update [Figure 21.1](#) Test Wing Enterprise System Environment. A margin bar (|) indicates newly revised material.

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## Chapter 1

### TEST PROJECT MANAGEMENT

#### 1.1. Overview.

1.1.1. The purpose of Test and Evaluation (T&E) is to provide accurate, objective, and defensible information to the decision makers to make informed acquisition decisions. Developmental test assesses system compliance with mandated requirements, contracted specifications, and acquisition baselines, and provides such feedback to system developers early in the program. Operational test gauges weapon system performance, in terms of effectiveness and suitability through comprehensive, rigorous test in a realistic operational environment. Efficiencies are gained through integrated testing: collaborative developmental and operational test planning and execution throughout the program life cycle. The unifying theme is that all testers should collaborate to the fullest extent possible to effectively evaluate programs and systems regardless of organizational affiliation. All Air Force T&E activities should be objective, unbiased, and free from outside influences to ensure the integrity of evaluation results in accordance with (IAW) Air Force Policy Directive 99-1, *Test and Evaluation*.

1.1.2. This Handbook describes the standard processes, procedures and tools used by the 96 TW to implement 96 TWI99-100, *Test Project Management*. It follows the test project management process in the phases established within 96 TWI99-100. All current test project management guidance and templates are located in the 96 TW SharePoint™ Site in the 96 TW *Test Process Policies* folder.

1.1.3. The overall responsibility for the T&E and mission support assigned to the 96th Test Wing (96 TW) is the Test Wing Commander. Each test or training activity is assigned to a Test Execution Organization (TEO) which can be designated as an Executing Test Organization (ETO) or a Participating Test Organization (PTO). Each test is conducted by a test team, as described in [paragraph 2](#) of 96 TWI99-100.

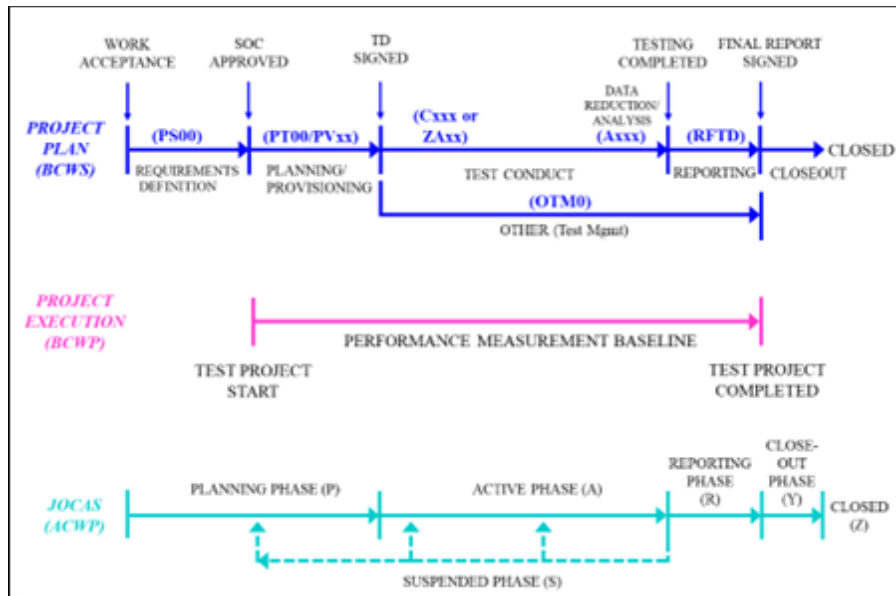
1.1.4. While test project management is the primary focus of this document, any projects executing operations on the Eglin Test and Training Complex (ETTC) for training and other support should also use these processes. This document represents best practices to maximize ETTC success.

#### 1.2. 96th Test Wing (96 TW) Test Project Management Process.

1.2.1. The goal of the Test Project Management Process is to achieve cost effective and timely delivery of agreed upon project content through application of standard project management methodologies, processes, and tools. The 96 TW assigns a test Project Engineer (PE)/Project Manager (PM) to each test in order to coordinate the overall test effort. Based on the customer's request, the PE/PM should determine the project objectives, identify project requirements, define required capabilities, coordinate with 96 TW groups and external organizations to identify resources and/or modifications required, and identify spectrum, safety, security, and environmental requirements. The management process can take several years or less than a month. It encompasses numerous sub-processes, producing either an action or a product, which are dependent upon each other. There are additional sub-processes for foreign and commercial tests, which are detailed later in this handbook.

1.2.2. There are six phases to the test project management process within the 96 TW: Requirements Definition, Planning, Active, Reporting, Close-out, and Closed Phase as shown in **Figure 1.1**. The PE/PM's role in this process is to identify and coordinate stakeholder activities, ensuring that the customer's requirements are met within the agreed upon funding and scheduling constraints. The objective is to develop and execute a plan that provides the customer with agreed to products and services as defined in the customer agreement. Earned Value Management (EVM) is used to inform the PE/PM and the 96 TW on test project cost and schedule performance.

**Figure 1.1. Test Project Management Framework.**



**1.2.2.1. Requirements Definition Phase.** The Requirements Definition phase is the initial phase of project plan during which the customer agreement is prepared and delivered to the test customer for approval. It follows the work acceptance process described in **Chapter 2** where the Test Wing formally decides to accept the work. The work acceptance process is accomplished prior to Work Acceptance in **Figure 1.1** above. All resourcing, financial, technical, deliverable, and schedule requirements are reviewed and cost, schedule, and risk estimates are prepared based on the customer's test request. The Requirements Definition phase ends with the initial customer-signed agreement (i.e., Statement of Capability, Letter of Agreement, Price and Availability [P&A]). This phase is sometimes referred to as the Pre-Planning (PP) phase.

**1.2.2.2. Planning Phase.** The Planning phase is the portion of the project plan during which the Test Directive and all supporting appendices are prepared and completed. The Planning phase includes but is not limited to developing a detailed test plan or Method of Test and Safety Plan, technical and safety reviews, test readiness reviews, technical support reviews, logistical support reviews, and test approval (i.e., Test Approval Brief [TAB], as necessary). Additionally, most required test provisioning activities are accomplished during this phase. In Test Process Tool (TPT)/Job Order Cost Accounting System (JOCAS), the project's Requirements Definition and Planning Phases are both part of its planning phase.

1.2.2.3. **Active Phase.** The Active phase begins once the Test Directive is signed, authorizing the scheduling and execution of missions. This phase includes calibration runs, completion of the test matrix, and accomplishment of documented objectives. During this phase, most deficiency reports and intermediate technical deliverables are completed and provided to the customer to report the status of the test, per the agreement.

1.2.2.4. **Reporting Phase.** During the Reporting phase, the final technical deliverable is generated, reviewed, and delivered to the customer. Technical deliverables can be in the form of Quick Look Reports (QLR), Technical Reports, Letter Reports, or Data Packages. The PE/PM should work with the project team to facilitate the completion and timely delivery of the technical deliverables.

1.2.2.5. **Close-out Phase.** Close-out is the final phase prior to the project being archived. All acceptable charges are expensed and all erroneous charges are reconciled before residual funds are expeditiously returned to the customer.

1.2.2.6. **Closed Phase.** The Closed phase indicates that the project has been completely closed out and no remaining unliquidated obligations or funding remain on the projects. During this phase, no additional costs are accepted and all the Close-out activity is finalized.

### 1.3. Test Wing Enterprise System (TWES).

1.3.1. TWES is a collection of highly customized organizational software products developed to automate a variety of 96 TW processes and to provide reporting and tracking capability for 96 TW management. 96 TW/XP, Information Technology Section (96 TW/XPI) is responsible for the development, programming, and maintenance of standardized business software applications such as TWES that support the test management business processes.

1.3.2. Part of the TWES toolbox includes the Test Process Tool (TPT). TPT provides a suite of management tools including Work Request creation and approval, Job Order Number (JON) creation and management, and management of customer contact information. TPT also contains the Earned Value Cost Accounting System (EVCAS) to lay out the cost and schedule plans (baseline) of a project and then track those plans' performance over time. Numerous reports are available to deliver project information as needed.

1.3.3. TWES also provides upper management with a real-time view of project information through the Commander's Dashboard application. The Dashboard provides an assessment of project status and allows users to "drill-down" into the specifics of a project. It displays JON folder information, EVCAS schedule and cost performance indicators, Work Breakdown Structure (WBS) status, funding levels, and provides numerous charts filterable by organization. The Dashboard collects information from TPT as well as other sources and puts it together in one location.

1.3.4. More information on TWES and other Program Management Tools are located in [Chapter 21](#) Program Management Tools.

**1.4. Electronic Project Folders.** An electronic project folder is created in Livelink™ for all test and training projects. Livelink™ is an approved record keeping system. The project folder should contain all project support documentation to include:

- 1.4.1. Test/Training/Support request/Program Introduction Document (PID), planning funds letter
- 1.4.2. Customer Agreements – All Statement of Capability (SOC)/Letter of Agreement (LOA) /Pricing & Availability (P&A) baseline agreements and revisions/Letter of Agreements from other AFTC organizations/Letter of Acceptance from Foreign Military Sales (FMS) customers
- 1.4.3. Method of Test (MOT)/Concept of Operations (CONOPS) – All baseline MOT/CONOPS and revisions
- 1.4.4. Test Approval Brief (TAB) (if required) – Briefing, minutes
- 1.4.5. Technical Review Board minutes (if required)
- 1.4.6. Test Directive (TD) – TD, supporting appendices (related to safety, logistics, and other required support), frequency authorization (if required), environmental assessments (if required)
- 1.4.7. Project products– All interim and final technical deliverables
- 1.4.8. Closeout – Closeout Letter (if applicable)
- 1.4.9. All other required project documents such as Lessons Learned IAW AFTCI 91-202 96 TW Supplement

#### **1.5. Classified or Sensitive Projects.**

- 1.5.1. Classified or sensitive projects should follow Test Wing procedures and use the Test Wing Enterprise System (TWES) to the maximum extent for project management. Best practices and procedures will be added to this document as they are developed. PE/PMs should use the project's Security Classification Guide (SCG) to determine what and how information is stored and maintained in TWES and other TW systems.

## Chapter 2

### WORK ACCEPTANCE PROCESS

#### 2.1. Work Acceptance Process Overview.

2.1.1. The work acceptance process applies to *all* test/training support to include: Special Projects, PTO tests, ETO tests, and Lead Developmental Test Organization (LDTO) assignments. This activity occurs prior to the Work Acceptance in [Figure 1.1](#), and culminates with the Test Wing decision to accept or reject support. This process begins with either formal or informal contact by an existing or potential customer to a 96 TW TEO or the Wing's single-entry point for new customers, Wing Plans and Programs Office, Range and Installation Sustainment Section (96 TW/XPO). This process ends with the proposed work being accepted into the Wing with a responsibility designation (ETO or PTO) assigned or rejected with a recommendation to the customer of other support options within the test enterprise. The work acceptance process replaces the previous Test Acceptance process in TPT. This process fully complies with the Air Force Test Center (AFTC) Statement of Capability (SOC) process outlined in AFTCI 99-100, Figure 1. AFTC SOC Process Steps 1-3, discussed in [paragraph 3.1](#), Requirements Definition. No TEO has the authority to deny a work request. A work request can only be denied through the work acceptance process as described in [paragraphs 2.6](#) Receive/ Forward Support Request (Work Acceptance Process) and [2.7](#). Non-Supportability.

2.1.2. Work requests should use TPT for consideration and adjudication, which automates and documents the process. The process, however, is agnostic. Classified or sensitive projects should use TPT to the maximum extent, as allowed by the project's Security Classification Guide. However, all work requests must be properly vetted and documented by leadership, including informing the TW/CC, as described in this Chapter. Classified or sensitive projects may develop best practices and procedures to handle these situations while maintaining the intent and rigor of TPT.

2.1.3. The basic project management process in this handbook is directed towards supporting one customer through a single JON. However, there are situations where a hybrid approach may be more appropriate, still using these guidelines. Best practices for these solutions are discussed throughout this document. Just like any project, early identification of the best management process is helpful. Collaborate with your unit's Lead PE/PMs or 96 TW/XPT for assistance and feedback. Best practices and procedures may be submitted to 96 TW/XPT to incorporate in a future document update.

#### 2.2. Initial Customer Contact.

2.2.1. The organization that receives the initial customer request is responsible for initializing the work acceptance process by submitting the work request in TPT. If the customer work request initially comes through 96 TW/XPO, the XPO Point of Contact (POC) should prepare the work request in TPT.

2.2.2. The organization contacted by a potential customer should forward the 96 TW Customer Guide to that customer to assist them with preparing a more specific, thorough request. The guide is approved for public release and has generalized information about 96 TW test and training ranges, general capabilities, the test process and samples of test requests to include a program introduction document (PID) template. The 96 TW Customer Guide is located on the 96 TW SharePoint™ under the *Test Process Policies* folder.

2.2.3. Consultation. A PE/PM may provide consultation to a customer. Consultations are informal communications between the customer and PE/PM that may result in a new support effort. Information provided to the customer can include such information as capabilities of the Wing, rough schedule information, and rough orders of magnitude (ROM) cost estimates. Not all consultations culminate with an intent to test. However, those consultations that do culminate with an intent to test, go through the work acceptance process.

### **2.3. Rough Order of Magnitude (ROM).**

2.3.1. Sometimes a customer desires an early cost estimate for support to help them make the final decision whether to continue with their initial support request. If requested, the PE/PM should draft a ROM for the customer's stated support. It should clearly state that the ROM was developed based on initial customer conversations.

2.3.2. When developing a ROM for a commercial customer who has the intent of using it in a procurement bid, the ROM should be provided by a government civilian (or active duty military) PE/PM.

2.3.3. Sample ROM templates are located on the 96 TW SharePoint™ under the *Test Process Policies* folder. Other examples are under the PE Documents link on Organizational Generic Database (OGDB).

2.3.4. Rough estimates needed by customers for planning purposes should be limited. Development of ROM estimates should be funded institutionally by the test organization.

### **2.4. Early Involvement.**

2.4.1. Units are encouraged to get involved with potential new projects as early as possible. Normally, TW involvement is limited to the support described in the previous two sections. However, there are cases where units may choose to allocate additional unit Direct Budget Authority (DBA) resources for early involvement in new programs. This early involvement could help the TW be better prepared for future tests and improve our capability.

2.4.2. Unit leaders determine the level of DBA support for projects and support for critical meetings. Unit leaders should review their labor RBA/DBA expense percentages and targets to determine if the unit has available labor resources. Additionally, units may allocate other DBA resources, including travel to support early project involvement. Units may consider tracking this DBA support separately from their normal overhead JONs.

2.4.3. Units may contact the Wing Technical Director (96 TW/CT) to discuss the TW strategic involvement for future programs and TW capability. TW leadership provides strategic vision to units to help understand future wing objectives. Additionally, the unit may also contact their FM POC on the availability of additional DBA funds to support labor, travel, etc. for early involvement.

## 2.5. LDTO Assignment Notification.

2.5.1. Initiation of LDTO Assignment may occur in a variety of ways. These include customers contacting AFTC, 96 TW or any one of the 96 TW subordinate TEOs. For customers with an established relationship with a TEO, those TEOs may be the first organization contacted. In any case, organizations need to assist with the coordination of LDTO assignment, documented on the AFMC Form 42.

2.5.2. DoDI5000.89\_DAFI99-103, *Capabilities-Based Test and Evaluation*, describes the LDTO nomination process. AFTCI99-100 identifies AFTC as the LDTO for the AFMC Form 42. 96 TW/XP will be contacted as part of the LDTO designation process to establish the ETO role to 96 TW as appropriate. If the PE/PM is contacted, they should assist the System Program Office (SPO) as much as possible in the preparation of the Work Request. The 96 TW uses TPT's Work Request to coordinate the AFMC Form 42, and 96 TW/XP initiates the request. Reference paragraph 2.5.6 for further details of the LDTO Designation Process.

2.5.3. The LDTO responsibilities are established under DoDI5000.89\_DAFI99-103 and its supplements. Per AFTCI99-100, AFTC is the LDTO for all tests programs for which its subordinate unit has been designated the ETO. AFTC Engineering and Technical Management Directorate (AFTC/EN) has the responsibility to assist with the LDTO process by facilitating and ultimately approving the Wing's determination and designation of the ETO. The LDTO designation does not apply to commercial test support.

2.5.4. As part of the LDTO designation process, the SPO can initially recommend an ETO but AFTC will assign the ETO designation to the appropriate wing, which also becomes the TEO.

2.5.5. If a TEO is not assigned the role of ETO, then the TEO is a PTO. The PTO provides additional support to the ETO when required and can exist whether the Air Force Test Center (AFTC) is LDTO or not.

### 2.5.6. 96 TW LDTO Designation (AFMC Form 42) Process

2.5.6.1. The coordination process for the AFMC Form 42 is generally identical to the Work Acceptance Process in [paragraph 2.6](#), with the exception of how the Request is received and initiated. SPOs are to forward all LDTO Designation Requests (AFMC Form 42s) to Air Force Test Center (AFTC) LDTO Workflow ([aftc.xp.1@us.af.mil](mailto:aftc.xp.1@us.af.mil)) for coordination and signature. AFTC LDTO Workflow forwards the LDTO requests that have requested 96 TW to support to 96 TW Workflow for adjudication. 96 TW/XPT enters all LDTO requests into TPT's Work Acceptance process for review at the weekly Test Huddle. The AFMC Form 42 is an attachment to these Work Request, as additional reference. If a current JON is associated with the request, it should be referenced in the Work Request.

2.5.6.2. During the Test Wing's weekly Test Huddle, all Work Requests including those received on AFMC Form 42 are reviewed. The TW/CC, or designated representative, decides to accept or reject the project based upon input from that group.

2.5.6.3. The approved Work Request should be linked, as appropriate, to a current JON or the new JON established for that project. Rejected projects should refer to [paragraph 2.7](#) Non-Supportability. TPT is updated as discussed in [paragraph 2.6.6](#).

2.5.6.4. Finally, 96 TW/XP forwards a concurrence email for an accepted LDTO Designation to the AFTC LDTO Workflow ([aftc.xp.1@us.af.mil](mailto:aftc.xp.1@us.af.mil)).

## 2.6. Work Acceptance Process (Receive/Forward Support Request).

2.6.1. The Work Acceptance Process allows TW leadership to review and discuss incoming TW customer requests. The Work Request, and a subsequent Work Acceptance, is the authority to open a JON and start the project management process to support the customer's requirements. A work request can only link with one JON. If additional JONs need to be opened, additional Work Request should be created, as a Work Request can only be linked to a single JON. To simplify the process, the PE/PM can use the envelope icon on the accepted request to copy the contents into an email. That text can be copied and pasted into a new request.

2.6.2. The work acceptance process starts with the recipient of the customer's request inputting a Work Request in the TPT. The Work Request should contain the following minimum data elements: title, acquisition category (ACAT), customer organization, customer POC name, customer contact phone, test background, scope of effort, what major resources are needed, LDTO, recommended ETO/PTO, distributed test operations (DTO) consideration, test PE/PM (if known), tentative start date, and tentative end date. If the LDTO is being formally designated, AFMC Form 42 should also be attached to the Work Request. At this time, a determination should be made if the Work Request is associated Real Property. If so, refer to [Chapter 23](#), Civil Engineering Work Clearance, for additional guidance. After all inputs are completed, the Work Request is submitted.

2.6.2.1. The ACAT level of a Work Request (or JON) is the same level as the program and its support funding. Additionally, projects are identified as Office of the Secretary of Defense (OSD)/Congressional Oversight if the supported program is identified as OSD/Congressional Oversight. However, some oversight programs have subparts, with its own set of planning and reporting requirements (see DoDI5000.89\_DAFI99-103, paragraph 3.4). The Program Office's Chief Developmental Tester or Test Manager should provide this information. If program ACAT or Oversight List status is un-known, the level of the work request will be based on the anticipated status.

2.6.3. The Group-level TEO should collectively review the submitted Work Requests and determine whether the support request falls within the 96 TW TEO's mission. **Note:** Each Group has POCs designated as Work Request "Reviewers". In this role, the Reviewer is authorized to update the Work Request Status (accept/reject/rework), as well as identify the Customer Agreement Signature Level and input any comments pertaining to the Work Request.

2.6.4. The TEO should make a recommendation whether the work is accepted into the Group with either ETO or PTO responsibilities. If the work is accepted into the Group as the ETO, the TEO should identify any other current test(s) that are supporting the same Major Defense Acquisition Program (MDAP) and should deliberate on the long-term capacity, capability, and facility implications of accepting the test as ETO and should discuss potential distributed test operations. The TEO Reviewer needs to input comments of the deliberations, update Customer Agreement Signature Level and the Work Request status updated for final disposition (accepted/rejected/rework) for each Work Request.

2.6.4.1. The 96 TW Commander authorizes 96 TW Group Commanders/Directors or their designated representatives to develop the appropriate test documentation and agreements to support a customer. The documents or agreements are approved/signed by the group commander/directors or their designated representative (consistent with current processes for DoD and other government agencies).

2.6.4.2. The 96 TW Commander authorizes 96 TW Group Commanders/Directors, 96th Range Group Director, SEEK EAGLE Director, and Chief of Safety or their designated representatives (but no lower than Squadron Commander/Director) to enter into test contracts with commercial entities under 10 U.S.C §2681. For more information, see **Chapter 18** Commercial Customers.

2.6.5. For those Work Requests that fall within the mission of other groups within the 96 TW, the TEO should recommend re-assignment of the request to the more appropriate TEO, and the Work Request should be emailed to the more appropriate TEO for confirmation of capacity and capability to support. The newly assigned TEO should confirm capacity and capability as well as any issues with supporting the Work Request. The TEO Reviewer needs to input comments of the deliberations, update Customer Agreement Signature Level and the Work Request status updated for final disposition (accepted/rejected/rework) for each Work Request.

2.6.5.1. The lead TEO should contact potential PTOs/supporting organizations as early as possible, establishing contact information and establishing potential planning meeting dates for the project. This PTO information should be included in TPT.

2.6.6. The initial submitter (PE/PM) of the Work Request should be notified by an automated TPT email when the status is updated, and upon acceptance a JON can be created (described in **paragraph 3.2** Issue a New JON in TPT) and linked to the accepted Work Request. 96 TW/XP prepares all submitted Work Requests and AFMC Form 42 requests for review at the weekly Test Huddle. The information from TPT's Work Acceptance is presented for Wing leadership review at the next Test Huddle meeting.

2.6.7. 96 TW/XP presents all vetted Work Requests at the Test Huddle, which includes all TEO Group-level commanders/directors or representatives and Civil Engineer Group. The forum collectively reviews the work acceptances and note any issues as appropriate.

2.6.7.1. Work Acceptances without issue are normally already accepted by their group's work request "reviewers." Group technical directors designates reviewers for their group and their approval process.

2.6.7.1.1. Group reviewers can be found using TPT. Under the Reporting heading, run the User report, "User Group and Role Master List." Reviewers have the RoleName of "WR Reviewer."

2.6.7.2. Projects with issues should be discussed and use the process described in **paragraph 2.7** Non-Supportability below. Comments should be entered into TPT describing the reason for rejection. 96 TW/XP should coordinate through 96 TW/CT with AFTC on any project considered for rejection, to determine if other AFTC resources may meet the customer's requirements. 96 TW/XP should ensure the Work Acceptance with all notes and final disposition are completed.

2.6.7.3. 96 TW/XP informs AFTC of the Work Acceptance decision. For rejected projects, complete the process in [paragraph 2.7](#) below for non-support.

## 2.7. Non-Supportability.

2.7.1. If at any time a Work Request, a project or a requirement of that project, is identified as non-supportable, the TEO generates a non-supportability memorandum and follows the 96 TW process as described below. **Note: The TEO should follow this process to the maximum extent possible before rejecting a customer request.** The memorandum contains sufficient detail to identify the reason for non-supportability, alternative options reviewed with the customer, the customer's milestone(s), and a recommended alternative site for the customer to receive support. A Non-Supportability Memo template is available under the 96 TW SharePoint *Test Process Policies* folder.

2.7.2. The TEO should contact the Test Wing Technical Director (96 TW/CT) and 96 TW/XP as early as possible to discuss non-support for any project. Nominally, non-support for projects will be discussed at the TW weekly Test Huddle, which helps speed the review and coordination process for any non-support letter back to the customer.

2.7.3. Non-support for projects is an interest item for both the TW and AFTC. The inability to support project requirements can help identify infrastructure and resource requirements for AFTC. The reason for the recommendation of non-supportability is maintained and collected by 96 TW/XP for review during the planning and programming of wing resources and funding allocations.

2.7.4. The TEO prepares the non-support memorandum and submits it via email to the 96 TW/XP Workflow ([46tw.xp.workflow@us.af.mil](mailto:46tw.xp.workflow@us.af.mil)) with the subject "Urgent: Test Non-Supportability."

2.7.5. 96 TW/XP notifies the Test Wing Technical Director (96 TW/CT) of the recommendation of non-support from the assigned TEO. 96TW/XP also provides 96 TW/CT the reviewed non-support memorandum prepared by the TEO.

2.7.5.1. If 96 TW/CT concurs with the recommendation for non-support, the non-support letter is signed/approved by the 96 TW/CT and returned to 96 TW/XP. The 96 TW/CT may contact their AFTC counterparts for other test support options. If AFTC cannot find other AFTC Enterprise options to support the customer, they should concur with the 96 TW/CT recommendation for non-support. 96 TW/XP returns the signed non-support letter to the TEO. The TEO sends the non-support letter to the customer. The TEO ensures the Work Acceptance is rejected in TPT. XPT files the completed non-support letter on the XPT SharePoint site, in the Project Management directory.

2.7.5.2. If the 96 TW/CT does not concur with the non-support recommendation, the issue should be discussed with the 96 TW/CC by the 96 TW/CT at the weekly Test Huddle. The 96 TW/CC, as the Major Range and Test Facility Base (MRTFB) Activity Commander, is the final decision authority. The 96 TW/CC designates the appropriate TEO for the customer requirements. The TEO ensures the Work Acceptance is accepted in TPT.

## Chapter 3

### REQUIREMENTS DEFINITION “PP” PHASE

#### 3.1. Requirements Definition Overview.

3.1.1. The Requirements Definition starts with the Test Wing’s formal Work Acceptance as shown in [Figure 1.1](#). The work acceptance process precedes this phase. During this phase the JON is created, and the Customer Agreement is prepared and delivered to the customer for signature. The Requirements Definition (PP) phase is the default phase that all new JONs are placed at JON creation. All resourcing, financial, technical, and schedule requirements are reviewed and cost, schedule, and risk estimates are prepared based on the customer’s test request. During the Requirements Definition phase the test project Performance Measurement Baseline (PMB) is established and should accurately reflect the Customer Agreement. This phase begins on the 96 TW project acceptance date and ends on the Customer Agreement customer signature date. The project start date is defined by AFTC as the Customer Agreement signature date. Once the customer approves and signs the Customer Agreement, the project is authorized to start and the test project phase should be changed to the Planning (P) phase in TPT. A single standardized WBS code, PS00, titled Test Requirements Definition, should be used for all projects.

#### 3.2. Issue a New JON in TPT.

3.2.1. Once a Work Acceptance is approved, the PE/PM creates a new project JON in TPT. The PE/PM links the test project JON to the Work Acceptance within TPT. Only one JON may be opened and linked to a Work Request/Acceptance. Test Wing support organizations should be issued a JON/WBS for their charges versus opening a new support JON. Sub-support JONs are discouraged, however XP/FM have established the following best practice to support customers with wide-range requirement.

3.2.1.1. Parent-Child JONs. This is a special circumstance used to support a customer with a large *program and must be approved by Group FM Chief prior to establishment*. Management of this large *program* effort is best supported using multiple project JONs that can span multiple squadrons but are maintained in one group. The guidelines for establishing this Parent/Child JON relationship are:

3.2.1.1.1. Parent JON is always admin/non-test. The parent JON is for *program* support while child JONs are for individual projects supporting the *program*.

3.2.1.1.2. Child JONs can be test or non-test depending on requirements.

3.2.1.1.3. Parent customer agreement (or SOC) includes *program* support and project execution.

3.2.1.1.4. Residual funds from child JONs return to parent JON upon child effort completion and entering into closeout.

3.2.1.1.5. Child JONs will be baselined and tracked via TW EVM processes.

3.2.1.1.6. Parent JON will have customer agreement (or SOC) covering all associated child JONs as appropriate. Consider funding sources or requirements to manage funds separately for creating child JONs.

- 3.2.1.1.7. A child JON not covered by a parent JON customer agreement (or SOC) requires its own customer agreement (or SOC). Technically, this would be just another supported project for the same customer, related to the same *program*.
- 3.2.1.1.8. All related JONs, parent and child, must be listed on the customer agreement and funding documents to allow transfer of funds.
- 3.2.1.1.9. Detailed estimates for child JONs must be prepared to support parent customer agreement. Child estimate template is located on 96 TW Test Process Policies SharePoint site.
- 3.2.1.1.10. Child JONs should be specified as a WBS in the parent customer agreement for reference. There is no systematic JOCAS relationship, so each child JON must be tracked separately in JOCAS.
- 3.2.1.1.11. Funding documents should be parent JON. Unit FM POC executes JON-to-JON transfers as appropriate. JON to JON transfers must have prior approval by the Group FM Chief and can only be accomplished within a single group.
- 3.2.1.1.12. Child JONs may only have one parent JON. Parent JONs may have multiple child JONs.
- 3.2.1.1.13. Stand-alone JONs can become child JONs with appropriate documentation and customer agreements/amendments.
- 3.2.2. Every test/training project accomplished by 96 TW is identified with a JON. The JON is annotated on all requests, tasks, schedule requests, and funding documentation. It tracks all work documented, approved, executed, and cost charged. The assignment of a project JON is in accordance with EAFBI 65-601, *Job Order Cost Accounting Operations*, paragraph 3.3. JON Assignment. TPT uses that guidance when it creates the specific project JON.
- 3.2.3. The initial 96 TW priority is established when the JON is created when the PE/PM selects the appropriate project description from the TPT dropdown menu. The priority is dynamic throughout the life of the program based on scheduling criticality and puts the project in the queue for all activities such as scheduling, supplies, and modification work. Description of the Mission Scheduling Priority System are in Chapter 3 of EAFBI 13-200, *Eglin Range Mission Scheduling and Control*.
- 3.2.4. JON Title. The PE/PM creates an appropriate title that clearly identifies the system under test and the type of test within the character limits of the short title. The PE/PM should use only approved 96 TW acronyms and abbreviations. For example, instead of “JET Testing”, a better title would be “Joint Environmental Toolkit S/W T&E.” Projects may evolve during their scope. While keeping the same title is preferred, a JON title that accurately describes the project is better. PE/PM should document the JON Title change in TPT for future reference in Remarks.
- 3.2.5. Customer and TEO Information. The PE/PM inputs the appropriate selection of the Customer Category, Country and Customer Organization. This information is used by the Financial Management Office, along with other required supporting documentation, to set the appropriate rates for the JON. The PE/PM inputs the appropriate Test Manager, Office of Primary Responsibility, PE/PM, Test Engineer (TE), and Test Organization Role.

3.2.5.1. For details on variances in process for Commercial Customers see [Chapter 18](#) Commercial Customers. For Foreign Military Sales customers, see [Chapter 19](#) Foreign Military Sales Customers.

3.2.5.2. Customer information is used to send automated Customer Surveys. PE/PMs should ensure the information is correct and update as necessary when customer POC change.

3.2.5.3. PE/PM should specify DSN or Comm for commercial for customer contact phone numbers.

3.2.5.4. Customer Organization is used for database searches, so standardization is important. PE/PMs should use the following guidelines:

3.2.5.4.1. Air Force organizations

3.2.5.4.1.1. AFMC units. Use Center/Directorate (to at least three level), or the Wing/Squadron. Examples: AFLCMC/EBA, AFLCMC/EBMS, AFLCMC/HBAW-OL, AFRL/RWP, AFRL/RXA, 412TW/775TS, 412TW/TMGGB, AEDC/TST, 96TW/780TS, 96TW/96OG Det1, 96TW/SKP

3.2.5.4.1.2. Other AF units. Use Wing or DRU/Squadron. Examples: 53WG/28TES, AFGSC/A5BS, AFOTEC/Det4, SAQ/AQ

3.2.5.4.2. Other Services (Army, Navy, etc.). Use Service and unit/organization. Examples: Army/A TEC, Army/<unit/organization>, Navy/PMA201

3.2.5.4.3. Unified/Specified Commands. Use command and Unit. Example: USSOCOM/Det1

3.2.5.4.4. Department of Defense. Use Agency/Department and Unit. Examples: ANG/<Unit>, DARPA/<Directorate>

3.2.5.4.5. Foreign Military Sales. Use FMS and country. Example: FMS/<country>

3.2.5.4.6. Commercial Programs. Use Comm as abbreviation for Commercial and the Company Name. Example: Comm/Boeing

3.2.6. Project Characterization

3.2.6.1. While the Wing's mission is to conduct developmental test and evaluation, there are a variety of other projects that occur in the Wing at any given time. It is important that the Commander is cognizant of all the support types and characterization being conducted by the 96 TW. It is also important to understand the Adaptive Acquisition Pathway a project may support. This information will help leadership and management understand the support the TW is providing the customer.

3.2.6.2. Type Work.

3.2.6.2.1. The PE/PM selects the type of work the project represents from the Type Work dropdown menu during JON creation based on the definitions in [Attachment 3](#), Type Work Designators in TPT. Proper Type Work selection ensures proper metrics reporting and scheduling in Center Scheduling Enterprise (CSE).

3.2.6.2.2. Changes to Type Work can only be done by System Administrators, after coordination with 96 TW/XPT.

3.2.6.2.3. The Adaptive Acquisition Pathways and other TW Support information is located in [Attachment 6](#), Adaptive Acquisition Framework Pathways and other TW Support.

3.2.6.2.4. The major and specific types of testing are defined in DoD5000.89\_DAFI99-103. Attachment 7, Major and Specific Test Type Categories has a consolidated list of definitions. PE/PM should select the most specific type that applies to their JON. This information is consolidated and displayed on the Commander's Dashboard by selecting Project Characterization under the Test Projects menu. This information is also shown during the TW quarterly PMR.

### 3.2.7. Nuclear Related Test.

3.2.7.1. The PE/PM indicates a test is nuclear related if it involves testing an aircraft platform's nuclear weapons delivery capability, if the system under test is a support item of a nuclear system, or if the system under test is a command and control support item for nuclear emergency response or communication.

3.2.7.2. The nuclear system which the test project is related is annotated in TPT, if security classification allows. Do not input classified information in TPT.

3.2.7.3. This information is compiled and provided to the Air Force Nuclear Weapons Center via AFTC.

3.2.8. Urgent Operational Need (UON). If the project is an urgent operational need, the PE/PM should indicate such by selecting "Yes" from the (J) UON dropdown list. PE/PM should periodically review and update this field based on the project status. Additionally, the project use of the Urgent Capability Acquisition Pathway is a good indication that the Urgent Operational Need field should be "Yes."

3.2.9. Link JON to Work Acceptance. The PE/PM links the Work Acceptance during JON creation in TPT. If the JON was created before Work Acceptance then the PE/PM links it to its Work Acceptance using the JON Edit function in TPT. Select the JON to be linked, then access the Work Acceptance on the Work Acceptance tab.

3.2.9.1. JONs may only be linked to one Work Request. If PE/PM determines additional JONs would better support customer requirements, a new Work Request would need to be created.

3.2.9.1.1. Best practice on creating a new Work Request from a previous Work Request. Use the "envelope icon" on the accepted request to copy the contents into an email. Use the copied text to copy and paste information into a new request. Recommend the PE/PM clearly state in the beginning of the Work Request "Background Comments" that the project is related or an outgrowth from a previously approved JON/Request. The PE/PM should reference the related project by JON and JON Title.

3.2.10. When a new JON is created in TPT, the JON is sent to JOCAS in the Work Phase Code "P". Until other WBS codes are sent to JOCAS, only the "0000" WBS is available. To preclude charges to WBS 0000, PE/PMs should either:

3.2.10.1. Create WBS Codes in EVCAS and send to JOCAS within 24 hours of creating JON in TPT (Recommended). When Type Work 2-Test JON is created, four WBS codes are created in TPT/EVCAS, PS00, PT00, RFTD, and OTM0. However, no WBS Codes are passed to JOCAS from TPT until PE/PM sends them to JOCAS. See [paragraph 3.4](#) Create Test Requirements Definition WBS below for more information. The PE/PM should maximize the use the standardized, activity based WBS Codes in [Table 3.2](#).

3.2.10.2. Change Work Phase Code to “S” after creating JON, but is not recommended. While most charges would be restricted, charges may still come through JOCAS. Additionally, PE/PMs are unable to move JONs back to the PP phase. PE/PMs must coordinate with 96 TW/XPT for approval to revert back to the PP phase. Finally, as S-Suspended, the JONs will be reported to AFTC for tracking. Normally, JONs are first reported to AFTC after they complete the Requirements Definition phase and when they enter the TPT Planning phase.

3.2.11. **Note:** JONs created in error can be delete by the PE/PM by using the Delete link during a short time window. The Delete link is only activated if the JON has not been sent to JOCAS. Once a JON has been sent to JOCAS, it cannot be deleted; only cancelled. JONs are transmitted to JOCAS at 1600 local Eglin time, every day.

### **3.3. Create Project Folder in Livelink™.**

3.3.1. Once a JON is created in TPT, the PE/PM ensures an electronic project folder is created in the Livelink™ system either manually or automatically via a SOC workflow. The naming convention is JON - JON Title, matching the entry from TPT. All completed/approved/signed test project documentation resides in the Livelink™ project folder. Draft documents are not required to be kept in Livelink™.

3.3.2. For projects whose document classification is greater than the Livelink™ security classification, the PE/PM should follow the guidance of their TEO commander/director.

### **3.4. Create Test Requirements Definition WBS.**

3.4.1. The TPT EVCAS module was developed as a 96 TW tool to develop cost estimates and time schedules by detailed work packages, and to track actual cost and completion status by work package.

3.4.2. The TW has established standard WBS codes for easy reference and comparison between JONs. The PS00 WBS is automatically created in EVCAS and is titled: Test Requirements Definition (SOC) [or LOA or P&A, as appropriate].

3.4.2.1. WBS Start Date: Work Acceptance Date.

3.4.2.2. WBS End Date: Customer Agreement Signature Date.

3.4.3. The PS00 WBS includes all labor and TDY costs required to support Customer Agreement development during Requirements Definition phase. Labor costs are for both government and contractor support from each required cost center.

3.4.4. The PE/PM, in EVCAS, sends PS00 WBS to JOCAS to accrue all pre-planning charges; DO NOT BASELINE. A JON should not be baselined until the Customer Agreement is approved by all parties.

3.4.5. Any subsequent Customer Agreement revisions should be sequentially numbered (PS01, PS02, etc.).

3.4.6. No other WBSs should be used for Customer Agreement development.

### **3.5. Secure Planning Funds.**

3.5.1. Because the effort and detail required to draft Statements of Capability varies by customer and complexity of the work, the PE/PM should request planning funds from the DoD customer up front. These funds are necessary to support early planning meetings and tasks prior to the formulation of the Customer Agreement. Funding should be received before any work is performed. As an exception, if it is critical that work begins prior to receipt of customer funding, a deferral letter signed by the unit commander or similar mechanism approved by the FM Group Chief should be in place in the Livelink™ project folder before beginning any work. An example deferral letter is located in the 96 TW SharePoint™ Site in the *Test Process Policies* folder.

3.5.2. The PE/PM should coordinate the planning funds letter using the designated Workflow in Livelink™.

3.5.2.1. The approval level for agreements should be IAW the test wing and group's Delegation of Approval (DOA) letter. Current DOA letters are on the 96 TW SharePoint™ Site in the *Test Process Policies* folder,

3.5.3. A suggested template for planning funds letter is located in the 96 TW SharePoint™ Site in the *Test Process Policies* folder.

3.5.4. PE/PM should contact their Financial Management Specialist for all questions and issues about financial management.

3.5.5. The PE/PM should not baseline planning funds separately from the Customer Agreement in EVCAS. Once the PE/PM drafts and receives the signed Customer Agreement, they should then baseline the entire Customer Agreement amount which incorporates the planning funds into the budget.

### **3.6. Historical Test Project Review.**

3.6.1. The PE/PM should ensure that a literature review or organizational data review is conducted. This should aid in cost and schedule estimation of the scope of the test as it eliminates redundant testing and work.

3.6.2. The PE/PM is encouraged to collaborate with the test team to determine the scope of the test and complete the literature and organizational data review. Example sources for literature review or lessons learned are completed test reports, other technical deliverables, deficiency reports, similar Test Directives and associated test plans or Methods of Test, Organization Generic Database (OGDB) Super Search, and safety documents.

### **3.7. Scientific Test and Analysis Techniques (STAT) Review.**

3.7.1. Scientific Test and Analysis Techniques (STAT) enable the development of efficient and rigorous test strategies that yields defensible results. The skillful use of STAT can be a powerful tool in providing the customer with confidence in test results that balances test resources and program risk. The application of STAT directly influences project scope, thus has a direct impact on cost and schedule estimation.

3.7.2. PE/PMs should have a STAT practitioner involved early in the Requirements Definition Phase to include kickoff meetings. Unless the project meets exemptions below, PE/PM's should consult with STAT practitioners to define scope prior to SOC completion. Additionally PE/PM's should maximize to the extent practicable, the STAT practitioner's involvement in the planning, execution, and reporting phases.

3.7.3. Exemptions. Test activities that are clearly not experimentation or the Test Wing is not responsible for designing the experiment are exempt from applying STAT. This includes demonstration events, CONOPS (support to tests designed by other agencies), or data collections. The PE/PM should coordinate with the customer and STAT practitioner to determine if the project is exempted at or following the kickoff meeting. Even for exempted projects, the STAT practitioner may recommend test designs that better meet customer needs or use resources more efficiently.

#### 3.7.4. Policy.

3.7.4.1. Department of Defense Instruction (DoDI) 5000.02T requires that developmental test planning "use scientific test and analysis techniques to design an effective and efficient test program."

3.7.4.2. Defense Acquisition Guidebook repeats and expands this intent: it adds the objective "*to yield defensible test results,*" it calls for early inclusion in test planning, it gives example techniques for different test goals, and requires follow-through on test planning in "*analysis of test data and reporting of test results.*"

3.7.4.3. DoDI5000.89\_DAFI99-103, paragraph 3.4. b. (6) directs Integrated Test Teams (ITT) to "consult a [STAT] practitioner...whenever test designs are considered" and adds requirements to "identify the analysis technique(s) to be used," "identify the test points required and justify *their placement,*" and to estimate "*the expected decision risk remaining after test completion.*"

3.7.4.4. In June 2011, the Deputy Assistant Secretary of Defense (DASD) for Developmental Test and Evaluation (DT&E) Scientific (or Statistical) Test and Evaluation Design Chair directed development of the STAT implementation plan for developmental test.

#### 3.7.5. AFTC's 12 August 2015 policy letter requires all test plans to address:

3.7.5.1. Objectives, key test conditions, and measures of system performance

3.7.5.2. The number and justification of selected test points

3.7.5.3. Test point selection method/algorithm and criteria for maximizing information collected

3.7.5.4. Analysis used to draw conclusions and a justification if statistical analyses are not used

3.7.5.5. Statistical or coverage measures of merit that "grade" the design quality and remaining risk

3.7.6. More information on STAT is found in [Chapter 20](#) Scientific Test and Analysis Techniques (STAT).

### 3.8. Kickoff Meeting.

3.8.1. Once planning funds are received, the PE/PM should start preparing for the kickoff meeting.

3.8.2. A kickoff meeting is recommended for each test project. The purpose of the kickoff meeting is to gather information from all the possible stakeholders who may have a role in supporting the test and to determine test resource availability and capability to support the test.

3.8.2.1. 96TWI99-100 lists potential 96 TW organizations and their functions that should attend kickoff meetings.

3.8.2.2. Another potential member of the test team includes the 96 RN/RANSS Range Engineer. The Range Engineering Assignment List for specific ranges and facilities can be found on the Eglin Range Configuration and Control Committee (RC3) SharePoint™ site in the Shared Documents Library and the OG Database under the Range Menu Test Site POCs. The link for the RC3 is at <https://cs2.eis.af.mil/sites/10554/SitePages/Home.aspx>. The Range Engineer is responsible for the configuration of the range and coordinating technical and engineering services as required to support open-air testing and training performed at Eglin AFB. Range operations are performed by the Operations and Maintenance (O&M) contractor as part of the Eglin Operations and Maintenance Services contract (E-OMS), and the Range Engineer acts as a liaison between the PM/TE and the O&M contractor. The Range Engineer should:

3.8.2.2.1. Provide inputs to the PE/PM and TE during the Planning phase with respect to range capabilities and resource limitations.

3.8.2.2.2. Provide information on current range capabilities and upgrades required to meet the customer's requirements. Provide recommended alternatives to meet the customer's requirements if the test range is currently not able to meet them.

3.8.2.2.3. Provide cost and schedule estimates for configuration of the test range to support customer agreements.

3.8.2.2.4. Provide estimates for associated cleanup and disposal of range residue created by a test or training mission.

3.8.2.2.5. Provide other inputs to the PE/PM to support customer agreements.

3.8.2.2.6. Keep the PM abreast of range project status to include cost, schedule, and any changes in technical performance risk during range configuration setup, mission conduct, and close-out.

3.8.2.2.7. Coordinate with the 96 TW TEO Unit Environmental Coordinator for information required for the environmental analysis in support of test set-up and range configuration.

3.8.2.2.8. Provide directives to the O&M contractor for technical support not performed under a scheduled mission. This support includes range configuration and setup that is not scheduled via Center Scheduling Enterprise (CSE).

3.8.2.2.9. Coordinate with the 96 RNCS/RNCOS Test Support section for any Mission Control Room and/or range data processing requirements.

3.8.2.3. Logistics Management Specialist undertakes a wide range of business tasks to support the smooth and efficient operation to include airborne testing of live fire munitions, ground tests, aircraft/store integration, radar cross-section measurement, munitions countermeasures, some commercial foreign and domestic testing, etc. The Logistics Management Specialist should facilitate aircraft and maintenance issues, munitions, hazardous waste coordination, government/non-government resources, transportation, facilities, and medical support.

3.8.3. The PE/PM should create an attendance list, share necessary read-ahead documentation with attendees, and identify a meeting chairman. The PE/PM is normally the chairman of the kickoff meeting.

3.8.4. The location of the meeting should be conducive to the work being accomplished. The goal is to conduct the kickoff meeting at the location where the test support is located. The information discussed is also beneficial for working with test support functions to schedule proper resources, to ensure the resources are available, and to interface with the range O&M contractor to begin planning the mission requests.

3.8.5. The PE/PM should use a Kickoff Meeting Checklist. The checklist should cover planning factors, provide a list of items to be considered during planning, and is very useful in pulling detailed requirements from the customer. (A suggested template of a kickoff meeting checklist is in the 96 TW SharePoint™ Site in the *Test Process Policies* folder.) The test team should outline the general requirements for the test and what preliminary support appendices should be required.

3.8.5.1. The PE/PM should provide the list of support requirements to the logistics management specialist. If the test has extensive or unusual logistics requirements, the PE/PM should pre-coordinate those prior to the kickoff meeting.

3.8.6. Discussion usually centers on test item description; desired test schedule; aircraft modifications; facility alterations, modifications, or new required facilities; targets; security; munitions; range resources; data products; information protection; frequency requirements; environmental concerns; safety concerns; and the Method of Test.

3.8.6.1. Customer Funding for T&E facilities must be supported by specific language in an agreement. Contact the unit FM POC for guidance on this language for funding and support. It could potentially be put into the customer agreement/SOC or supported by a separate MOA.

3.8.6.2. **Note:** The PE/PM should identify as soon as the requirement becomes known any alterations, modification, or additions that are required to a facility or test site as these are long-lead items and typically require a minimum of 2 years to 7 years or more to complete.

3.8.6.3. **Note:** If an environmental assessment could be required, the PE/PM should invite the Civil Engineering Environmental Team to the Kick-off meeting and coordinate detailed planning addressing environmental issues.

3.8.7. The kickoff meeting should also be used to introduce the test team, to include as required: TE, STAT Practitioner, Test Safety Officer (TSO), Logistics Management Specialist, aircraft instrumentation, technical support, civil engineering, data reduction, and frequency control POC, aircrew, Range Engineer, and target POCs, etc.

3.8.7.1. If a portion of the test involves or is initially believed to involve a flight test, the PE/PM should determine whether an aircrew representative is required at the kickoff meeting. Provisioning activities associated with flight test are detailed in the Planning Phase chapter of this handbook.

3.8.7.2. Special considerations should be taken into account for Commercial and Foreign Military Sales customers. Those considerations are detailed in [chapters 18](#) Commercial Customers and 19 Foreign Military Sales Customers.

### 3.9. Create Project Schedule.

3.9.1. The PE/PM communicates with the customer about the desired technical deliverable date and the acquisition decision (if any) that the deliverable supports. With this information, the test team reviews long-range schedules (i.e., Center Scheduling Enterprise [CSE]) for any resource limiting large projects that may conflict with the customer's technical deliverable need date.

3.9.2. The PE/PM offer the customer potential available test dates and delivery of technical deliverables.

3.9.3. Once the PE/PM and customer have come to an agreement on the need dates, the PE/PM estimates the project's schedule, developing the following *estimated* dates ([Table 3.1](#)) for inclusion in the Customer Agreement.

**Table 3.1. Test Schedule Milestones.**

| <u>Test Schedule Milestones</u>                   | <u>Estimated Date</u> |
|---|-----------------------|
| Project Start (Customer Agreement signature date) | XX-XXX-XX             |
| Active Phase Start (Test Directive signed)        | XX-XXX-XX             |
| Active Phase End Date                             | XX-XXX-XX             |
| Final Technical Deliverable                       | XX-XXX-XX             |
| Project Completion                                | XX-XXX-XX             |

3.9.3.1. The PE/PM considers the impact of long-lead items when developing the schedule.

3.9.3.1.1. Flight Termination System (FTS) Development and Certification

3.9.3.1.2. Radio Frequency Assignment Process.

3.9.3.1.3. T-2 Modification Process

3.9.3.1.4. Target Provisioning

3.9.3.1.5. Environmental Impact Analysis

3.9.3.1.6. Contracting Support

3.9.3.1.7. Non-standard logistics/maintenance support

3.9.3.1.8. Cyber Information Assurance

### **3.10. Start the Customer Agreement Process.**

3.10.1. The Customer Agreement can be in the form of a Statement of Capability (SOC), Letter of Agreement (LOA), or Pricing and Availability letter (P&A). It specifies estimated negotiated schedule, costs, objectives and scope, responsibilities, deliverables, and risks. This document formally requests required funding from the customer to provide support and documents customer approval.

3.10.2. The Customer Agreement represents the PE/PM's thorough and detailed project planning effort. It documents the most accurate and realistic cost and schedule estimates possible given the information from the customer and support agencies. The Customer Agreement is the official signed agreement between the 96 TW support organization and the test customer and it establishes the formal project PMB entered into EVCAS which the TW evaluates cost and schedule execution performance. The test team, in conjunction with the customer, needs to also agree on the appropriate Technical Deliverable(s) to provide to the customer to support their decision needs. The variety of Technical Deliverables are designed for specific situations and attempt to balance the level of detail with the need for timely delivery. Consider what the customer desires (to include scope and timeliness) with what is necessary to properly document the test.

### **3.11. Determine Resources Required to Accomplish the Project.**

3.11.1. The test team should gather sufficient detail on the program. When applicable, the test team should review Part IV (Resource Summary) of the program's Test and Evaluation Master Plan (TEMP) for additional resource requirements. Information about the TEMP is found in the Defense Acquisition Guidebook at <https://www.dau.mil/tools/dag>.

3.11.2. After gathering sufficient detail of the requirements of the test, the PE/PM requests estimates of time, materials, and required capabilities to successfully conduct the test.

3.11.3. The resource estimates should be developed based on the project as identified during the kickoff meeting and any subsequent documentation of the "known work." If the requested support cannot be provided, then the support organizations should make recommendations on how support might be made available.

3.11.4. Any received resource estimates from supporting organizations should identify any pertinent assumptions or constraints regarding that support, including other support options and a recommendation for the preferred option.

3.11.5. Support organizations should identify whether their estimates include risk and uncertainty. The PE/PM should not inflate those parts of the overall resource cost estimate where risk and uncertainty have already been included.

### **3.12. Optimum Resource Sourcing and Distributed Test Operations (DTO) Review.**

3.12.1. Distributed Test Operations (DTO) is defined as any and all operations where an AFTC Wing or Complex leverages capabilities or resources existing outside of that organization.

3.12.1.1. The level of complexity may range from synchronization of multiple, individually-independent, but sequentially interdependent test operations, to simultaneous test operations involving geographically separate ranges, control rooms, and other assets.

3.12.1.2. It is understood that use of DTO processes and methodologies will not be appropriate or available for some programs.

3.12.2. The PE/PM should assess whether a planned test requires capabilities or resources beyond, or in excess of, those existing within their Wing/Complex; employ DTO processes and methodologies as described in the current AFTC Distributed Test Operations Standard Operating Procedures Handbook. This document is located in the 96 TW SharePoint™ Site in the *Test Process Policies* folder.

3.12.3. When a required capability exists outside the 96 TW, the Wing should not duplicate that capability, rather utilize DTO as the preferred approach. In cases where the 96 TW possesses all required capabilities and resources, but where scheduling conflicts may result in delays in test execution, DTO should be explored as a way to minimize delays.

3.12.4. DTO Assessment Documentation. The PE/PM documents the review of DTO necessity on the DTO assessment form IAW the AFTC DTO Instruction. *All test projects require a DTO assessment.* The DTO assessment form is uploaded as an attachment in the Customer Agreement workflow in Livelink™ described in [paragraph 3.17](#) Customer Agreement Coordination, Approval and Concurrence. The approver of the Customer Agreement should review the DTO assessment form.

### **3.13. Develop Cost and Schedule Estimates.**

3.13.1. One of the most important responsibilities of a PE/PM is the estimation of costs required to accomplish a test project.

3.13.2. This cost estimate is the basis for requesting funds from the customer and determining the Performance Measurement Baseline (PMB). The PMB is the time-phased resource plan for a program and is used to track cost and schedule performance.

3.13.3. The PE/PM builds the working estimate in EVCAS. The working estimate is in the form of an activity based WBS structure. All WBSs should include costs for all required resources needed for support, and have a time-phased schedule with estimated begin and end dates that correlate to the negotiated project milestones from the customer.

3.13.4. The first step in building the PMB should be scheduling the work. This is a crucial step in establishing a meaningful PMB since the schedules form the basis of the time-phased budgets. Each program schedule is based on the work packages you have defined by your WBS selection. These WBS codes are entered into EVCAS with a start date and end date required to complete each task, the number of events, and a work package title. The duration is automatically calculated.

3.13.5. The second step in building the PMB should be budgeting the work. For each activity, the PE/PM identifies in EVCAS the resources and manpower required (by hours or dollar amount) to complete the activity. EVCAS accesses the current standard Rate Price Catalog, and the dollar amount for each activity is determined. Built into EVCAS is a productivity factor tool to apply PE/PM's determined productivity percentage.

3.13.5.1. Cost and schedule estimates should include estimates for the resources needed to keep analysis and reporting tasks on schedule.

3.13.5.2. **Note:** Templates can be developed in EVCAS by each PE/PM or PE/PM office for use in building future estimates. Each template is a standard set of resources required to accomplish a specific type of mission or task. The identified resources and associated hour or dollar amounts should be based on previously conducted missions or tasks and actual charges collected. Each PE/PM can copy these templates into their estimates and use them as an accurate foundation, making changes or fine-tuning to meet specific requirements.

3.13.6. The PE/PM should not itemize a management reserve WBS. The management reserve should be based upon historical precedence, if any, or the uncertainty of the test objective or customer. The management reserve (risk and uncertainty) should be allocated against the individual WBS by using the productivity factor tool in EVCAS. The productivity factor is simply a percentage increase of the base cost of the WBS.

3.13.7. The PE/PM should only use Level of Effort (LOE) for those specific WBSs that are truly LOE activities (i.e., Test Management, early acquisition engineer support, as determined). A PE/PM should not set all WBSs to LOE so that the entire test project is LOE otherwise no valid schedule performance data is obtained. The Requirements Definition PS00, Test Directive PT00, and Reporting RFTD WBSs are not appropriate as LOE. **Note:** All LOE WBS codes should start with the letter "O".

3.13.8. The PE/PM should maximize the use the standardized, activity based WBS rules in [Table 3.2](#) below as appropriate.

3.13.9. If the project spans multiple fiscal years, customers should be informed of approximate fiscal year breakout. Future year estimates should only be used for customer budget/planning purposes. This information should be included in the Cost Summary Section of the Customer Agreement.

3.13.10. Verify Customer Agreement working estimate PMB profile (dashed blue line) on EVM chart in EVCAS accurately represents planned cost and schedule estimates once all data is entered into EVCAS.

**Table 3.2. Standardized Activity Based WBS Rules.**

| WBS Type                | WBS   | Title  | Start Date                                  | End Date                                |
|-------------------------|---|--|---|---|
| Requirements Definition | PS00  | “Requirements Definition (Customer Agreement)” (or [LOA] as appropriate) | 96 TW test assignment date                  | Customer Agreement signature date       |
|                         | Include all labor required to generate the customer agreement (includes government and contractor labor from each cost center needed); and include TDY costs as required.   |  |   |   |
| Provisioning            | PVxx  | Will identify the provisioning activity                                  | Estimated start date of activity            | Estimated end date of activity          |
|                         | Examples of provisioning activities are target design/preparation, T-2 aircraft modifications, facility modifications, instrumentation purchases, contracting actions, long lead environmental studies, or Radio Frequency Authorization (RFA). |  |   |   |
| Planning                | PT00  | “Test Directive”   | Estimated Customer Agreement signature date | Estimated Test Directive signature date |
|                         | The PE/PM should include all labor required to generate the Test Directive, Method of Test, and associated appendices (includes government and contractor labor from each cost center needed); and include TDY costs as required.               |  |   |   |
| Conduct                 | Cxxx  | Will identify like missions or the type of test and objective            | Determined by the PE/PM                     | Determined by the PE/PM                 |
|                         | Include all labor and materials required to execute the test mission (includes government and contractor labor from each cost center needed); and TDY costs as required.  |  |   |   |
| 96 TW Aircraft Missions | ZAxx  | Will identify like missions or the type of test and the objective.       | Determined by the PE/PM                     | Determined by the PE/PM                 |
|                         | Include all labor required to execute test mission (includes government and contractor labor from each cost center needed); and TDY costs as required.  |  |   |   |
| Analysis                | Axxx  | Data Analysis and Reduction  | No earlier than start of Active phase       | Data reduction completion date          |

|                             |  |  |                                |                         |
|-----------------------------|--|--|--------------------------------|-------------------------|
|                             | As required, for post mission analysis use, identify significant intermediate post mission analysis requirements. Include all labor required for data reduction and analysis during the Active phase (includes government and contractor labor from each cost center needed).  |  |                                |                         |
| Intermediate Reporting      | (Rxxx)   | Description of the intermediate report                 | Report start date              | Customer need date      |
|                             | As required, identify significant intermediate reporting requirements. These WBSs may be identified for automated customer surveys. A customer survey will be sent when the WBS is 100% complete.  |  |                                |                         |
| Final Technical Deliverable | RFTD   | Final Technical Deliverable (data type)                | Not earlier than first mission | Customer need date      |
|                             | Identify the preparation of the final technical deliverable. If no technical deliverable is required, the PE/PM should still use the final technical deliverable WBS to identify TW completion of the agreed activities in the customer agreement/SOC. An example of this case is the start date and end of the WBS as the final mission date. When the final technical deliverable is not a report, the PE/PM should input a cost of \$0.01. This WBS may be identified for an automated customer survey. A customer survey will be sent when the WBS is 100% complete. At least one “R” WBS is required for a PMB to be baselined. |  |                                |                         |
| Other                       | Oxxx   | Other project support                                  | Determined by the PE/PM        | Determined by the PE/PM |
|                             | OTMx   | Other Test Management – Any project management support | Determined by the PE/PM        | Determined by the PE/PM |

3.13.11. Cost and Schedule Impact Considerations for Non-DoD Customers are described in **Chapter 18** Commercial Customers and **Chapter 19** Foreign Military Sales Customers.

3.13.12. Cybersecurity and Enhanced Security Requirements

3.13.12.1. Cost and schedule provisions should be considered for project security involving Cybersecurity support with enhanced security or special access program requirements. This support includes personnel security and clearance/access processing; physical security support for facility preparation and accreditation; information technology and cybersecurity support for system development, lifecycle support, and authorization to operate (ATO) planning and preparation; communications/cryptographic security support; operations security planning for test execution; and security test plan preparation, coordination and approval.

3.13.12.2. This support is critical to ensure protection of critical program information (CPI). Provisions for 1% – 2% of the total SOC estimate is appropriate for this support. This does not include the resources associated with actual cyber vulnerability testing. Contact 96 Cyber Test Group (CTG) for additional assistance.

3.13.12.3. Additional considerations are described in **Chapter 11** Information Protection and Physical Security and **Chapter 12** Cybersecurity.

### **3.14. Document and Communicate Resource Provision.**

3.14.1. The resource provision plan is required to be documented and communicated per AFTCI 99-100, *Statements of Capability*. The PE/PM outlines the major resources and supporting organizations in the Customer Agreement. The approval and distribution of the Customer Agreement to the appropriate support organizations meets the intent of this requirement.

### **3.15. Determine Risk and Uncertainty.**

3.15.1. The PE/PM considers cost, schedule, and technical risk during the development of the customer agreement and throughout the life of the project. Formalized and documented business-case risk management is used in simulated ground test facilities.

#### **3.15.2. Cost Risk**

3.15.2.1. The PE/PM determines cost risk and a corresponding productivity factor as part of Develop Cost and Schedule Estimates in **paragraph 3.13**.

3.15.2.2. The assignment of the risk level should be based on professional PE/PM judgement of the likelihood of the risk event occurring and the consequence in terms of cost.

3.15.2.3. The PE/PM assigns the cost risk a level of LOW, MEDIUM, or HIGH.

3.15.2.4. In preparation for drafting the customer agreement, the PE/PM identifies the item(s) or issue(s) that should contribute to a greater than LOW cost risk and draft a risk statement.

3.15.2.5. The risk statement should include, at a minimum, the potential items or issues that should cause risk and the associated consequence. If there is an existing contributing or exacerbating circumstance, that information should be placed in the risk statement.

3.15.2.6. An example of a cost risk statement with an existing contributing factor is “The cost risk is assessed as MEDIUM. This project uses the XYZ fuse during a live weapon release mission. The XYZ fuse is known to have issues that preclude it from immediately going high order. If the XYZ fuse is not verified to have functioned high order, then the range will be locked down for a prescribed bleed down time. The project may incur the cost of the range time and associated instrumentation.”

#### **3.15.3. Schedule Risk**

3.15.3.1. The PE/PM assesses schedule risk.

3.15.3.2. The schedule consequences should be measured in terms of days of variance from the negotiated final technical delivery date.

3.15.3.3. The impact severity level of the schedule risk should be determined with the customer.

3.15.3.4. The impact severity levels should be Minimal Impact, Moderate Impact, and Significant Impact.

3.15.3.5. The assignment of the risk level should be based on professional PE/PM judgement of the likelihood of the risk event occurring and the impact in terms of schedule.

3.15.3.6. The PE/PM assigns the schedule risk a level of LOW, MEDIUM, or HIGH.

3.15.3.7. In preparation for drafting the customer agreement, the PE/PM should identify the item(s) or issue(s) that should contribute to a greater than LOW schedule risk and draft a risk statement.

3.15.3.8. The risk statement should include, at a minimum, the potential items or issues that will cause risk and the associated consequence. If there is an existing contributing or exacerbating circumstance, that information will be placed in the risk statement.

3.15.3.9. An example of a schedule risk statement with an existing contributing factor is “The schedule risk is assessed as HIGH. This project has a preliminary low priority for resources. If the A-10 aircraft is not available for the compressed schedule, then the project could experience a day for day schedule slip.”

#### 3.15.4. Technical Risk

3.15.4.1. The PE/PM assesses technical risk for the project. This technical risk is not associated with the test item.

3.15.4.2. Technical risk is any test technical, engineering, or integration risk that may prevent the project from meeting test objectives or design due to limitations within the 96 TW range, facilities, or instrumentation capability. Technical risk can be internally or externally generated.

3.15.4.3. The assignment of the risk level should be based on professional PE/PM judgement of the likelihood of the risk event occurring and the consequence in terms of schedule.

3.15.4.4. The PE/PM assigns the technical risk a level of LOW, MEDIUM, or HIGH.

3.15.4.5. In preparation for drafting the customer agreement, the PE/PM will identify the item(s) or issue(s) that will contribute to a greater than LOW technical risk and draft a risk statement.

3.15.4.6. The risk statement should include, at a minimum, the potential items or issues that will cause risk and the associated consequence. If there is an existing contributing or exacerbating circumstance, that information will be placed in the risk statement.

3.15.4.7. An example of a technical risk statement is “The technical risk is assessed as MEDIUM. If the Central Control Facility (CCF) display software is not reconfigured and tested by xx, then the project will lack some fundamental test objective data.”

### 3.16. Draft Customer Agreement Document.

3.16.1. The PE/PM drafts a customer agreement which contains the minimum data elements: points of contact, description of effort, cost, schedule, assumptions and constraints, risk and uncertainty, project support, customer responsibilities, and distribution statements. Customer Agreements can be in the form of a SOC, LOA or P&A. Most projects use a SOC and will be mostly discussed here. Customer Agreement templates are located in the 96 TW SharePoint™ Site in the *Test Process Policies* folder. Each of the below subparagraphs addresses a major section in the SOC template.

#### 3.16.2. Documenting Points of Contact

3.16.2.1. The PE/PM should, at a minimum, identify the 96 TW PE/PM, 96 TW TE, and Primary customer contact information to include electronic mail address and phone number.

3.16.2.2. The PE/PM should identify the LDTO and in what capacity the 96 TW is operating: ETO or PTO, which is determined during the Work Acceptance phase.

3.16.3. Documenting the Description of Effort: The PE/PM should describe the effort in sufficient detail to establish scope, goals, objectives and deliverables. These items should be delineated in the agreement.

#### 3.16.3.1. Scope

3.16.3.1.1. The PE/PM should prepare a scope statement.

3.16.3.1.2. The project scope should be developed using the Specific, Measurable, Achievable, Relevant, and Timely (SMART) technique.

3.16.3.1.3. All project work should occur within the intent of the project's scope. Any changes to the scope of the project should require a revision to the Customer Agreement (if possible) or opening of another JON.

3.16.3.1.4. A scope statement is essentially the "Bottom line up front" of the test projects requirement. The scope should include all known characteristics of the test's product or overall goal. All details may not be known at the Customer Agreement stage of the project. The scope statement should include a description of what is included and is not included in the project and the desired outcome of the project. *Examples of sufficient scope statements are below.*

3.16.3.1.4.1. "The scope of the Javelin All Up Round T&E is to plan, design, build an operationally representative terminal environment, and test the weapon system to the program's Key Performance Parameter (KPP) threshold specifications. The test event may include a distinguished visitor technical demonstration. The scope of this project includes all requirements gathering (NOT development), planning, acceptably safe test design, execution and reporting of the test."

3.16.3.1.4.2. “The scope of the SDB II Risk Reduction event is to plan, design and execute a test whose parameters validate the system’s performance for the logistics series. Flight testing should be conducted on the F-15/C aircraft encompassing 4 sorties/48 flight hours and 16 hours of ground test. Ground testing is scheduled to begin Feb 20 with flight test projected through Jul 21. The scope of this project includes all requirements gathering (NOT development), planning, acceptably safe test design, execution, deficiency reporting and delivery of final test report.”

### 3.16.3.2. Documenting Objectives

3.16.3.2.1. The PE/PM should document the high-level goals and objective of the project.

3.16.3.2.2. The objective should be drafted using the SMART technique or as close to the Method of Test objectives as possible.

### 3.16.3.3. Documenting Deliverables. The deliverables section of the Customer Agreement is to document those deliverables from the 96 TW to the customer.

3.16.3.3.1. During the Cost and Schedule estimates subprocess of the Customer Agreement process, the PE/PM and TE should work with the customer to define and agree upon the deliverable requirements and timeline with the customer’s approval.

3.16.3.3.2. The PE/PM should document the type of deliverable required and the estimated delivery date of major deliverables.

3.16.3.3.3. The exception of the deliverable being assigned a delivery date is the quick look report. The quick look report may have a delivery time frame of a specific number of hours or days following a test event.

3.16.3.3.4. **Note:** If the customer is required to deliver an item or document to the 96 TW, those requirements and impact of not receiving them by a specified date are to be documented in the Customer Responsibilities section of the Customer Agreement.

### 3.16.3.4. Documenting Cost. The PE/PM should include in the Customer Agreement the top level summary of costs as developed in [paragraph 3.13](#) Develop Cost and Schedule Estimates. If the work spans multiple fiscal years, the PE/PM should present the budget by fiscal year in the Cost Summary section of the Customer Agreement.

### 3.16.3.5. Documenting Schedule. The Customer Agreement should include the schedule in tabular form as developed in [paragraph 3.9](#) Create Project Schedule.

### 3.16.3.6. Documenting Assumptions and Constraints

3.16.3.6.1. The PE/PM should include, in the customer agreement, any assumptions and/or constraints that were present during the initial interchanges with the customer.

3.16.3.6.2. Constraints could be either internal or external to the 96 TW but should be significantly relevant to the test’s operation and timeline. For example, a constraint for a test being conducted during the first week of December could be the preceding week’s liberal leave holiday policy during which critical support may be limited.

3.16.3.6.3. The PE/PM should be cognizant of any limiting resourcing, scheduling or contractual constraints.

3.16.3.7. Documenting Risk and Uncertainty. The PE/PM will include the risk statements developed in [paragraph 3.15](#) Determine Risk and Uncertainty.

#### 3.16.3.8. Documenting Project Support

3.16.3.8.1. The PE/PM should document the specific support that the Wing should accomplish for the customer. This documented support should be sufficient enough to commit the Wing for support.

3.16.3.8.2. The PE/PM should address, at a minimum, the required support for aircraft operations, project management, instrumentation, engineer support, maintenance support (if known upfront), range support, and any required TDY. Engineering support includes but is not limited to expertise support for test and safety plan development, coordination, provisioning, mission planning and execution. This includes deficiency reporting, discrepancy management, technical writing and editing, data analysis, and test reporting.

3.16.3.8.3. **Note:** It is not expected that all possible information pertaining to test requirements is known up front. The Test Directive, along with its appendices, provides more detailed information to support the test. Therefore, it is imperative that the **PE/PM not delete** the statement in customer agreement in the Responsibilities Section that states: “All 96 TW organizations will support this test in accordance with assigned functional responsibilities as outlined in a Test Directive which will be published specifically for your project. Additionally, all 96 TW contracts will support in accordance with applicable requirements as documented in mission requests and/or work orders as appropriate.”

3.16.3.8.4. The following wording must also be included in any customer agreement that is transmitted to a customer when the safety review process is required: “AFTC Safety Review: The proposed test/activity must be reviewed using the procedures contained in AFTCI 91-202, *AFTC Test Safety Review Policy* and any local supplements to this instruction. To support this review, safety planning must begin early in the program.”

#### 3.16.3.9. Documenting Customer Responsibilities

3.16.3.9.1. The PE/PM should include in the customer agreement any items or documents that the customer is required to do or provide in support of the test and the impact of not providing those items according to the agreement schedule.

3.16.3.9.2. The PE/PM should include the following required, minimal customer responsibilities listed below in addition to those test specific responsibilities:

3.16.3.9.2.1. Provide program-level requirements, event/milestone schedule and test objectives.

3.16.3.9.2.2. Provide a single contact or test manager for the effort.

3.16.3.9.2.3. Provide required funding as outlined in this agreement.

3.16.3.9.2.4. Provide access to required test documentation, aircraft and personnel, test items, resources, and contractor facilities, as required.

3.16.3.10. Distribution Statement. The PE/PM must include the appropriate Distribution Statements, Export Control Notices, Destruction Notices, and security markings IAW DoDI 5230.24, *Distribution Statements on Technical Documents*, 23 Aug 12 Incorporating Change 2, Effective 1 Nov 17 and AFI 61-201, *Management of Scientific and Technical Information (STINFO)*.

3.16.3.11. Details regarding other Agreements for Commercial and Foreign Military Sales are found in **chapters 18** Commercial Customers and 19 Foreign Military Sales Customers.

### **3.17. Customer Agreement Coordination, Approval and Concurrence.**

3.17.1. Once the customer agreement document is drafted, the PE/PM obtains approval and required signatures. Customer Agreement coordination is accomplished using Livelink™.

3.17.2. The approval level for agreements should be IAW the test wing and group's Delegation of Approval (DOA) letter. Current DOA letters are on the 96 TW SharePoint™ Site in the *Test Process Policies* folder,

3.17.3. The PE/PM starts the Customer Agreement workflow when the agreement document is uploaded. The PE/PM should attach the completed DTO assessment form to the attachments folder of the workflow.

3.17.4. As soon as 96 TW coordination and signature are completed, the PE/PM downloads the Customer Agreement and forwards it to the customer for signature. Customer signature of the Customer Agreement represents formal acceptance of the Customer Agreement.

3.17.4.1. **Note:** The PE/PM may use the Department of Defense (DoD) Safe Access File Exchange (SAFE) to send CUI documents to recipients that do not have a .mil or .gov email address.

3.17.5. When the Customer Agreement is returned, the PE/PM uploads, as a minimum, the customer signature page to complete the workflow.

3.17.6. The final, signed Customer Agreement is placed in the electronic project folder in Livelink™.

### **3.18. Forecast Missions in CSE.**

3.18.1. 96 TW/XP should identify capabilities or resources whose consumption the Wing needs to monitor for strategic planning purposes.

3.18.2. The PE/PM should ensure that missions with these identified resources are input into the CSE long range forecast as early as practical.

3.18.3. The forecasted missions should include the minimum data elements of: desired start time, duration, JON, WBS, Priority, request agency, mission location, mission type, and resources.

### **3.19. Complete Administrative Activities in TPT.**

3.19.1. The PE/PM should baseline the final approved Customer Agreement. The Budgeted Cost of Work Scheduled (BCWS) in the PMB should match exactly total Customer Agreement value. Reference **Chapter 17** Earned Value Management for additional information regarding BCWS.

3.19.2. The PE/PM should update Budgeted Cost of Work Performed (BCWP) for PS00 to 100%. The PS00 completion date is the date of the customer signature on the Customer Agreement. Reference [Chapter 17](#) Earned Value Management for additional information regarding BCWP.

3.19.3. The PE/PM should change the JON status to Planning Phase (P) and input the completion date in TPT.

### **3.20. Rejected Customer Agreements.**

3.20.1. If an agreement is not accepted and customer terminates the test requirement, the PE/PM should change the JON status to Cancelled Phase (X) in TPT.

3.20.2. Once all charges have accrued in JOCAS, if a funding deferral exists, the PE/PM should initiate the Deferral Management Process as described in [paragraph 16.2.4](#) Deferral Management.

3.20.3. The PE/PM should continue to monitor the JON until it goes into Z-Closed (Z) phase.

## Chapter 4

### PLANNING “P” PHASE

#### 4.1. Planning Phase Overview.

4.1.1. The test project planning phase follows completion of the Requirements Definition phase. Once the customer approves and signs the Customer Agreement, the test project is authorized to enter the planning phase. It begins on the Customer Agreement signature date and ends on the Test Directive signature date. Accordingly, the planning phase is defined as the start of the test project during which the Test Directive and all supporting appendices are prepared and completed and most required test provisioning activities (PVxx) are accomplished. Accordingly, these should have been included in the PMB during the Requirements Definition phase.

4.1.2. **For Test Directive preparation use WBS: PT00 Title: Test Directive.** Any subsequent TD amendments associated with a new Customer Agreement should be sequentially numbered (PT01, PT02, etc.).

4.1.3. Start Date: Customer Signature date of Customer Agreement.

4.1.4. End Date: TD Signature Date.

4.1.5. Resources: All labor required to support TD development (includes government and contractor labor from each cost center needed); include TDY costs as required.

4.1.6. During the Planning phase, update BCWP for each active WBS twice monthly (before mid-month and before end of month JOCAS consolidation) until 100% complete.

4.1.7. Validate all Actual Cost of Work Performed (ACWP) charges as they accrue. Assess and reallocate any 0000 WBS charges to the appropriate WBS using WBS ACWP edit function in EVCAS. Reference Chapter 17 Earned Value Management for additional information regarding ACWP.

4.1.8. No test/training project enters the Active phase without a signed TD. 96 OSS/OSO Current Ops Flt will automatically allow ground task missions to be scheduled and executed with a JON in Planning status. PE/PMs should ensure sufficient JON funding is available to schedule and execute planned activities. Test and/or flight activities are still prohibited unless the TD is signed. Any test and/or flight missions submitted with a JON not in Active status will be placed on alert, scheduled and may be cancelled the day prior if TD is not signed. PE/PMs should follow EAFBI 13-200, *Eglin Range Mission Scheduling and Control*, for detailed directive guidance.

#### 4.2. Provisioning.

4.2.1. Provisioning for the test is an important component of the planning phase required to prepare for test execution in the Active phase. The elements of the provisioning include obtaining commitments for resources, performing aircraft temporary (T-2) modifications and coordinating long lead and extensive test logistics. The PE/PM obtains commitments for test resources necessary for planning and executing the project. Commitments for resources are achieved through other methods in parallel with the test and safety planning processes. Some basic test requirements that may be considered long lead items are: Radio Frequency

Authorization (RFA), environmental impact, flight test support provisioning activities, specialized CCF range data & telemetry displays, network connection approvals, and munitions handling approvals. Other long lead items that are less frequently experienced by a PE/PM are: laser clearinghouse requirements, FTS design, and special consideration of large footprint weapons. These are briefly discussed in [Chapter 9](#) Safety and [Chapter 10](#) Environmental.

4.2.2. For all provisioning activities use sequentially numbered WBSs: PV01, PV02, etc., supporting each required provisioning activity.

4.2.3. Resources: Each provisioning activity includes all the resources required to support that activity such as purchase of required materiel, labor costs (includes government and contractor labor from each cost center needed), shipping, modifications, and TDY support. Examples of provisioning activities are target design/preparation, T-2 aircraft modifications, facility modifications, instrumentation purchases, and contracting actions.

4.2.4. For schedule estimate, assign an estimated start and end date for each provisioning WBS.

4.2.5. **Radio Frequency Authorization.** This process starts by submitting a Radio Frequency Requirements Worksheet Form to the Eglin Installation Spectrum Manager (ISM) in the 96 CS/ SCXF Workcenter (the Gulf Area Frequency Coordinator is also in this Workcenter.). This form is located in the 96 TW SharePoint™ under *96 TW Policies/Test Process Policies/Templates*.

4.2.5.1. Initiate Frequency Assignment Process.

4.2.5.1.1. The PE/PM will ensure that a RFA (EAFB Form 584) is obtained prior to emitting for equipment that radiates or receives Radio Frequency energy, regardless of its power level or how frequently it is used. The Form 584 will serve as conditional approval to radiate as specified within the RFA.

4.2.5.1.2. The PE/PM will ensure that sufficient details are provided to complete the Gulf Area Frequency Coordinator (GAFC) Frequency Request Worksheet Form. 96 CS/SCXF is the focal point for obtaining a supporting radio frequency assignment for S-D equipment and also for receiving an accompanying RFA, if required.

4.2.5.1.3. Once a RFA is obtained, the TE will schedule the use of the frequencies covered in the RFA through range scheduling. It will also be noted that a RFA is only an authorization to use particular frequencies; it does not bar the use of those same frequencies by other organizations. To prevent conflicts, spectrum use is scheduled by time and area of operation.

4.2.5.2. Additional information on the Radio Frequency Assignment process is found in [Chapter 13](#) Radio Frequency Authorization.

4.2.6. **Environmental Procedures.** The PE/PM will submit an AF Form 813 to initiate the environmental impact process. The result of the submission which should contain all pertinent test details is either an environmental assessment, environmental impact statement or a categorical exclusion (CATEX). For more detailed information on the process, see [Chapter 10](#) Environmental.

**4.2.7. Flight Test Support Provisioning Activities.** When a test involves use of an aircraft, the PE/PM should be aware of several different processes. These processes may require temporary transfer of aircraft, aircraft modification, special flight clearances, connectivity approvals, or specific CCF display development. For procedures on aircraft modifications, see **Chapter 14 Aircraft Modifications and Flight Releases.**

**4.2.7.1. Aircraft Possession-Only Transfer MOA.** The aircraft possession-only loan process is governed by AFI 16-402, *Aerospace Vehicle Programming, Assignment, Distribution, Accounting and Termination* and its AFMC Supplement which describes the process in **paragraph 4.3.2** AFMC fleet management business rules provide additional guidance. These MOAs are MAJCOM level agreements which should be started as early as possible to avoid test delays. AFMC fleet management business rules and templates are located on AFTC/XP-OL SharePoint site, <https://usaf.dps.mil:/f:/r/sites/21396/2ltr/xp/Portfolio/TE%20Fleet%20Management/MOAs?csf=1&web=1&e=nIr9PS>.

**4.2.7.2.** Preparation of the draft MOA should begin as soon as the requirement is identified by the project PE/PM. The PE/PM should contact their group POC and 96 MXG, and then notify 96 TW/XPO of this requirement. Use the email link below for requesting the most current template and coordinating with 96 TW/XPO: [96tw.xpo.workflow@us.af.mil](mailto:96tw.xpo.workflow@us.af.mil).

**4.2.7.3.** The draft MOA is prepared by the ETO in coordination with all stakeholders IAW **Figure 4.1** Aircraft Possession-Only Transfer MOA/Attachment 2 Process. Once completed the draft MOA is forwarded to 96 TW/XPO for review and initial coordination with AFTC/XP-OL. 96 TW/XPO will incorporate feedback provided by AFTC/XP-OL to complete the final draft MOA. The ETO will review the final draft MOA and initiate the eSSS for wing coordination.

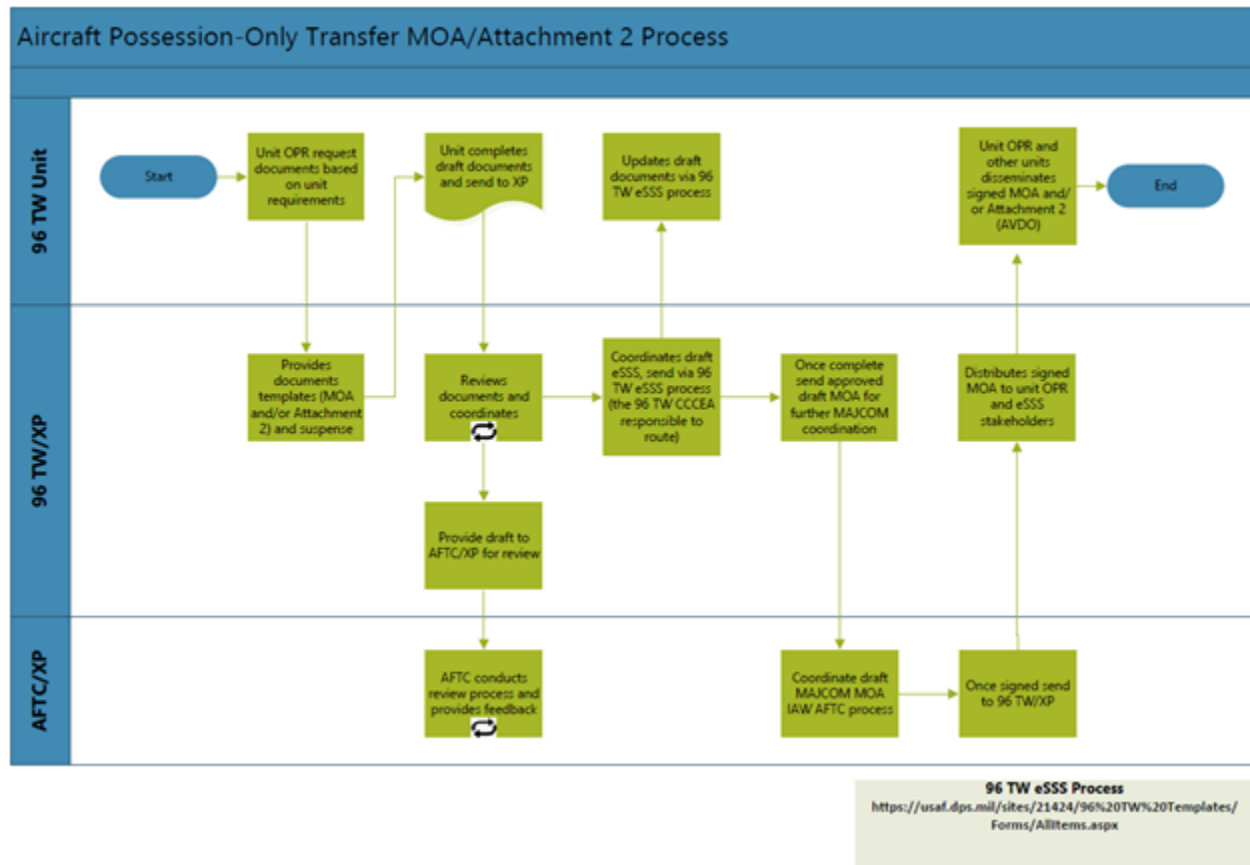
**4.2.7.4.** Once the draft MOA is approved by the 96 TW/CC, 96 TW/XPO sends the completed draft MOA package to AFTC/XP-OL for their review and routing for final MAJCOM coordination and approval.

**4.2.7.5.** Until final MAJCOM approval of the MOA is completed, possession change of aircraft must not occur unless waived by AFMC/A3F IAW AFI16-402\_AFMCSUP 4.3.2.3.2.

**4.2.7.6.** The status of MOAs in development, coordination, or expiring should be periodically reviewed to ensure compliance with AFI 16-402.

**4.2.7.7.** Once a MOA between MAJCOMs for an MDS is approved, an **Attachment 2**, Addendum to Overall Agreement, between Wing Commanders is required to implement Per-Tail Loan Specific aircraft transfers. Coordinate **Attachment 2** agreements IAW **Figure 4.1** below.

**Figure 4.1. Aircraft Possession-Only Transfer MOA/Attachment 2 Process.**



**4.2.8. Cybersecurity Coordination for Test.** Nearly all defense systems incorporate information technology in some form. Those systems require resiliency from cyber adversaries. This means that cybersecurity applies to weapons systems and platforms; Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance systems; and information systems and networks. Cybersecurity is a critical priority for the DoD and is a vital aspect of maintaining the United States' technical superiority. Additional information on Cybersecurity is found in **Chapter 12** Cybersecurity.

**4.2.9. Munitions Provisioning.** When a request for test is under consideration, the PE/PM will determine if conventional munitions are required to be expended to conduct the test. Air-to-air, air-to-ground, expendables (chaff, flare and decoys) and aerial targets/drones test project acquisitions can have long lead times of up to a year or more. These assets may also drive additional security requirements and approvals, or the need for additional or special support equipment. Without careful planning, projects could experience significant schedule delays and cost over-runs while waiting for assets and their permissions to be provided. It is important that a PE/PM is mindful of the schedule impacts that forecasting and allocating, receipt, handling and storage, and expenditure has on the test project. Additionally, the above

processes and timelines change significantly depending on whether the munition is a standard munition or not. PE/PM should communicate with 96MXG/MXOPT and munitions custodian throughout the process to ensure all required documentation such as technical data packages and checklists are in place to receive and process test assets. Additional information on Munitions is found in [Chapter 15](#) Munitions.

### **4.3. Developing the Test/Training Directive.**

4.3.1. The PE/PM is responsible for developing the TD with help from the TE and representatives from necessary supporting agencies. The signed TD authorizes execution of the test per EAFBI 13-212, *Range Planning and Operations*. The TD which includes the Method of Test or CONOPS, flight clearances (if required), and appropriate appendices is approved when signed. The TE will refer to the TD throughout the test project, as it provides directive on all facets of the test. While the focus of this document is test, training directives require similar appendices and approvals for range operations. PE/PM for these non-test projects should use these standard best practices.

#### **4.3.2. Develop Method of Test or CONOPS**

4.3.2.1. The test team ensures that the Method of Test or CONOPS is prepared to meet the objectives mutually agreed to by the TEO, the system program office or other customer and participating agencies.

4.3.2.1.1. If, during the development of the Method of Test or CONOPS, the TE indicates use of DTO, the Customer Agreement must be revised to capture the addition of DTO IAW AFTCI99-103, *AFTC Distributed Test Operations*.

4.3.2.2. As the test conductor/director, the TE is the primary author of the Method of Test or CONOPS and is ultimately responsible for its timely completion. It is a fundamental requirement for the TE to develop a thorough understanding of the purpose of the test item and its operation.

4.3.2.3. The Method of Test or CONOPS is the first appendix to the TD and is a detailed plan for conducting the test. It covers specific test objectives and execution schedule, test item description, materiel, instrumentation requirements, test methodology, success criteria, and data products required. Additionally, details of data analysis and data handling should be included in the Method of Test or CONOPS.

#### **4.3.2.4. STAT Consideration by a Trained STAT Practitioner**

4.3.2.4.1. The PE/PM ensures the Method of Test or CONOPS contains a section regarding whether or not STAT was used. The assigned STAT practitioner is responsible for writing this section of the Method of Test or CONOPS. When STAT is not used, the section should briefly include the reason. When STAT is used, the section should highlight the applicability to the test as well as any limitation of the methods to be used. The TE and STAT practitioner should identify the objectives, key test conditions, and measures of system performance for STAT focus, estimate and

justify the number of selected test points, describe the test point selection method/algorithm and criteria for maximizing information collected, describe the analysis used to draw conclusions and a justification if statistical analyses are not used, and statistical or coverage measures of merit that “grade” the design quality and remaining risk.

4.3.2.4.2. More information on STAT is found in **Chapter 20** Scientific Test and Analysis Techniques (STAT)

4.3.2.5. Methods of Test or CONOPS document why tests will be accomplished (the objectives), how tests will be accomplished (the test techniques and test points), what potential hazards are associated with the test and the proposed mitigations for those hazards, what data will be acquired and how that data will be collected (instrumentation requirements), how data will be used to answer the objectives (the data analysis plan), why the test may not be fully successful (limitations as applicable), and when and what type of technical deliverable is needed (management information).

**4.3.3. Research or Develop Profiles.** The TE will ensure that flight, ground, or safety profiles are identified or generated in support of the Method of Test IAW EAFBI 13-200, *Eglin Range Mission Scheduling and Control*, Chapter 7, *Mission Profiles*.

4.3.3.1. The test team should refer to “Policy for Eglin Gulf Test & Training Range (EGTTR) Live Ordnance Employment” when developing profiles. This policy memorandum outlines the process for all test and training programs employing live ordnance in the Gulf of Mexico. The policy applies a series of required control procedures to minimize risk to the public and maximizes range sustainability. The memorandum is located on the 96 TW SharePoint™ site in the *Test Process Policies* folder.

#### **4.3.4. Develop Test Unique Test Hazard Analysis**

4.3.4.1. The TE will ensure that a Test Hazard Analysis Form is complete for each identified hazard. Each one addresses a single hazard, but may include multiple causes, minimizing procedures, emergency procedures and comments. While not mandatory, it is recommended that the TE use the AFTC Form 5000, *Test Hazard Analysis Form*.

4.3.4.2. The Test Hazard Analysis Form is used to document identified hazards, their causes and effects, and minimizing and emergency procedures; provides a vehicle for the Safety Review Board (SRB) to assign risk levels; and presents a platform for creating a historical database which should make future planning much easier.

4.3.4.3. The TE and test aircrew will ensure the analysis is completed and delivered to the TSO IAW the published timeline prior to the SRB.

#### **4.3.5. Technical Review**

4.3.5.1. Each Method of Test should receive at a minimum a squadron level technical review and assessment on whether to host a technical review board.

4.3.5.1.1. Technical reviews should assess test requirements, techniques, approaches, and objectives.

4.3.5.2. Approval of the Method of Test should be accomplished via the TEO’s Method of Test Livelink™ workflow.

4.3.5.2.1. The PE/PM should ensure the Method of Test is reviewed and coordinated upon by STAT practitioner.

4.3.5.2.2. If the test project is an ACAT I (i.e., IAC, IAM, IC, and ID) or has Office of the Secretary of Defense (OSD) or congressional oversight and will result in a technical deliverable that makes a recommendation to a program office or Milestone Decision Authority, the PE/PM ensures that the 96 TW/CT is a required reviewer of the Method of Test in the Livelink™ workflow.

#### 4.3.6. Safety Review

4.3.6.1. The PE/PM will coordinate with the TE to ensure that a safety review has been accomplished and documented. This is done by initiating the Range Safety Engineer (RSE) Assignment Workflow in Livelink™ (<https://livelink.eglin.af.mil/livelink/lisapi.dll/open/17906439>). It requires the draft MOT to initiate and the RSE will be assigned (if not already established) in the process.

4.3.6.2. The safety review will be accomplished after the TEO has completed the technical evaluation of the Method of Test or CONOPS. Although normally the safety review is held as late in the planning cycle as practicable, complex events may require multiple safety reviews and these will be started as soon as possible. The first assessment of the scope of the SRB(s) will be made at the Kick-off meeting.

4.3.6.3. The SRB is a formal safety review meeting attended by independent safety reviewers and project personnel. It is chaired by a designated Wing or Complex Test Safety Office representative. A safety review will be accomplished for all tests IAW AFTCI 91-202. Any exceptions will be coordinated through the appropriate TEO and TSO.

4.3.6.4. Information obtained from the safety review is used to prepare the Safety Appendix, which is required before the TAB can be scheduled.

4.3.6.5. The Safety Appendix will assign a risk level to each hazard, and SRB chairperson will ensure additional THA forms resulting from the SRB's discussions are also completed as necessary.

4.3.6.6. IAW AFTCI 91-202 and locally published instructions, any changes in the Method of Test/CONOPS after the safety review has been completed must be communicated to the TSO and may result in reaccomplishment of the test safety review process.

4.3.6.7. **TD Expiration Time Limits.** AFTCI 91-202, *AFTC Test Safety Review Policy*, paragraph 8.4, requires safety plans be reviewed at least every three years to ensure identified hazards and mitigation measures are appropriate and to incorporate any lessons learned. The 96 TW supplement further states that Project Managers or equivalent will ensure their programs are reviewed IAW the timelines stated above. Those time reviews should include all the appropriate stakeholders and those inputs consolidated and archived with the test documentation. The review will be coordinated with 96 TW/SEU.

4.3.6.8. More information about Safety and their processes are located in [Chapter 9 Safety](#).

4.3.7. If required, attach Logistics Appendix. The PE/PM should provide a copy of the Method of Test to the Logistics Management Specialist. The Logistics Management Specialist should determine if a logistics appendix is required. If not, a statement should be provided to that effect along with specific verbiage for inclusion in the Test Directive.

4.3.8. **Flight Clearance Documentation.** If required, once the PE/PM receives the flight clearance or equivalent document, the PE/PM should file it in the Livelink™ project folder.

#### 4.3.9. **Test/Training Directive Approval**

4.3.9.1. *All* projects require a signed Directive, prior to test execution. Additionally, all projects utilizing ETTC resources require approval, per EAFBI 13-212, before executing missions on the range. These project approvals may be covered by Test or Training Directives. Some projects may require Test Approval Briefs (TAB) which can range from a formal meeting with a quorum to an informal TAB that is a review and approval of the Test Directive in Livelink™.

4.3.9.1.1. The TAB is an executive level safety review conducted IAW AFTCI 91-202 and locally developed supplements. It is established to provide a management-level review of test operations and safety. The TAB is the forum where control decisions are made and the residual risk level identified at the SRB is accepted, rejected, minimized further or elevated by the Test Execution Authority (TEA) to a higher authority for a decision. The TAB does not provide airworthiness certification, external store flight clearances, design safety certification, or test safety criteria (for example, impact footprints). These certifications must be obtained from appropriate sources and reviewed and approved at the SRB, which occurs prior to conducting the TAB. During the TAB, the TEA is authorized to establish additional test limitations or restrictions when required.

4.3.9.1.2. The TEA signature on the Test Directive (not the approval of the TAB) represents the authority to execute.

4.3.9.1.3. A test directive is still required for software testing, even though only organic organization resources are used. However, once the initial test directive is approved, test directive amendments are not required for follow-on software versions, especially for Agile and Continuous Integration/Continuous Deployment (CI/CD) software development test processes, unless the testing environment changes significantly to require additional safety, logistics or environmental evaluations. New Methods of Test or Concept of Operations (CONOP) will still be required for these tests, and will be coordinated, approved, and signed at the appropriate level in the TEO, and then saved in Livelink™.

4.3.9.2. The assessed safety risk of the test determines the level at which the TAB must be presented. Any acceptance of risk and test approval will be IAW AFTCI 91-202 and local supplements.

4.3.9.2.1. The TEO commander/director ensures that for any TAB requiring the Wing Commander's signature, that the Wing Technical Director (96 TW/CT) is provided an adequate review of the test project prior to conducting the TAB with the Wing Commander.

4.3.9.3. Once the TAB has been conducted, the PE/PM will ensure that the Test Directive is signed electronically through the Livelink™ workflow and filed in the Livelink™ project folder.

4.3.9.4. As of the date of publication and going forward, if slides were presented at the TAB, the PE/PM should ensure that the slides and additional requirements/stipulations that were directed by the TEA and any minutes are filed in the Livelink™ project folder. TAB Minutes are included in the Test Directive, normally added as the last appendix.

4.3.9.4.1. If the briefing is classified or contains classified elements, the PE/PM will file the briefing IAW established TEO procedures for classified information.

4.3.9.4.2. Similarly, if the briefing is proprietary or contains proprietary elements, the PE/PM will file the briefing IAW established TEO procedures for proprietary information.

4.3.10. **Test Directive Distribution.** The PE/PM will ensure that the approved Test Directive is distributed to organizations requiring the Test Directive for participation or support.

4.3.11. **Off-Base Testing Approval Requiring E-OMS Contractor Support.** The PE/PM will work with the assigned Range Engineer to secure Range Group Director or Deputy Director review and approval. Advanced notice for the review and approval is delineated in EAFBI 99-105, *Management and Documentation of Task Requirement*.

#### **4.4. Complete Administrative Activities in TPT after Test Directive Approval.**

4.4.1. The PE/PM should update BCWP for WBS PT00 to 100%. The completion date is the date the Test Directive was signed. Reference [Chapter 17](#) Earned Value Management for additional information regarding BCWP.

4.4.2. Review status of all provisioning WBSs and update appropriately. Normally, all provisioning WBSs should be 100% complete at the end of the Planning phase, but some not required for initial test support may complete later. Continue to monitor until all are 100% completed.

4.4.3. The date the Test Directive is signed becomes the official start date of the Active phase. The PE/PM should enter this start date into TPT and change the JON status from Planning to Active "A".

4.4.4. Test projects should not go into the Active phase without a signed Test Directive. The exception is those projects approved for early turn-on. Early turn-on approval allows certain limited missions to be conducted prior to obtaining a signed Test Directive. PE/PMs should follow EAFBI 13-200, *Eglin Range Mission Scheduling and Control*, for early turn-on process.

4.4.5. Ensure completed/signed TD is filed in electronic project folder in Livelink™.

#### **4.5. Changes in Test Requirements - Rebaselining.**

4.5.1. Any time after completion of the initial test project Planning Phase, if a customer changes or adds new test requirements beyond management reserve funding or a change in scope is driven by test results, the test project may revert back to the planning phase and the Active phase may need to be terminated.

4.5.2. If significant changes to the program occur, a revised customer agreement must be negotiated and the baseline amended IAW 96 TWI 99-100, *Test Project Management*. A revised Customer Agreement is a formal, numbered change to the customer agreement. Once signed, the program is rebaselined, forming a new PMB. Customer Agreement revisions and Test Directive amendments are discussed in detail in **Chapter 16**, Monitor and Control.

4.5.3. The PE/PM should establish a new WBS code for a labor-intensive Customer Agreement revision (i.e., PS01). For all Test Directive amendments, the PE/PM should establish a new WBS code for the Test Directive amendment (i.e., PT01).

4.5.4. The milestone dates of the WBS codes should begin on the date that the Active Phase was terminated and end on the Test Directive Amendment Approval Date.

4.5.5. The PE/PM should rebaseline the test project in EVCAS within 5 business days of the customer signing the Customer Agreement revision.

4.5.5.1. A JON must have at least one “R” WBS identified for a customer survey to baseline.

4.5.6. The PE/PM should update percent complete for the PS01 WBS to 100% completion on the date that the customer signs the Customer Agreement revision.

4.5.7. The PE/PM should update percent complete for the PT01 WBS to 100% completion on the date that the Test Directive is signed.

4.5.8. The TE should coordinate any scope changes with the PE/PM, who should then contact the appropriate organizations to ensure existing appendices remain valid and in effect. This may require re-accomplishment of the Test Safety Review process IAW AFTCI 91-202 and locally published supplements.

4.5.9. Following any rebaselining, the test project will need to change to the appropriate JON phase in TPT.

4.5.10. When rebaselining, the appropriate revision reason, either internal or external, should be selected from the AFTC approved Customer Agreement Revision reasons matrix. The reason for the rebaselining action should be reported to support test project management reviews. All rebaselining actions are tracked and reported via the AFTC Council metrics process. Any questions or clarification of rebaselining reasons should be referred to 96 TW/XPT.

4.5.11. Meeting customer expectations for test project cost, schedule, technical performance, and deliverables is a high priority for the 96 TW and the AFTC. Please be aware that PMB rebaselining actions are carefully reviewed and analyzed by 96 TW and AFTC leadership to better understand and evaluate our business operations and our ability to meet customer requirements and performance expectations.

4.5.12. Changes to the PMB, not affecting the overall PMB cost and schedule, are accomplished through replanning. See **Chapters 16** Monitor and Control and 17 Earned Value Management for more information.

#### 4.6. Customer Substantially Delays Test.

4.6.1. If the customer substantially delays the test project (greater than 60 days), the PE/PM should consider changing the JON phase to Suspended (S) in TPT unless on-going project activity is needed. The Suspended phase suspends metrics tracking and prevents internal JOCAS charges.

4.6.1.1. When entering a project into Suspended (S) phase, a comment is needed describing why the project is entering this phase as well as an estimated date the project will return to an ongoing TPT phase. TPT does not allow an estimated return to ongoing status date more than 365 days in the future.

4.6.1.2. PE/PMs are responsible to revalidate suspended projects if the estimated return to ongoing status date has elapsed or the project remains in Suspended (S) status for more than 1 year. A weekly automated message will be sent to the PE/PM to accomplish the revalidation of suspended projects.

4.6.2. The PE/PM should continue to monitor all JON charges in JOCAS until the customer is ready to restart the effort. Once ready to restart, the JON TPT phase is changed to the appropriate phase by the PE/PM and then replan or rebaseline as required.

4.6.3. JONs in Suspended (S) phase restricts individuals from posting any labor, cost or Products & Services (P&S) data from any JOCAS “on-line” screens. However, charges from external systems are still able to be uploaded. Refer to EAFBI 65-601, *Job Order Cost Accounting Operations*, for more information.

4.6.3.1. Occasionally, charges show up after JONs are put in the suspense phase. The TW must adjudicate and process these charges if valid. Legitimate charges to the program should be billed to the customer.

4.6.3.2. When notified of valid late JON charges, PE/PM should contact their group’s financial chief. The PE/PM should not change the TPT JON phase themselves to allow these charges. Uncoordinated changes may impact TW Metrics. The financial chief will coordinate the JOCAS phase change with 96 TW/FMP to allow the valid charges. Once the charges are submitted, the JOCAS phase will return to its previous phase. This process is normally accomplished during the same day.

4.6.4. The PE/PM should inform the test team and customer on the project’s entry and exit of the Suspended (S) phase.

#### 4.7. Customer Terminations during Planning Phase.

4.7.1. If the customer terminates the test requirement during this phase, the PE/PM should change the JON status to Cancelled Phase (X) in TPT.

4.7.2. Once all charges have accrued in JOCAS, if a funding deferral exists, the PE/PM should initiate the Deferral Management Process as detailed in [paragraph 16.2.4](#) Deferral Management.

4.7.3. Any remaining customer funds should be returned to the customer.

4.7.4. The PE/PM should continue to monitor the JON until it goes into Closed (Z) status.

## Chapter 5

### ACTIVE “A” PHASE

#### 5.1. Active Phase Overview.

5.1.1. The Active phase begins when the Test Directive is signed (and no earlier) and ends no earlier than the day of final mission and/or completion of data reduction/analysis. Test Directive approval by the TEA authorizes the scheduling and execution of test activities IAW EAFBI13-212.

5.1.2. Change the JON status in TPT to Active (A) phase to signify TD approval and entrance into the test execution phase.

5.1.3. Training Directive complies with the same Active phase constraints laid out in [paragraph 5.1.1](#) above.

#### 5.2. Test Execution Material (Test Cards, Test Matrices, etc.) Preparation

5.2.1. Test Cards are generally developed by the TE in coordination with the aircrew. The test cards usually contain mission information pertaining to aircraft configuration with weight and balance, aircraft operating limits critical to the test point, test limits, initial conditions, challenge and response items, flight test techniques, allowable data bands or test condition parameter tolerances, data acquisition system settings, expected results, risk level, and “go/no-go” criteria. The test matrices are generally developed by the TE in coordination with the customer and test team of subject matter experts in the area of the particular test. Test matrices may include hundreds of various runs of test points required to accomplish the customer’s objectives.

5.2.2. The TE should ensure that test execution materials are developed IAW approved Method of Test, SRB, TAB requirements, environmental constraints and the issued RFA.

5.2.3. Test Cards must be approved based on the safety risk and at the levels as the TAB IAW AFTCI 91-202, *AFTC Test Safety Review Policy*, 96 TW Supplement.

#### 5.3. Forecast Mission Disposition.

5.3.1. The test team ensures forecasted missions are entered into CSE.

5.3.2. The test team relates the same forecasted mission to submitted missions until the Customer Agreement mission is 100% productive. This action allows an analyst to determine the number of submitted and conducted missions required to complete mission objectives.

5.3.3. The test team withdraws forecasted Customer Agreement missions that are no longer required to meet 100% of a Customer Agreement mission objective, and adds a withdraw reason.

#### 5.4. Loading Checklists and Approvals.

5.4.1. For developmental test items, the TE ensures that appropriate checklists have been approved by the appropriate approval authority. Those include but are not limited to: transportation tie down, aircraft loading, aircrew, and munitions handling.

## 5.5. Mission Setup Verifications.

5.5.1. The TE ensures that prior to mission conduct and to reduce risk, that range configurations, control room setup and display, aircraft instrumentation, and data acquisition to include processing and storage are validated and verified to conform to the requirements of the approved Test Directive.

## 5.6. Mission Briefs.

5.6.1. The PE/PM may assist the TE, as necessary, in the preparation of a pre-brief that contains details such as the mission objective, pertinent security information, call signs and frequencies, emergency procedures, environmental constraints, and “go/no-go” requirements, as appropriate. This briefing should also include those procedures and restrictions specified from the Safety Appendix and any additional TAB requirements IAW AFTCI 91-202, *AFTC Test Safety Review Policy*, and locally published supplements. This may not be the only required briefing. The TE should advise the PE/PM if other input is required to additional required briefings.

## 5.7. Conduct the Mission(s).

5.7.1. While the TE is responsible for conducting the mission, the PE/PM remains involved during the test conduct phase providing continuous monitoring, with emphasis on project progress and finances.

5.7.2. Knock it Off Authority. Any mission participant, regardless of rank or employee status, who sees an unsafe or potentially unsafe act has the authority to immediately call a “knock it off.” Neither the TE nor the PE/PM has the authority to limit the use of a “knock it off” as it pertains to the safe execution of a test.

### 5.7.3. Safety Mishap Procedures

5.7.3.1. Both the PE/PM and TE should be familiar with the required safety mishap procedures and employ those as listed in EAFBI 13-212, *Range Planning and Operations*.

5.7.3.2. If there is an injury, immediately call 911 and then contact the Joint Test and Training Operations Control Center (JTTOCC) to advise them of the circumstances and to allow them to direct military resources to assist with the situation.

### 5.7.4. Unusual/Unexpected Test Event

5.7.4.1. Unexpected events or test results will require a pause in test execution.

5.7.4.2. These events will be coordinated with the Test Safety Office IAW AFTCI 91-202, paragraph 7.4. and locally published supplements.

### 5.7.5. Environmental Mishap Procedures.

5.7.5.1. All spills and accidental discharges of petroleum, oils, lubricants, chemicals, hazardous waste or hazardous materials, regardless of the quantity, must be reported by the responsible organization (Any spill of any material, regardless of quantity). If the spill/discharge is a threat to life, health, environment, or has the potential to cause a fire, call 911 immediately. **When in doubt – Call 911.**

5.7.5.2. The JTTOCC should be contacted immediately and advised of the circumstances. In addition, the responsible organization must contact the Environmental Management Branch Compliance Office (96 CEG/ CEIEC). The responsible organization must submit the spill to 96th CEG/CEIEC within four (4) hours.

5.7.5.3. The report to 96 CEG/CEIEC may be done electronically or by hard copy. Electronic reporting is via 96th CEG/CEIEC webpage (Spill Planning and Response - Home (af.mil)). The Eglin AFB Spill Discharge Report is also found on that webpage. That report is either hand-carried to 96th CEG/CEIEC Building 592 or faxed to 882-7675.

5.7.5.4. Additional information is available on the Spill Planning and Response webpage above, or contacting the Emergency Spill Response Manager, Jonathan Kramer, at 850-240-1628 or 850-803-0009.

5.7.6. **Public Affairs Procedures.** Any requests for statements by news media (video, print, social media, etc.) should be referred to 96 TW Public Affairs Office. 96 TW/PA should release any official statement. Also contact them for developing any news releases for test programs. More information about Release of Information to the Public is in [paragraph 12.2.11](#).

## 5.8. Post Mission Report.

5.8.1. The TE completes a CSE Post Mission Report IAW EAFBI 13-212, *Range Planning and Operations*.

## 5.9. Munitions Expenditure.

5.9.1. The TE reports the project munitions expenditures IAW EAFBI 13-212, *Range Planning and Operations*, paragraph 5.6, *Munitions Tracking and Reporting*.

## 5.10. Complete Administrative Activities in TPT upon Test Activities Completion.

5.10.1. The PE/PM updates BCWP for Conduct WBS(s) to 100% when each incremental WBS is complete.

5.10.2. No JON moves to the Reporting phase while conducting missions contributing to the Test Directive objectives. Range clean up and reconfiguration missions do not contribute to the successful completion of customer objectives, therefore they may be conducted in the Reporting Phase.

5.10.3. The PE/PM should continue to monitor all conduct WBSs until all are 100% complete.

5.10.4. Review status of any provisioning WBSs that may still remain open and update appropriately. Normally, all provisioning WBSs should be 100% complete at the end of the Planning phase, but some may have remained open through the Active phase. Continue to monitor until all are 100% completed.

5.10.5. If the project does not have a final, traditional technical deliverable for the RFTD WBS, the PE/PM updates, upon completion of active testing, the BCWP for RFTD to 100% on final day of active testing. Ultimately, this WBS updated to 100% indicates the TW has completed all responsibilities defined in the customer agreement/SOC. The update of this WBS should also represent the completion of the test project to the customer if all other WBSs are 100%.

5.10.6. After completion of all missions and data analysis that contribute to the Test Directive objectives, the PE/PM should change the JON status from Active to Reporting (R) in TPT.

#### **5.11. Changes in Test Requirements - Rebaselining.**

5.11.1. Any time after completion of the initial test project Planning phase, if a customer changes or adds new test requirements or a change in scope is driven by test results, the test project may revert back to the Planning phase if the Active phase needs to be terminated.

5.11.2. For any change in technical requirement that cannot be accomplished within the scope of the existing Customer Agreement or Test Directive, the PE/PM coordinates with the TE and revises the Customer Agreement and/or amends the Test Directive, as required. The revised Customer Agreement, once signed, updates the PMB and is referred to as rebaselining or a rebaseline.

5.11.3. When ready to start active testing again and the TD signed, the PE/PM changes the JON status to Active (A) phase in TPT.

5.11.4. The PE/PM should coordinate the changes with the appropriate organizations to ensure existing appendices remain valid and in effect. This may require reaccomplishment of the Test Safety Review process IAW AFTCI 91-202 and locally published supplements.

5.11.5. PE/PMs should refer to [paragraph 4.5](#) Changes in Test Requirements – Rebaselining for additional process requirements.

#### **5.12. Customer Substantially Delays or Terminates Test.**

5.12.1. When the customer substantially delays their test, PE/PMs will use the same process described in [paragraph 4.6](#) Customer Substantially Delays Test.

5.12.2. When the customer terminates their test during the Active Phase, PE/PMs will use the same process described in [paragraph 4.7](#) Customer Terminations during Planning Phase.

#### **5.13. Return to Pre-Test State.**

5.13.1. The TE should schedule and conduct missions that reconfigure the range or support equipment to its pre-test state. Aircraft and equipment de-modification should occur during the Reporting phase.

## Chapter 6

### REPORTING “R” PHASE

#### 6.1. Reporting Phase Overview.

6.1.1. The Reporting phase begins with the completion of the Active phase to include reduction and analysis of all the data. During this phase, the final technical deliverable is generated, reviewed, delivered and accepted by the customer. Deliverables can be in the form of Quick Look Report (QLR), Technical Report, Letter Report, or Data Package. The PE/PM should work with the project team to facilitate the completion and timely delivery of the technical deliverable. The test team ensures that deficiency reports are accomplished and all reported are properly archived in accordance with governing laws and guidance. The test wing target is 90 days to complete reports and provide them to the customer.

6.1.2. Not all customer requirements include an actual report. The “R” WBS updated to 100% indicates completion of TW responsibilities in the customer agreement. The fulfillment of this WBS may be as simple as an email or phone call to the customer. Additionally, the TPT/JOCAS R-Reporting phase, while closely aligned with the final “R” WBS, does not necessarily occur at the same time. The PE/PM may keep the JON in the R-Reporting phase for additional time to wrap up work on the JON and allow final charges to accrue. This additional time is nominally several JOCAS cycles and based on the PE/PM’s judgement.

#### 6.2. Draft the Technical Deliverable.

6.2.1. The PE/PM ensures the technical deliverables included in the Customer Agreement are delivered in time to support the designated milestone or decision review.

6.2.2. In the event that the agreed upon report type is not suitable consider both what the customer desires (to include scope and timeliness) and what is necessary to properly document the test.

6.2.3. When applicable, the STAT practitioner performs or evaluates any data analysis, reviews the technical report, and estimates remaining uncertainty in test results (where critical) as a statistical, probabilistic, or qualitative confidence in results and estimate of residual risk to system quality.

#### 6.3. Technical Deliverable Approval.

6.3.1. Each technical deliverable receives an appropriate TEO technical review assessing whether to require a Technical Review Board focusing on the technical adequacy of the report conclusions.

6.3.2. Technical reviews will assess test requirements, techniques, approaches, and objectives.

6.3.3. Approve technical deliverables (Quick Look Reports, Data Packages, Letter Reports, and Technical Reports) via the TEO’s Livelink™ workflow.

6.3.3.1. If the test project's technical deliverable (which includes recommendations to the program office or MDA) is an ACAT I (i.e., IAC, IAM, IC, and ID) or has OSD or congressional oversight, the PE/PM ensures that the 96 TW/CT is the approver of the technical deliverable in the Livelink™ workflow unless the TEO elects to have the Wing Commander approve the technical deliverable. Then the 96 TW/CT becomes a required reviewer.

#### **6.4. Monitor Technical Deliverable Progress.**

6.4.1. The PE/PM should monitor technical deliverables and completion status and resolve issues to ensure timely production.

#### **6.5. Archiving and Administration.**

6.5.1. The PE/PM ensures technical deliverables are properly identified and handled in accordance with current security regulations.

6.5.1.1. If the technical deliverable is classified or contains classified elements, the PE/PM should file the documentation IAW established TEO procedures for classified information.

6.5.1.2. Similarly, if the technical deliverable is proprietary or contains proprietary elements, the PE/PM should file the briefing IAW established TEO procedures for proprietary information. Do not file proprietary information in an unauthorized Livelink™ project folder.

6.5.2. The PE/PM must also ensure that documents are properly marked for and handled in accordance with AFI 61-201, *Management of Scientific and Technical Information (STINFO)*.

#### **6.6. Complete Administrative Activities in TPT for Reporting Phase(s).**

6.6.1. Upon completion of the final technical deliverable, the PE/PM updates BCWP for RFTD to 100% on the customer acceptance date.

6.6.2. Updating this WBS represents test project completion for the customer. This completion date is used to calculate project schedule effectiveness for TW and AFTC metrics.

6.6.3. Change TPT phase from R-Reporting to the next phase, usually Y-Close-out. This is normally done after all project work and charges have accrued. JOCAS allows charges from both external and internal sources while the project remains in R-Reporting.

## Chapter 7

### CLOSE-OUT “Y” PHASE

#### 7.1. Close-out Phase Overview.

7.1.1. After the project is complete and all expected charges have billed, the PE/PM should make final updates in EVCAS and TPT and place the project in “Y” status. Do not place a JON in Close-out “Y” Phase until all technical support is complete. Close-out is the final phase prior to the project being archived. During this phase all acceptable charges should be expensed, all erroneous charges should be reconciled, and residual funds should be returned to the customer.

#### 7.2. Close-out Letter and Lessons Learned.

7.2.1. The PE/PM ensures for every test or training project completed, a Close-out letter is provided to the customer and filed in the Livelink™ project folder. A sample of a Close-out letter is in the 96 TW SharePoint™ site in the *Test Process Policies* folder. An email is sufficient if it includes the data elements.

7.2.2. For every test support project that closes, the PE/PM prepares a Close-out letter that documents as-executed project cost, schedule and scope.

7.2.2.1. This Close-out letter constitutes the authority to refund any remaining unexpended funds to the customer.

7.2.2.2. The PE/PM provides the Close-out letter to the customer and 96 TW Financial Management Office.

7.2.3. Lessons learned are captured in the format shown in AFTCI 91-202, 96 TW Supplement.

7.2.3.1. The author of the Close-out letter is responsible for requesting any lessons learned from personnel supporting the activity and consolidating the responses as an attachment to the Close-out letter.

7.2.3.2. The Close-out letter and its attachment will be archived as described in AFTCI 91-202 96 TW Supplement.

#### 7.3. Customer Feedback.

7.3.1. Customer feedback is solicited for projects soon after they are completed or cancelled, and annually for projects lasting over 365 days. Feedback can be provided at any time during the project in accordance with current Test Wing procedures.

#### 7.4. Excess Funds Balance Management.

7.4.1. The PE/PM monitors the project once it enters the Close-out phase for expense of Base Supply and O&M Contractor due-outs and any outstanding commitments and obligations. The PE/PM should take action to expeditiously return funds to the customer as soon as practical.

#### 7.5. Late JON Charges in Close-out Phase.

7.5.1. Refer to 16.8. Late JON Charges in Cancelled (X), Close-out (Y) and Closed (Z) Phase for process to adjudicate late charges in this phase.

## Chapter 8

### CLOSED “Z”, CANCELLED “X”, AND SUSPENDED “S” PHASES

#### 8.1. Closed (Z) Phase.

8.1.1. The Closed Phase indicates that the project has been completely closed out and no remaining unliquidated obligations or funding remain on the project. During this phase, no additional costs are accepted and all the Close-out activity has been accomplished. There is no action required of the PE/PM.

8.1.2. JOCAS moves JONs to the Z phase programmatically if the following conditions have been met:

8.1.2.1. All outstanding funding has been cleared.

8.1.2.2. No Deferrals exist.

8.1.2.3. No Commitments/Obligations pending.

8.1.2.4. TPT estimated completion date field has passed.

8.1.2.5. JON is in Close-out “Y” or Cancelled “X” Phase in JOCAS.

8.1.2.6. 90 days have passed since steps from [paragraphs 8.1.2.1](#) thru [8.1.2.4](#). above have been completed.

8.1.2.6.1. If the JON’s estimated completion date and/or amended completion date is blank, the JON should immediately move to Z phase after steps from [paragraphs 8.1.2.1](#) thru [8.1.2.4](#) have been completed.

8.1.3. Only the JOCAS office can move JONs into and out of Work Phase Code (WPC) Z. Projects will not be moved to an earlier phase for additional work. If additional related work is required, open a new JON and reference the previous JON.

8.1.4. As a rule, a PE/PM stops monitoring JONs once they enter Z status. FM receives notifications of transaction errors affecting JONs in Z status. FM must change the phase of affected JON to accept these transactions. The FM POC associated with the JON will contact the PE/PM or ETO about the phase change. The team works together to adjudicate and clear transaction charges, based on the general guidance in 16.2.4. Deferral Management. FM returns the JON to Z-Closed phase after resolution.

8.1.5. WPC Z Status restricts Labor/COST/PS charges via the JOCAS "on-line" screens. However, Z Status does not stop any uploaded files from external systems identified in [paragraph 8.1.6](#) The Test Wing must accept and adjudicate these charges.

8.1.6. External systems interfacing with JOCAS.

8.1.6.1. VTC – O&M Contractor Charges

8.1.6.2. SCW – RNCS Contractor Charges

8.1.6.3. WIMS – Work Information Management System

8.1.6.4. CAMS – Control and Monitoring System

8.1.6.5. CPAS – Central Procurement Accounting System

8.1.6.6. GAFS – General Accounting and Finance System

8.1.6.7. SBSS – Standard Base Supply System

8.1.7. Refer to 16.8. Late JON Charges in Cancelled (X), Close-out (Y) and Closed (Z) Phase for process to adjudicate late charges in this phase.

8.1.8. Definitions of JOCAS Work Phase Codes (WPC) are in EAFBI 65-601, *Job Order Coast Accounting Operations*. A similar list of the work phase code descriptions is located in [Attachment 5](#).

## **8.2. Cancelled (X) Phase.**

8.2.1. This phase is used for test projects that have been cancelled or terminated by the customer short of the intended technical goal and to which no costs may be further obligated or assigned. During this phase, all acceptable remaining charges are expensed and all erroneous charges reconciled with residual funds returned as quickly as possible to the customer. This phase is completed when all funding has been zeroed out. When this phase is completed, it moves to Closed (Z) Phase.

8.2.2. Refer to 16.8. Late JON Charges in Cancelled (X), Close-out (Y) and Closed (Z) Phase for process to adjudicate late charges in this phase.

## **8.3. Suspended (S) Phase.**

8.3.1. Normally, a test should be suspended if a delay of 60 days or more is expected; however, it may be suspended for less time if conditions warrant. Programs may continue to accrue charges in the Suspended phase. The PE/PM should inform the test team and customer on the project entry and exit into the Suspended (S) phase. JONs may require revalidation to 96 TW/XP if suspended for greater than 1 year. TPT sends a message reminding PE/PM to complete project revalidation.

8.3.2. Suspended is regarded as a short temporary phase. The following best practices should be used.

8.3.2.1. Suspended phase should not be used after the agreed technical deliverable from the customer agreement has been provided to the customer. PE/PMs should open a new JON for new additional work.

8.3.2.2. When PE/PM validate JONs in suspended phase for 1 or more years, they should contact the customer discuss closing the JON and returning residual funds.

8.3.2.3. Any JON in suspended for greater than 2 years should be closed and residual funds returned. The PE/PM will coordinate with the budget analyst for the JON to discuss corrective actions if necessary to all the JON to close.

## Chapter 9

### SAFETY

#### 9.1. Safety Overview.

9.1.1. The purpose of this chapter is to outline potential safety issues for consideration during the planning process.

#### 9.2. Test Safety Officer (TSO).

9.2.1. AFTCI 91-202, 96 TW Supplement define the roles and responsibilities associated with the Test Safety Review process for all 96 TW training and test operations. Generally, the Test Safety Officer will coordinate and finalize the safety solutions for the test and will publish the Safety Appendix for inclusion in the Test Directive. The safety analysis performed by TSOs may include, but are not limited to, defining hazard areas/safety footprints and risk reducing procedures for electromagnetic radiation, bomb fragmentation, blast overpressures and Flight Termination System (FTS) design and certification, ballistics of FTS debris, as well as defining real-time safety displays for the Central Control Facility (CCF). This engineering analysis translates into test safety requirements, which are specified in the Safety Appendix. Evacuation areas, personnel or equipment protection criteria, real-time displays, and mission instruction/ resource requirements are examples of safety requirements. The Safety Appendix will also detail the risk associated with operations defined in the Test Directive's Method of Test or CONOPS.

#### 9.3. Safety Considerations.

9.3.1. Depending on the type of project, the analysis done by TSOs may include impact safety footprints, casualty expectations, electromagnetic radiation hazards, calculation of bomb fragmentation hazard distances, blast overpressures, ballistics of flight termination generated debris, and real-time safety displays for the CCF. This engineering analysis will translate into test safety requirements, which will be defined in the Test Directive Safety Appendix. Evacuation areas, personnel or equipment protection criteria, and real-time displays are examples of the requirements. It is very important that the TSO is engaged by the PE/PM at the start of the project Requirements Definition phase in case there are long lead items or in case the TSO anticipates some unusual safety concerns. Contact the CCF Test Support Manager during the program kickoff for new weapon systems that will require customized safety displays within CCF.

9.3.2. Additionally, the PE/PM should coordinate a periodic review of the safety documentation to ensure the scope of the project remains within the current risk assessment. The review should also capture lessons learned to be incorporated into safety planning (*per AFTCI 91-202 and locally developed instructions*).

9.3.3. While most of the following scenarios will be handled by the TE and the TSO, the PE/PM should consider these events during the Requirements Definition and Planning Phases of the program, specifically with respect to cost and schedule.

##### 9.3.3.1. Range Fire

9.3.3.1.1. The range has very dense forested areas such that dry seasons coupled with an ignition source creates the hazard of a range fire.

9.3.3.1.2. During dry periods without significant rainfall it is important that a PE/PM consider the high potential for a range fire following a weapon detonation.

9.3.3.1.3. While the Eglin Wildland Support Module (WSM) at Jackson Guard does a very good job of conducting controlled burns in order to reduce the likelihood of a large wildfire resulting from a test mission, the Safety Appendix may require the Eglin WSM to suppress the wildfire by creating a fire break around the fire to contain it. There is no direct cost associated with the Eglin WSM creating a fire break to suppress a wildfire

9.3.3.1.4. Both the environmental review and the safety review process will dictate mission or test restrictions based on the fire danger levels at the time of the test. At “Very High” fire danger and above, the Eglin WSM Lead and the Jackson Guard Natural Resources Chief jointly evaluate all hot missions on Eglin on a daily basis and advise mission schedulers on recommended mission holds due to fire danger. This could add a few days and costs to the schedule.

9.3.3.1.5. If the range catches fire due to a weapon, the test project may have to incur the cost for any assets and equipment destroyed by the fire.

#### 9.3.3.2. **Weapon Fuze Dud**

9.3.3.2.1. The PE/PM or at least the TE should understand the reliability of the fuze of the weapon that is being detonated on the range.

9.3.3.2.2. During the SRB, safety will dictate the safe bleed-down time of the fuze in the event of a dud. Sometimes that time can be as high as 72 hours. Each bleed-time will vary with the fuze.

9.3.3.2.3. If the weapon duds, the test range will be secured for the defined time and the project will incur a portion if not all of those costs.

#### 9.3.3.3. **Laser and Directed Energy**

9.3.3.3.1. If a laser or radiation hazard exists with a test, the TSO can require both Personal Protective Equipment for personnel working within the affected area and a backstop to contain the energy on the range and below the horizon.

9.3.3.3.2. A PE/PM should interface early with the TSO as the laser or directed energy may require Clearinghouse processing who may limit lasing opportunities to certain times during the night.

9.3.3.3.3. Additionally cost would need to be factored into the project for any large, custom-built backstops.

9.3.4. **Large Weapon Footprint Considerations.** The Test Safety Office will ensure that the weapon safety footprint is known for specific weapons and tactics and their target locations on the range. There are several considerations that will impact either cost, schedule, or the public with which a PE/PM should be mindful and plan. Some additional safety considerations that a PE/PM should plan for as they may be mandated by the Safety Appendix are: Flight Termination System, real time support, laser and directed energy systems, explosive weapon misfires, range evaluations, and road closures.

9.3.4.1. **Flight Termination System.** Some weapons systems tested on the range require a FTS for risk mitigation. These weapons even under failed conditions have the performance capability to impact outside the test range boundaries. To negate this hazard, a flight safety system is installed onboard the test vehicle that, when commanded from the ground, will immediately terminate the vehicle's flight before it leaves the designated test airspace. Flight termination may be affected by an onboard explosive device which cuts the wings or by aerodynamic means causing the vehicle to roll or tumble.

9.3.4.1.1. Because an FTS is a must-work device, a great deal of engineering design, design review, component qualification testing, acceptance testing and certification testing is required by the range. FTS components are tested to anticipated (plus margins) flight conditions including vibration, temperature, shock, humidity, altitude, and electromagnetic interference/ electromagnetic compatibility to ensure their reliability.

9.3.4.1.2. Range Commanders Council has published RCC 319, *Flight Termination Systems Commonality Standard*, (available at 96 TW/SEU) which defines common range FTS design, testing and documentation criteria.

9.3.4.1.3. An FTS is a long lead-time item and is normally designed, tested, and approved by TSO during the system acquisition cycle prior to Test Wing involvement.

9.3.4.2. Real-Time Safety Support at the CCF. TSOs provide real-time, on-site support for many tests performing the Range Safety Officer functions as required by AFMAN 13-212, *Range Planning and Operations*. Complex airborne tests or any flight test of a vehicle with an FTS are supported by TSOs at the CCF. They will monitor mission progress, test area clearance, issue clear-to-arm, clear-to-fire calls, etc. For FTS-equipped systems, the TSO will operate the command destruct panel and send the flight terminate command if the vehicle violates safety criteria displayed on the control monitors and/or becomes a dangerous item.

9.3.4.3. Evacuating Adjacent Ranges.

9.3.4.3.1. If a weapon has a large footprint or even if the flight profile of the aircraft and weapon warrant, a test project may be required to evacuate the adjacent ranges. This type of evacuation occurs on both the eastern and western sides of the range. The western side of the range costs considerably more dollars to evacuate as there are more range support workers in that area (mainly radar site B-10).

9.3.4.3.2. When a range is evacuated, the test project may absorb the full cost of that site, whether those personnel contribute to the test project or not. The evacuation precludes those workers from working their regular schedule or earning reimbursements from other projects. While every effort will be made to utilize those employees in other areas such that the test project that caused the evacuation doesn't bare the full cost, it is not guaranteed that other reimbursable work will be found for which those employees are suited. As such the PE/PM should expect to absorb the full cost of the evacuation.

9.3.4.3.3. The TSO will advise the test project of the range evacuation requirements during the SRB.

9.3.4.3.4. For cost estimation purposes, the RANSS Range Engineer is the first POC who can give a ball park estimate of the manning at the affected sites. Alternatively if the PE/PM requires more detailed cost estimation information, the Range Engineer can request a cost estimate from the Eglin Range Operations and Maintenance contractors Project Coordinator.

#### 9.3.4.4. Road Closures.

9.3.4.4.1. Most range road closures are benign in that they are expected and not much public traffic transit those range roads. There are, however, road closures that require additional warning, notice, and consideration.

9.3.4.4.2. State Roads 85, 285, and 123 and Ranger Road require advanced notice to the public for closure.

9.3.4.4.3. Every reasonable effort should be made to limit the amount of time that a road is closed. Therefore it is important to have coordination with Public Affairs, the TSO, scheduling office, and TE for weapon release and transit timing.

## Chapter 10

### ENVIRONMENTAL

#### 10.1. Overview.

10.1.1. The purpose of this chapter is to outline potential environmental issues for consideration during the planning process.

#### 10.2. Environmental Considerations.

10.2.1. While each Environmental Impact Analysis Process (EIAP) review is different, below are some of the more common issues with which a PE/PM should be familiar. For more in-depth environmental considerations and mitigations during a test, refer to EAFBI 13-212, *Range Planning and Operations*. In addition to EAFBI 13-212, the PE/PM can access the Environmental Restrictions Tracking Tool (ERTT) to view both a visual and written presentation of environmental restrictions within test/training area. Please contact the Environmental Planning Office to obtain access to this web-based planning tool: <https://em.eglin.af.mil/ems/emsn/ERTT/default.aspx>.

10.2.1.1. Each test program or event requires an EIAP review that should be accomplished during the Planning Phase. Open air projects require an EIAP review (reference 32 Code of Federal Regulations [CFR] Title 32, National Defense, **Part 989** [32 CFR 989]).

10.2.1.2. If the project does not warrant a Categorical Exclusion (a category listed in 32 CFR 989) after review, an Environmental Assessment (EA) or Environmental Impact Statement (EIS) may be required. These documents can take one to two years to complete. The Program Office must include required time and funding in the overall schedule and budget. Environmental Planning Office routinely updates EAs for known test activity at existing Test Areas in order to keep the EIAP process as streamlined as possible.

10.2.2. **Avoid National Environmental Policy Act (NEPA Violations).** The test team must not do anything that has not been assessed for environmental impacts through EIAP. Violating NEPA can result in a Court-ordered halt of ETTC test activities which could take months or years to resolve, not only for your program but for other DoD programs as well. If the test gets altered or relocated, a new AF Form 813 describing the changes must be submitted.

#### 10.3. Policy.

10.3.1. National Environmental Policy Act of 1969 (NEPA).

10.3.1.1. The NEPA was enacted to: declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation; and to establish a Council on Environmental Quality.

10.3.1.2. NEPA applies to *all* federal agencies and proposed federal actions. Therefore proponents of proposed actions involving federal land, employees or funds must adhere to NEPA. NEPA requirements are met by EIAP.

10.3.1.3. 32 CFR 989 implements the Air Force EIAP and provides procedures for environmental impact analysis both within the United States and abroad. Consequently, the main body of 32 CFR 989 deals primarily with environmental impact analysis under the authority of NEPA, while the primary procedures for environmental impact analysis of actions outside the United States in accordance with Executive Order (EO) 12114, Environmental Effects Abroad of Major Federal Actions, are contained in §§989.37 and 989.38. EIAP is a decision tool to provide a systemic and defensible analysis of environmental impacts of a proposed action.

#### 10.4. Completion and Use of AF Form 813.

10.4.1. The Air Force uses AF Form 813, *Request for Environmental Impact Analysis*, to document the need for environmental analysis or for certain Categorical Exclusion (CATEX) determinations for proposed actions. The form helps narrow and focus the issues to potential environmental impacts. The larger and more involved the test, the longer analysis takes to accomplish.

10.4.2. For every test or training project, the PE/PM ensures that an AF Form 813 is initiated to determine if the test/training event will impact the environment. The AF Form 813 is completed and submitted on the Environmental Management website, [https://em.eplin.af.mil/AF813\\_New/index.aspx](https://em.eplin.af.mil/AF813_New/index.aspx).

10.4.3. Due to lead time required to complete the EIAP, the PE/PM must initiate the process as early as possible in the planning phase of the project. Eglin has developed EIAP procedures and an interactive web site to help the PE/PM complete required NEPA documents for the proposed project or activity.

10.4.4. The AF Form 813 includes: purpose (why are we doing this?), description (of what is to be done, how, by whom, when?), alternatives (of not doing the testing; typically no action), impacts to real property (demolition, construction, etc.) and location (have a back-up plan if primary range is unavailable). The PE/PM will refrain from using lengthy, technical descriptions and undefined acronyms. If available, the PE/PM should attach the Method of Test, any supporting documentation, pictures, maps, etc. Never assume everyone knows what the PE/PM and TE know about the project.

10.4.5. The PE/PM ensures action is taken to satisfy all constraints or conditions of test as identified in completed EIAP documentation, AF Form 813, EA, EIS, including any supporting documents of the analysis. Completed EIAP documentation is not authority to proceed; it is authority to proceed after the special conditions are met.

10.4.6. **Note:** A work request review board-approved work task in NexGen IT is required prior to the start of any work with impacts to real property (demolition, construction, etc.). Targets are not considered real property. Contact 796 CES Customer Service at (850) 882-8347 for any questions regarding this work task requirement. Referencing the work task number in the creation of the AF Form 813 is recommended.

#### 10.5. Schedule and Cost Considerations.

##### 10.5.1. CATEX

10.5.1.1. CATEXs are listed in 32 CFR 989 and are also found on the Eglin AFB Environmental Management website where the AF Forms 813 are submitted. They define those categories of actions that do not individually or cumulatively have potential for significant effect on the environment and do not, therefore, require further environmental analysis in an EA or an EIS. They can also be assigned with special conditions.

10.5.1.2. A CATEX is not authority to proceed; it is authority to proceed after the special conditions are met. These conditions are specified on the AF Form 813 final document signed by 96th Civil Engineer Group Environmental Assets Office (96 CEG/CEIEA).

10.5.1.3. Allow approximately 2 weeks after the AF Form 813 is submitted by the proponent and their UEC and is accepted by the 813 Administrator and some labor costs in the planning cycle for a project that qualifies for a CATEX.

#### **10.5.2. Environmental Assessment (EA)**

10.5.2.1. An EA will be required for projects that do not meet the criteria for a CATEX. These are completed when a proposed action is one not usually requiring an EIS but is not categorically excluded. The 96th Civil Engineer Group Environmental Assets Office (96 CEG/CEIEA) supports the PE/PM in preparing an EA. Every EA must lead to either a Finding of No Significant Impact, a decision to prepare an environmental impact statement, or no action on the proposal.

10.5.2.2. If an EA is required, allow for a year minimum, once the AF Form 813 has been completed. These time periods are approximate and some complex projects may require longer time frames to accomplish. Alternatively, the 96 CEG/CEIEA may choose to bypass the EA and proceed with preparation of an EIS.

10.5.2.3. The EA may be prepared by the requester, prepared in-house by 96 CEG/CEIEA or contracted out. The PE/PM will invite the 96 CEG Environmental Management Team to the kick-off meeting and coordinate detailed planning addressing environmental issues. Follow-on meetings and Range/Target Area surveys will probably be required. This will be essential for large range footprint events. The PE/PM will be prepared to fund environmental assessment preparation. The cost of an environmental assessment typically ranges between \$150K-\$2M or more. The PE/PM will interface with the Environmental Planning Office and get the estimated cost of the EA. This will provide better cost estimates as each project is unique.

#### **10.5.3. Environmental Impact Statement (EIS)**

10.5.3.1. An EIS is prepared when it has been determined that significant environmental effects will occur. These normally include, but are not limited to: potential for significant degradation of the environment, potential for significant threat or hazard to public health or safety or substantial environmental controversy concerning the significance or nature of the environmental impact of a proposed action. Other actions that may require an EIS include, but are not limited to: public land withdrawals of over 5,000 acres, establishment of new air-to-ground weapons ranges, site selection of new airfields, site selection of major installations, development of major new weapons systems (at decision points that involve demonstration, validation, production, deployment, and area or site selection for deployment), or establishing or expanding supersonic training areas over land below 30,000 feet Mean Sea Level (MSL).

10.5.3.2. An EIS may take 18 months to 2 years for a decision to be made. They will be prepared by a contractor and paid for by the project. The cost of an EIS can be millions of dollars. Similar to an EA, the PE/PM will invite the 96 CEG Environmental Management Team to the kick-off meeting and coordinate detailed planning addressing environmental issues. The environmental team will help the PE/PM determine the estimated cost of the EIS since every project is unique.

## **10.6. Specific Eglin Range Considerations.**

### **10.6.1. Dig Permits**

10.6.1.1. All ground disturbing activities will require a completed AF Form 813 prior to issuing a dig permit. For ground disturbances greater than 4 inches, the team is required to obtain a dig permit.

10.6.1.2. A dig permit is actually a Base Civil Engineering (CE) work clearance request, AF IMT 103. The work clearance request is used for any work (contract or in-house) that may disrupt any of, but not limited to, the following: aircraft or vehicular traffic flow, base utility services, protection provided by fire and intrusion alarm system, or routine activities of the installation. It is also used as a risk assessment and prevention tool to identify potentially hazardous work conditions.

10.6.1.3. The work clearance request is processed just prior to the start of work. If delays are encountered and/or the PE/PM determines that site conditions have changed, the work clearance request is reprocessed.

10.6.1.4. Request the required documentation instructions for the Dig Permit from the 96 CEG Customer Service (796 CES/ CEOER) organizational email inbox, at [796CES.CEOER.EglinForm103@us.af.mil](mailto:796CES.CEOER.EglinForm103@us.af.mil). This request should be made at least 14 working days prior to the requested activity. An AF Form 813 must be completed before the dig permit is obtained.

10.6.1.5. The approval process starts when the required documentation is emailed to the 96 CEG Customer Service (email address above). Once the work clearance request has been fully reviewed and signed, it is emailed back to the customer.

10.6.1.6. The PE/PM monitors compliance with the dig permit requirement as costs resulting from non-compliance could be incurred by the requesting party.

### **10.6.2. Natural Resources**

10.6.2.1. Proponent/PE/PM should begin coordination with Eglin Natural Resources Office (NRO) as soon as requirements are known. The NRO is collocated with the 96 Civil Engineer Group Natural Resources Office at Jackson Guard in Niceville, FL. The NRO ensures the provisions of AFMAN 32-7003, *Environmental Conservation*, are implemented across the ETTC. Preliminary information for planning purposes may be provided by NRO via its Environmental Guidebooks for both Mainland Testing and Training Activities, and Beach and Barrier Island Test and Training Activities (pdfs).

10.6.2.2. Eglin NRO reviews every AF Form 813 and determines the likelihood a proposed action will impact protected species, and therefore determines the need to consult with US Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (NMFS) under the Endangered Species Act (ESA), Section 7, or under the Marine Mammal Protection Act (MMPA). The NRO also evaluates the consistency of the proposed action with the Florida Coastal Management Program in compliance with the Coastal Zone Management Act (CZMA).

10.6.2.3. In its AF Form 813 review, if Eglin NRO does find a Proposed Action "may affect" ESA- or MMPA-protected species, proponent should:

10.6.2.3.1. Consider executing mission at a different time of year or in a different location to minimize or avoid such effects.

10.6.2.3.2. Expect a consultation timeline that could take anywhere from one week to six months (for USFWS-jurisdiction species) to two years (for NMFS-jurisdiction species) if effects cannot be avoided.

10.6.2.3.3. Be prepared to comply with any terms and conditions from USFWS or NMFS that may result from consultation.

10.6.2.4. If Eglin NRO AF Form 813 review for compliance with CZMA:

10.6.2.4.1. Finds a Proposed Action (or similar action) is defined by example within the General Negative Determination Agreement (GNDA) as having no effect on the Coastal Zone, it will invoke coverage under CZMA by this GNDA.

10.6.2.4.2. Finds a Proposed Action does affect the Coastal Zone but remains consistent with Florida Statutes that comprise the Florida Coastal Management Program, it will prepare a Consistency Determination and submit to Florida State Clearinghouse for review and coverage under CZMA via State concurrence.

10.6.2.4.3. Finds a Proposed Action has no effect on the Coastal Zone, it is not similar to any example within the GNDA, yet it is of significance to the state, it may prepare a Negative Determination and submit to Florida State Clearinghouse for review and coverage under CZMA via State concurrence.

10.6.2.4.4. Finds a Proposed Action has no effect on the Coastal Zone and is of no significance to the state, it may refrain from even noting so in its comments on the 813.

10.6.2.5. In accordance with AFI 32-7003, "forest products may not be traded for goods or services nor used to offset contract costs associated with construction, land clearing, or other contracted activity." Merchantable trees must be vetted through the Eglin Natural Resources Forestry Office.

### 10.6.3. Gopher Tortoise and Burrowing Owls Surveys

10.6.3.1. During the EIAP process, surveying for gopher tortoise and/or burrowing owl might be required as mitigation. Sometimes the proposed test can avoid the gopher tortoise or owl burrow by using a specified location span. Otherwise, the gopher tortoise may have to be relocated. If relocation is not possible, the test parameters may have to change to ensure species avoidance.

10.6.3.2. When nighttime temperatures are forecast to be below 50 degrees Fahrenheit for three consecutive nights gopher tortoises cannot be relocated. Therefore, the PE/PM should be mindful of the time of year when the proposed test will occur. There are certain temperatures at which a tortoise cannot be relocated. The avoidance requirements and the temperature should be detailed in the AF Form 813 by the Biological Resources Work Group.

10.6.3.3. The AF Form 813 should include current contact information to accomplish any required surveys.

**10.6.4. Red Cockaded Woodpecker.** The red cockaded woodpecker is a federally protected endangered species. As such, if the proposed test is in an area where the red cockaded woodpecker cavity trees potentially exist, the EIAP may impose certain restrictions on the test designed to preclude possible disturbance and/or harassment in accordance with federal law. Additionally certain activities are not authorized in a red cockaded woodpecker buffer zone. The activities, as well as the buffer zone, are defined in the EAFBI 13-212, *Range Planning and Operations*. The EIAP should specify the restrictions on the test and have the most current contact information and resource POC for action.

#### **10.6.5. Sea Turtles**

10.6.5.1. Four species of marine turtles found in the Gulf of Mexico have been documented to nest on EAFB's Santa Rosa Island and Cape San Blas beaches: the Atlantic loggerhead, Atlantic green, Kemp's ridley, and leatherback.

10.6.5.2. Nesting females approach Eglin Beaches in the spring and summer and dig their nests either between the high tide mark and the dune line or between dunes.

10.6.5.3. Federal law prohibits disturbance of the turtles, their nests, and eggs.

10.6.5.4. For testing proposed during certain times of the year (1 May to 31 October), it is critically important that the PE/PM and TE both review the beach area restrictions located in Table 7.12 of EAFBI 13-212, *Range Planning and Operations*.

10.6.5.5. Foraging sea turtles are protected as well and PE/PM should understand missions that may affect free-swimming sea turtles could be similarly restricted as done for marine mammals described in Section 10.6.6.

10.6.5.6. A PE/PM should have a general knowledge of the restrictions as some of the mitigations and consultation can take up to 165 days to accomplish and may impact schedule if not considered during the planning phase.

#### **10.6.6. Marine Mammals (whales, manatees, dolphin)**

10.6.6.1. Underwater detonations including aircraft gun rounds and mines have special permits, training, observations, and authorizations for impact on marine mammals.

10.6.6.2. The PE/PM should be mindful that there are approved munitions and annual allotments of various types of munitions with expiration dates for those allotments.

10.6.6.3. A PE/PM should consult Eglin Natural Resources Office (i.e., 96 Civil Engineer Group Natural Resources Office at Jackson Guard) as soon as the requirement becomes known. If a proposed surface or subsurface detonation is not covered under current authorizations the process to obtain additional authorization can take up to 2 years, so planning far ahead is vital.

10.6.6.4. The PE/PM should ensure that the test team includes unit members who have received the required endangered species training and certification necessary to perform species observations and data collection on or over the water during the test mission.

10.6.6.4.1. The species observations should be conducted before, during, and after the test event using aerial and/or vessel surveys. There are strict requirements governing the information to be recorded as well as reporting timelines. The requirements vary between type of weapon and/or operations: such as near-shore underwater detonations, precision strike weapons, air-to-surface gunnery, and underwater detonations. PE/PM should be aware that aerial surveys, as opposed to vessel-based surveys, and if properly equipped for monitoring, may significantly increase temporal and spatial scales available for test event.

10.6.6.5. The PE/PM should consult both the EAFBI 13-212, *Range Planning and Operations*, Chapter 7, and 96 Civil Engineer Group Natural Resources Office at Jackson Guard for more detailed and directive information.

#### 10.6.7. Nesting birds on Santa Rosa Island

10.6.7.1. From late February through August several species of seabirds and shorebirds nest in many areas of Santa Rosa Island and are protected by state and federal regulations.

10.6.7.2. Nests must be avoided by a buffer distance established by NRO based on location and type of expected disturbance.

10.6.7.3. Eglin NRO surveys weekly during the nesting season and records nest coordinates.

10.6.7.4. Eglin NRO will provide either nest location coordinates or maps to mission proponents/PE/PM upon coordination.

#### 10.6.8. Wildfire Mitigation

10.6.8.1. PE/PM must consult with relevant sections (range specific) within Eglin AFBI 13-212 that restrict mission activity based on wildfire risk/fire danger rating. At “Very High” fire danger and above, hot missions that are at risk of starting a wildfire that the Eglin WSM at Jackson Guard is unable to control will be placed on hold until the fire danger passes.

10.6.8.2. Point of Contact is Eglin Wildland Fire Dispatch (AFCEC/CZOF) at (850) 978-033; daily Fire Danger Rating also available at: <https://usaf.dps.mil/teams/afwfb/Lists/FireDangerRating/AllItems.aspx>

#### 10.6.9. Storm Water Permit

10.6.9.1. A PE/PM must consider the total ground disturbance area.

10.6.9.2. Construction projects are subject to a Florida Environmental Resource Permit (ERP) if they exceed certain thresholds, specifically:

10.6.9.2.1. Over 5 acres

10.6.9.2.2. Over 4,000 sq ft of impervious surface subject to vehicular traffic

10.6.9.2.2.1. **Note:** Florida Department of Environmental Protection (FDEP) has held that gravel roads are subject to ERP permits

10.6.9.2.3. Over 9,000 sq ft of impervious surface total including buildings, etc.

10.6.9.2.4. Part of a larger plan of development (contiguous project) prevents piece meal to avoid permits

10.6.9.3. If the ground disturbance area totals one acre or more, a National Pollutant Discharge Elimination System (NPDES) permit for storm water is required. These permits are typically applied for through the FDEP Portal (<https://www.fldepportal.com/go/home>) by the contractor performing the ground disturbing work and prior to work beginning.

10.6.9.4. If a storm water permit is required, it will be captured on the AF Form 813 during the EIAP process by the Water Resources Work Group.

10.6.9.5. Contact your Unit Environmental Coordinator and Eglin Environmental Management Branch Compliance Office (96 CEG/CEIEC) early in project development to avoid delays in the permitting process and project start.

#### 10.6.10. Cultural/Historic Resources

10.6.10.1. Cultural Resources on Eglin consist of archaeological sites, structures, artifacts, and any other physical evidence of human activity considered relevant to a culture or community for scientific, traditional, religious, or other reasons.

10.6.10.2. Resources include prehistoric and historic archaeological deposits or surface materials, historic architectural resources, shipwrecks, American Indian sacred sites, and Traditional Cultural Properties.

10.6.10.3. While cultural or historic sites/items aren't common, they can drive significant costs or delays so it is critical to engage the Cultural Resources Office as early as possible during the EIAP.

10.6.10.4. PE/PMs must confirm the Area of Potential Effects' status for all proposed projects. As they age, buildings can be deemed historical and cultural artifacts can be unearthed in areas once thought void of such objects.

10.6.10.5. Cultural resource concerns will be captured by the AF Form 813, which will contain the most current restrictions and contact information.

## Chapter 11

### INFORMATION PROTECTION AND PHYSICAL SECURITY

**11.1. Overview.** The following descriptions are mere overviews and introductions to the type of information and protection requirements with which the PE/PM should be familiar. This chapter should not be used as a replacement for official Department of Defense or Air Force policy or directive. Always consult the Office of Primary Responsibility for subject matter expertise and the official DoD and United States Air Force (USAF) guidance in regard to security and its application.

#### **11.2. Information Protection.**

11.2.1. AFI 16-1404, *Air Force Information Security Program*, defines the Air Force Security Enterprise as the organizations, infrastructure, and measures (to include policies, processes, procedures, and products) in place to safeguard AF personnel, information, operations, resources, technologies, facilities, and assets against harm, loss, or hostile acts and influences. Information Protection is a subset of the Air Force Security Enterprise. Information Protection consists of a set of three core security disciplines (Personnel, Industrial, and Information Security) used to: Determine military, civilian, and contractor personnel's eligibility to access classified information or occupy a sensitive position, ensure the protection of classified information and controlled unclassified information released or disclosed to industry in connection with classified contracts, and protect classified information and controlled unclassified information that, if subject to unauthorized disclosure, could reasonably be expected to cause damage to national security. There are several documents and security requirements with which a PE/PM should be familiar. Those are described below.

#### **11.2.2. Program Protection Plans**

11.2.2.1. Program Protection is the DoD's "integrating process for mitigating and managing risks to advanced technology and mission-critical system functionality from foreign collection, design vulnerability, or supply chain exploitation/insertion, battlefield loss, and unauthorized or inadvertent disclosure throughout the acquisition lifecycle" (Defense Acquisition Guidebook, [Chapter 13](#)).

11.2.2.2. The Program Protection Plan is a living plan to guide efforts to manage the risks to Critical Program Information and mission-critical functions and components, as well as program and system information.

11.2.2.2.1. The test team should be familiar with the requirements of the cybersecurity strategy. The cybersecurity strategy is a statutory requirement for mission critical or mission essential Information Technology systems. The cybersecurity strategy is a regulatory requirement for all other programs containing information technology, including national security system. The cybersecurity strategy is an appendix to the Program Protection Plan.

11.2.2.3. The Program Protection Plan is the single source document used to coordinate and integrate all protection efforts. In the plan, unauthorized personnel and those without a "need-to-know" are denied access to Critical Program Information. This is done to prevent inadvertent disclosure of leading-edge technology.

11.2.2.4. After the initial capabilities document is validated and the existence of Critical Program Information is determined, Program Protection Plans are established and approved for an acquisition program.

11.2.2.5. The Program Protection Plan is usually updated for each of the program's technical reviews.

11.2.2.6. Receiving a Program Protection Plan does not eliminate the need for a Security Classification Guide and receiving a Security Classification Guide does not eliminate the need for a Program Protection Plan.

**11.2.3. Critical Program Information.** Critical Program Information (CPI) is program, technologies or systems information that, if compromised, would degrade combat effectiveness, shorten the expected combat life of the system or significantly alter program direction. This includes classified military information or unclassified controlled information about such critical programs, technologies or systems. U.S. capability elements may include, but are not limited to, software algorithms and specific hardware residing on the system, training equipment, and/or maintenance support equipment, as defined in DoDI 5200.39 (Glossary Page 11).

11.2.3.1. Counter-Intelligence Assessment for Protection of CPI. Counter-Intelligence (CI) is the information gathered and actions taken to identify and protect against an adversary's knowledge-collection activities or attempts to cause harm through sabotage or other actions. The Air Force Office of Special Investigations (AFOSI or OSI) is the lead for CI activities but is supported by the Intelligence Community. When test planning and TD development, the PE/PM considers how to prevent adversary intelligence collection on test assets and events, determine the risks involved, and establish mitigations. Considerations to consider are in [Figure 11.1](#) below.

**Figure 11.1. Considerations for Counter-Intelligence Assessment.**

**Counter-Intelligence Assessment for CPI**

1. Critical Program Information
  - a. What needs to be protected?
  - b. What tolerances are sensitive?
2. Collection Risks
  - a. IMINT - Imagery Intelligence
  - b. SIGINT - Signals
  - c. HUMINT – Local Threat Assessment
3. Intel resources available
4. Risk assessment (Likelihood vs. Impact)
5. Mitigations to lower risk

**11.2.4. Security Classification Guides**

11.2.4.1. Security Classification Guides are needed to provide adequate instructions for handling and safeguarding classified information and materials.

11.2.4.2. Security Classification Guides identify specific items or elements of information to be protected and state the specific classification assigned to each item or element of information. Where an item or element of information may qualify for one of multiple classification levels (e.g., Unclassified to Secret), criteria is provided for determining which classification level is applicable.

11.2.4.3. The Security Classification Guide also states a concise reason for classifying each item, element, or category of information. The guide states the declassification instructions for each item or element of classified information, including citation of the approved automatic declassification exemption category, if any. It identifies any special handling caveats (e.g., dissemination controls) that apply to items, elements, or categories of information. Where applicable, the guides use remarks or a releasability annex to identify those elements of information approved, in accordance with established disclosure policies, by the appropriate disclosure authority/authorities for routine release to specified foreign governments and international organizations.

11.2.4.4. PMs should obtain the Security Classification Guides for classified information involved in testing. Security Classification Guides can be obtained from the Office of Primary Responsibility, depending on the classification of the Security Classification Guide. The unit security manager should be contacted if additional assistance in obtaining Security Classification Guides is needed.

11.2.4.5. For more information on Security Classification Guides, contact 96 TW/IPIP.

**11.2.5. Proprietary Information.** According to the DoDI 5230.24, proprietary information is information relating to or associated with a company's products, business, or activities, including, but not limited to, financial information; data or statements; trade secrets; product research and development; existing and future product designs and performance specifications; marketing plans or techniques; schematics; client lists; computer programs; processes; and knowledge that have been clearly identified and properly marked by the company as "proprietary information," trade secrets, or company confidential information. The information must have been developed by the company and not be available to the government or to the public without restriction from another source.

11.2.5.1. The government and its support contractors must take all reasonable steps to protect proprietary technical data or computer software against any unauthorized release or disclosure.

11.2.5.2. PMs should be cognizant of prime contractors who have procurement or development contracts with the DoD that are providing technical data or software as government furnished information with restricted rights in the legend.

11.2.5.3. Restricted rights indicates that there is proprietary data included in the government furnished information.

11.2.5.4. IAW DFARS 252.227-7025, *Limitations on the Use or Disclosure of Government-Furnished Information Marked with Restrictive Legends*, when a government support contractor is working on a project for a prime contractor who has a procurement or development contract with the government, the government support contractor may be requested by the prime contractor to enter into a non-disclosure agreement with the party whose name appears in the document's legend, if required to do so by that party, and that any such non-disclosure agreement should implement the restrictions on the Contractor's use of such data or software as set forth in the clause.

11.2.5.4.1. **Note:** It is the responsibility of the government support contractor and his company to ensure familiarity with all of the provisions of this DFARS clause and its applicability.

11.2.5.5. The PE/PM should be mindful of proprietary information when applying a distribution statement to government-developed technical documents that contain proprietary information.

11.2.5.5.1. The appropriate distribution statement is entirely dependent on the scope of the government's license rights in those materials.

11.2.5.5.2. In most cases, the reason "Proprietary Information" should provide the basis for distribution statements B, E, or F as determined in the procedures from DoDI 5230.24, Enclosure 4, *Distribution Statements on Technical Documents*.

#### 11.2.6. **Scientific and Technical Information (STINFO).**

11.2.6.1. STINFO is a key outcome and record of Air Force basic research, applied research, and advanced technology development.

11.2.6.2. The Air Force adheres to scientific and engineering integrity in accordance with AFI 63-101/20-101, *Integrated Life Cycle Management*, to communicate, collaborate, and interchange STINFO among DoD scientists, engineers, acquisition professionals, other federal agencies, and academic, private sector, and international partners.

11.2.6.3. The distribution, control, and dissemination of STINFO is applicable to Air Force RDT&E, Procurements and Operations and Maintenance (O&M) efforts in accordance with DoDI 5230.24 and AFI 16-201\_AFMC Supp\_Eglin AFB Supp, *Air Force Foreign Disclosure and Technology Transfer Program*.

11.2.6.4. The PE/PM must ensure that appropriate Distribution Statements and Destruction Notices are applied on STINFO resulting from RDT&E, Procurement and O&M efforts to indicate any secondary distribution or export control limitations IAW AFI 61-201, *Management of Scientific and Technical Information (STINFO)*.

11.2.6.5. For more information on STINFO, contact the unit's STINFO liaison or the Wing STINFO POC in 96 TW/XP.

#### 11.2.7. **Operations Security (OPSEC).**

11.2.7.1. OPSEC is an information-related capability that preserves friendly essential secrecy by using a process to identify, control, and protect critical information and indicators that, if compromised, would allow adversaries or potential adversaries to identify and exploit friendly vulnerabilities leading to increased risk or potential mission, function, program, or activity failure or the loss of life. OPSEC's desired effect is to influence the adversary's behavior and actions by reducing the adversary's ability to collect and exploit critical information and indicators about friendly activities.

11.2.7.2. Essential secrecy is the condition achieved by the denial of critical information and indicators to adversaries. Adversaries in possession of critical information can hinder or prevent friendly mission accomplishment. Thus, essential secrecy is a prerequisite for effective operations.

11.2.7.3. RDT&E activities are high-priority targets for collection by multiple actors and particularly vulnerable to compromise for both classified and controlled unclassified information, and have an inherent requirement to implement OPSEC.

11.2.7.4. For additional information pertaining to OPSEC, see AFI 10-701, *Operations Security (OPSEC)*; note that at this time of publication the OPSEC document is in re-write.

11.2.7.5. 96 TW/IPIP is the Eglin OPSEC Program Manager and Office of Primary Responsibility for the Eglin OPSEC Program. Contact your unit's OPSEC coordinator or security manager for additional guidance.

**11.2.8. Technology Transfer and International Traffic in Arms Regulations (ITAR).** Controls are necessary to ensure exports are consistent with U.S. national security interests. By law, export controls are placed on defense articles and services or commercially available items that have a military utility. The Department of State controls exports of defense articles, services, technical data, etc., under ITAR. As this topic is very complex, it is important that the PE/PM immediately make contact with the 96 TW Foreign Disclosure Officer for an in-person consultation.

**11.2.9. North Atlantic Treaty Organization (NATO) Information Access.** When a PE/PM is assigned to a project that requires access to NATO information, usually the Flight or Squadron Commander/Director initiates the access request with the unit's security manager. However, if it appears that this has not happened, the PE/PM should self-nominate to the security manager who should then validate the requirement with the Flight or Squadron Commander/Director and complete the appropriate forms and training. After which, the PE/PM's security access information should be updated in Defense Information Security System (DISS). When NATO access is terminated or no longer needed, the PE/PM should be debriefed as to continued responsibility for safeguarding classified NATO information.

**11.2.10. Critical Nuclear Weapon Design Information (CNWDI) Access.** When a PE/PM is assigned to a project that requires access to CNWDI information, usually the Flight Chief or Squadron Commander/Director initiates the access request with the unit's security manager. However, if it appears that this has not happened, the PE/PM should self-nominate to the security manager who should then validate the requirement with the Flight Chief or Squadron Commander/Director and complete the appropriate forms and training. After which, the PE/PM's security access information should be updated in DISS.

**11.2.11. Release of Information to the Public.**

11.2.11.1. During a potential customer's consultation about 96 TW capabilities, a PE/PM should be mindful that a commercial customer with no contract with a DoD acquisition program office is to be treated the same as the public (i.e., any entity outside the federal government to include state and local governments).

11.2.11.2. As such, all information released to the potential commercial customer should be cleared for release through 96 TW Public Affairs Office. Such information includes any information formally marked as For Official Use Only or CUI to include capability documents that are routinely used to brief DoD test customers.

11.2.11.3. Once the commercial entity becomes a bonafide customer with an agreement and funds, then CUI may potentially be shared as with a DoD customer with the PE/PM being mindful to follow each individual document's distribution statement.

11.2.11.4. The 96 TW Public Affairs Office, 96 TW/PA, is the Office of Primary Responsibility for the release of official information.

11.2.11.5. All proposed releases of official information should be sent to 96 TW/PA for review, processing, and approval.

11.2.11.6. The term "release" applies to, but is not limited to, articles, speeches, photographs, brochures, advertisements, displays, presentations, etc. This includes proposed publicity releases by prime contractors under DoD 5220.22-M (NISPOM), Chapter 5, Section 5.

11.2.11.7. A commercial customer may capture range images during or after a test for use in articles, advertisements, brochures, etc. Those artifacts and the final product in which they are used should also receive a Public Affairs review prior to the entity publishing the material.

11.2.11.8. Prime contractors are responsible for ensuring their subcontractors submit public release material through their office to 96 TW/PA for review and processing.

11.2.11.9. Defense contractors or other agencies should screen all information submitted for release approval to ensure that it is both unclassified and technically accurate. Letters of transmittal should contain certification to this effect.

11.2.11.10. Requests for approval of public releases under the provisions of DoD 5220.22-M (NISPOM) should be submitted to 96 TW/PA (96 TW/PA Office Mail Account, [96TW.PA.OfficeMailAccount@us.af.mil](mailto:96TW.PA.OfficeMailAccount@us.af.mil)) a minimum of 45 working days prior to the requested release date.

11.2.11.11. When doubt exists about the classification status of a proposed release, the final decision should be made by 96 TW/PA in coordination with the proper program management office.

11.2.11.12. Information approved through 96 TW/PA for public release can be released to foreign nationals without prior approval from the Foreign Disclosure Office (96 TW/IPF).

11.2.11.13. For more information, contact 96 TW/PA.

### 11.3. Physical Security.

11.3.1. Physical security consists of countermeasures that include entrance denial, the use of roving patrols on flightlines, dedicated range patrols providing random patrol coverage of the entire range complex, range O&M contract guards at sensitive electronic warfare sites, radomes to protect sensitive external views, shielded test chambers, and electronic intrusion detection systems on sensitive facilities.

#### 11.3.2. Security Badges

11.3.2.1. EAFB Integrated Defense Plan lists those areas at EAFB designated as restricted or controlled areas requiring a Restricted Area Badge. The Office of Primary Responsibility is 96 SFS/S-5B.

11.3.2.2. For initial issue of a Restricted Area Badge, an AF Form 2586, *Unescorted Entry Authorization Certificate*, should be completed and signed by the security manager and the specific area requested is approved/signed by the designated approving official.

11.3.2.3. The security manager creates and validates the AF Form 2586 and validates the clearance, etc., for member receiving Restricted Area Badge.

11.3.2.4. The Restricted Area Badge is a controlled item; after a member receives his Restricted Area Badge, he should take the 2586 to the supporting security manager for safe keeping.

11.3.2.5. When the member leaves the unit, he or she should go to the security manager and pick up their 2586 and take it to Security Forces Restricted Area Badge Office in Building 272 and turn it in.

11.3.2.6. It is the member's responsibility to turn in the Restricted Area Badge when it's no longer needed, not the security manager. The Restricted Area Badge office is in the Security Forces Building 272.

11.3.2.7. The security manager requires a memo or official email from a responsible government official (Flight Commander, Director of Operations [DO], Program Manager, etc.) validating a member's need for a Restricted Area Badge.

11.3.3. **Access Lists/Entry Authority Lists/Base Access.** Some test areas use Entry Authority Lists to enforce circulation control and area access. The following procedures are recommended to ensure the names of test personnel appear on Entry Authority Lists:

11.3.3.1. Send a visit request to the organization controlling access to the area. DISS is the recommended way to submit a visit request. If DISS cannot be utilized, a manual visit request should be submitted.

11.3.3.2. The visit request should be signed by your organization security manager or other properly designated personnel. The person signing the visit request is certifying the security clearances of the personnel indicated on the visit request.

11.3.3.3. Names can also be added to listings by requesting in letter format on letterhead stationery indicating name, rank, SSAN, organization, degree of clearance, date of clearance, purpose of the visit, and the POC within the organization to be visited.

11.3.3.3.1. The PE/PM receiving the personal information must comply with the requirements of protections of the Privacy Act of 1974.

#### 11.3.4. Request for Access/Entry Authority Lists

11.3.4.1. Visit requests and listings are normally updated on an annual basis; however, there are some exceptions to this.

11.3.4.2. Visitor control procedures can vary from organization to organization. In the event the exact procedures of an organization are not known, contact with the organization is recommended. Contact unit security manager for additional guidance.

11.3.4.3. Base Affidavit Procedures. The affidavits are sent to official visitors; once they fill it out and have their company's signature, they should send to the Gov/Mil POC who in turn should fill out a memo with the information they receive from the affidavits.

11.3.4.3.1. Once the memo is completed, they should send memo and affidavit to the supporting security manager for processing.

11.3.4.3.2. The security manager should sign memo and send both affidavits and memo to the 96 SFS for processing.

11.3.4.3.3. Once the 96 SFS receives this information it takes 3-5 days to process.

11.3.4.3.4. As soon as a PE/PM know about an impending visit to EAFB as an official visitor, the PE/PM should start the paperwork right away.

11.3.4.3.5. A contractor cannot be a POC for official visitors on base.

11.3.4.3.6. A visit request should be sent to the security manager if from a contract company.

11.3.5. **Access to CCF.** 96th Range Control Squadron (96 RNCS) should receive requests for access to the CCF from the 96 RN Security Office. The security office for individuals sponsoring test events at the CCF should send their visit requests to the 96 RN Security Office via Defense Information Security System (DISS) using SMO Code: 96RANGE. Requests can also be sent in letter format (agency letterhead) to 96 RN Security and 96 RNCS B380 Access Administration. Requests must contain the following information: reason(s) access is required; name; rank/grade (if contractor employee, indicate company); SSAN; clearance level; organization (if contractor personnel, indicate the sponsoring government organization and the name of the contractor employee's company); contract number for contractor personnel; JON (applicable to all requests); and time period access is required (up to 1 year). If sending a letter, the bottom of the first page must indicate that the letter contains Privacy Act of 1974 information. Reference [Figure 11.2](#) for DISS submission and [Figure 11.3](#) for a Visit Request in a letter head format submission.

**Figure 11.2. DISS Visit Request Information.**

**2. DISS**

- Visit Name: **CCF**
- Access Level: Clearance Level (Secret, etc.)
- Hosting SMO: **96RANGE**
- Creating SMO: **YOUR SMO CODE**
- Visit Notes: Enter JON #; when granting certain individuals escort privileges and/or data pickup privileges, place their name in the Visit Notes for the privilege granted. "No Escort" is default for all visitors.
- Contact Notes: Enter TE's First and Last Name and Phone Number

|   |                |                          |
|---|----------------|--------------------------|
| Last Edited:  | Created on:    | YYYY-MM-DD               |
| Visit Name: CCF   | Visit Status:  | Active                   |
| Access Level: Clearance Level (Secret, Top-Secret, etc.)  | Hosting SMO:   | 96RANGE - 96 RANGE GROUP |
| Creating SMO: YOUR SMO CODE                               | Reason:        | <Meeting, Other, etc.>   |
| Start Date: YYYY/MM/DD                                    | End Date:      | YYYY/MM/DD               |
| POC Name: Last, First Name                                | POC Number:    | ES0-88X-XXXX             |
| POC Email:  | POC Extension: |                          |
| Visit Notes: <JON#, Escort privileges, data pickup, etc.> |                |                          |
| Contact Notes: <Test Engineer FirstLast Name & Phone #>   |                |                          |

**Figure 11.3. Letter Visit Request Format.**

(Unit Letterhead)

DD Month YYYY

MEMORANDUM FOR 96 RNCS  
ATTN: 96 RNCS ACCESS CONTROL SPECIALIST

FROM: &lt;YOUR ORGANIZATION&gt;

SUBJECT: Building 380 Access Authorization

I certify that the following information is correct and that the named individuals have a valid security clearance and need to enter controlled areas within the Building 380 Complex.

| Military/Civilians    |       |             |               |     |        |
|-----------------------|-------|-------------|---------------|-----|--------|
| Name (Last, First MI) | Rank  | SSN         | OFFICE        | CLR | Escort |
| Smith, Joyce E.       | GS-13 | 111-11-1111 | 96 RNCS-RNC   | TS  | Y      |
| Thomas, Thomas T.     | O-3   | 222-22-2222 | 96 RNCS-RNCOS | S   | Y      |

| Contractors           |      |             |             |     |        |
|-----------------------|------|-------------|-------------|-----|--------|
| Name (Last, First MI) | Rank | SSN         | OFFICE      | CLR | Escort |
| Jones, Elizabeth I.   | CTR  | 333-33-3333 | COMPANY XYZ | S   | Y      |
| Williams, William W.  | O-3  | 444-44-4444 | COMPANY ABC | TS  | N      |

|    |  |
|----|--|
| 1. | All personnel listed are U.S. Citizens |
| 2. | B380 Controlled Area to be visited:    |
| 3. | JON (if applicable):                   |
| 4. | Beginning date of visit:               |
| 5. | Ending date of visit:                  |

//signed//  
AUTHORIZING OFFICIAL//signed//  
SECURITY

The information herein is CONTROLLED UNCLASSIFIED INFORMATION (CUI) which must be protected under the Freedom of Information Act (Title 5 United States Code Section 552) and/or the Privacy Act of 1974. Unauthorized disclosure or misuse of this PERSONAL INFORMATION may result in disciplinary action, criminal and/or civil penalties.

11.3.5.1. Verification of security clearance should be indicated by the unit security manager.

11.3.5.2. The request should reflect a government POC from the unit making the request.

11.3.5.3. Units can identify individuals who may pick up classified testing data/material in their letter in column format as well. All personnel on the visit request may pick up post-mission data by default unless so specified.

11.3.5.4. If personnel have escort privileges, escort officials should verify clearance and need to know (as holder of the classified) for individual(s) prior to escorting personnel to the CCF.

11.3.5.5. The TEs must coordinate visit requests through their security office for test events held at the CCF. After coordination, the TE's security manager shall compile/forward the request to the 96 RN Security Office who processes the CCF visit request. Requests should be made as far in advance as possible. This ensures access is being granted in a timely manner for mission support.

11.3.5.6. Access for foreign nationals must be approved by 96 TW/IPF and the 96 RN security manager. Send requests for access to 96 TW/IPF Foreign Disclosure Policy Office (FDO), the 96 RN Security Office, and 96 RNCS Test Support Manager (TSM). Requests should include the complete identification of the foreign visitor, country, purpose/justification for the visit, and the name, office symbol, and phone number of the escort(s). 96 TW/IPF FDO should endorse the request for foreign national access. The sponsoring POC/TE should coordinate with POCs at each location being visited for the completion of OPSEC surveys prior to visit.

11.3.6. **Access to Test Sites/Ranges.** In general, the range is divided into Open Areas and Closed Areas. Open and Closed Areas are defined and identified in EAFBI 13-212, *Range Planning and Operations*, and the 96 TW Range Land Range Map. Procedures for physical access into range areas are identified in EAFBI 13-200, *Eglin Range Mission Scheduling and Control*. The Range O&M Contractor controls access to many of the test sites and facilities on the range. The following procedures apply for access into the off-base range test and training areas:

11.3.6.1. Open/Closed Areas. Personnel are allowed to enter Open Areas without prior approval if they are on official business and the area is not scheduled for mission use; however, some range areas/roads/sites require additional approval prior to entry. Such areas/roadways are posted with red colored "Z-Clearance" access signs. Entry into these areas may require preapproval from JTTOC. Follow procedures identified in EAFBI 12-200 for access into Closed Areas.

11.3.6.2. Range O&M Contractor Controlled Areas.

11.3.6.2.1. Visitors to range/sites shall submit a DISS visit request or submit a Visit Request Worksheet (available from the Range O&M contract security office) when DISS is not available. The DISS SMO Code for the Range O&M Contract security office is 7LJ23-I. Once approved, visitors should be issued an "escort required" or "no escort" visitor badge when they arrive on site, based on the circumstance of the visit and clearance level of the visitor. Visitors who have an "escort required" badge issued to them, will be escorted while on the premises. Range O&M contractors are not allowed to sponsor, approve, or escort any foreign nationals at any time. An Entry Authority List with the required information may be provided to the O&M Contractor Security Office to authorize unescorted access, extended, or recurring requirements for range/site access.

11.3.6.2.2. Certain range areas have more specific or more restrictive access control procedures. Contact the 96th Range Group Security Office or Range Support Squadron (96 RANSS) for more information.

11.3.6.2.3. Requests for access for foreign nationals should be coordinated between the organization hosting the foreign national, 96 TW FDO, 96 RN Security Manager, and Eglin Range Operations and Maintenance Contractor, Attn: Security/Entry Control. The sponsoring POC/TE should coordinate with POCs at each location being visited for completion of OPSEC surveys prior to visit. Requests should include a complete identification of the foreign visitors, country, purpose/justification for the visit, and the name, office symbol, and phone number of the escort(s). Requests should be in letter format on letterhead stationery and should contain the following information: location(s) where access is requested; reason(s) access is required; level of access; name; rank/grade; ID/passport number; visit request number; and date(s) of visit.

#### **11.4. Deployment Planning for Special Access Programs .**

11.4.1. Projects with special security requirements require additional time for planning and approval. Any movement of equipment, such as computers, pods, test articles, etc., must be coordinated and approved, whether it is across the room or across the country. Long lead approval requirements must be accomplished through the Program Security Officer (PSO). The PSO will not accept last minutes submissions.

11.4.2. For any equipment movement, a Site Survey should be accomplished NLT 75 days prior to the deployment date. The completed Deployment Plan should be submitted to the wing NLT 45 days prior to the deployment date.

11.4.3. Movement approval requirements are established in DoDM 5205.07, Vol 1, *DoD Special Access Program (SAP) Security Manual: General Procedures*. Specifically, in Enclosure 5, Section 9, Transportation Plans, “The Government Special Security Officer (GSSO) or Contractor Program Security Officer (CPSO) will develop a transportation plan coordinated with and approved by the Program Security Office (PSO) at least 30 days in advance of the proposed movement.”

11.4.4. Contact the security specialist assigned to the project for additional information and guidance.

#### **11.5. Non-Disclosure Agreement (NDA).**

11.5.1. If a project is presented an NDA for test team personnel to sign, 96 TW/JA should be contacted. Test team personnel should not sign an NDA prior to 96 TW/JA guidance. 96 TW/JA will review and analyze the situation and provide guidance on handling NDAs.

## Chapter 12

### CYBERSECURITY

#### 12.1. Overview.

12.1.1. To address Cybersecurity, additional procedures are necessary. Testers should reference the most current copy of the Cybersecurity Test and Evaluation Guidebook for further details on how to conduct Cybersecurity Certification testing. That document, along with other related documents, is located on Defense Acquisition University's (DAU) Acquisition Community Connection for the Test and Evaluation Community at <https://www.dau.edu/cop/test/DAU%20Sponsored%20Documents/Forms/AllItems.aspx>. For specific questions on cybersecurity testing, contact the 47 CTS OL-A, Herlene Frazier ([herlene.frazier@us.af.mil](mailto:herlene.frazier@us.af.mil)) or James Hobin ([james.hobin.2@us.af.mil](mailto:james.hobin.2@us.af.mil)).

#### 12.2. Planning and Provisioning.

12.2.1. The PE/PM, in conjunction with the TE and the customer, will ensure all required documentation is available to support operating the equipment or connecting the equipment to the Eglin test environment. The following is a list of Cyber Security test artifacts required for approvals when requesting connection to a network environment:

- 12.2.1.1. ACAT Level (or N/A if no ACAT)
- 12.2.1.2. Program on DoD Oversight? (Y or N)
- 12.2.1.3. Program Identification Description (PID) been sent?
- 12.2.1.4. What type of Test is requested (if known) (CVI, ADC, CVPA, AA, CRA, CVA, SA, etc.)?
- 12.2.1.5. Classification Level of Test
- 12.2.1.6. Will the test effort be at the Special Access Program Level?
- 12.2.1.7. Expected Test Location (Eglin, customer SIL, etc.)?
- 12.2.1.8. Is a cybersecurity test asset being developed, or will testing be accomplished on an actual system?
- 12.2.1.9. Copy of the Authorization to Operate (ATO).
- 12.2.1.10. If temporary for testing, copy of the Interim Authorization to Test (IATT).
- 12.2.1.11. Copy of the System Security Plan
- 12.2.1.12. Copy of the Plan of Action and Milestones (POA&M).
- 12.2.1.13. Copy of the System Scorecard.
- 12.2.1.14. Copy of the Patch Management Plan
- 12.2.1.15. Threat Reports (Validated Online Lifecycle Threat [VOLT] or Capstone Threat Assessment [CTA])
- 12.2.1.16. System Concept of Operations (CONOPS)
- 12.2.1.17. System Anti-Tamper Documentation

12.2.1.18. If connected to a network, copy of the Ports, protocols and services (PPS) document

12.2.1.19. Any pertinent DODAF diagrams (i.e., OV-1, SV-1, SV-2, SV-6)

12.2.1.19.1. System Viewpoint (SV)-1 System interface – Identification of system, system items and their interconnections

12.2.1.19.2. Operational View (OV-1) High-Level Operational Concept Graphic – The high-level graphical/textual description of operational concept

12.2.1.19.3. OV-2 Operational Resource Flow Description – A description of the Resource Flows exchanged between operational activities

12.2.1.20. Computer Network Defense Service Provider (CNDSP)

12.2.1.21. List of applications with functions

12.2.1.22. List of all system HW and SW with versions to include operating systems

12.2.1.23. Copy of the Evaluated Product List approval letter or other services approval letter for software use.

12.2.1.24. All systems connecting to an Eglin environment will have, at a minimum, antivirus software installed and operating with the latest antivirus definitions files.

12.2.1.25. The test project should provide the POC name, phone number, and email of the Information System Security Manager for the system under test (or the SPO's cybersecurity designee).

12.2.2. With the review/concurrence of the artifacts listed in 12.2.1 by the host system Information System Security Manager (ISSM), the community risk associated with the introduction of the systems in any Eglin network environment will be consider mitigated.

12.2.2.1. If a Cybersecurity authorization is not available, a risk assessment process will be conducted to mitigate the risk associated with the connection request.

12.2.3. Testing Hardware

12.2.3.1. If a test is bringing test hardware to an Eglin test or operational network environment, a check for Federal Information Processing Standard 140-2 is accomplished and an accreditation letter for the hardware may be required.

12.2.3.2. The System Scorecard and System POA&M are reviewed to identify any risk associated with any vulnerabilities identified in the IA controls that are inheritable or expected from the test or operational network environment.

12.2.3.3. As part of the cyber security process the Information System Security Manager (ISSM) documents any risk associated with the addition of the test hardware/system in the environment with an impact memo for record (no-impact, impact with conditions), and provided to the accrediting Authorizing Official. If the test hardware/system is prebuilt, a system virus security scan is typically all that is required.

12.2.4. Communications Tasking Order (CTO) 10-133 requirements (for classified external writable devices only). Equipment that has removable media capabilities is required to provide CTO 10-133 approval or have the external write capability drives disabled.

#### 12.2.5. Wireless or Bluetooth™ Check.

12.2.5.1. All computers and laptops with wireless capability will be verified/disabled, at the bios level, prior to entering a secure facility. If the wireless bios is not disabled, the system cannot enter the facility.

12.2.5.2. At the end of the test event, the system will be restored with wireless and Bluetooth™ capabilities.

#### 12.2.6. TEMPEST Changes (for classified equipment only).

12.2.6.1. Any classified hardware inbound for test should be processed for TEMPEST change through the 96th Communications Squadron TEMPEST Office approval process at least 30 days in advance.

12.2.6.2. Hardware/System location should be planned 30 days in advance in time for inspection.

#### 12.2.7. Reciprocity of Approval.

12.2.7.1. The 96 TW has transitioned to risk management framework, and the Air Force will participate in the reciprocity process to accept other services accreditations and certifications as risk acceptance.

12.2.7.2. The provider of the certification or accreditation will be responsible for the system at EAFB.

#### 12.2.8. Testing Software/Applications only.

12.2.8.1. For software with commercial products, a commercial proprietary license is required for the hardware and software. If the test project provides the licenses, it can be either a temporary or permanent one.

12.2.8.2. If the software is classified, the TE will ensure proper processing and tracking procedures are followed in accordance with the system's Security Classification Guide.

12.2.8.3. If the software is delivered on external hard drive AND is classified, a copy of the AO approval for use per CTO 10-133 documentation for the drive and an anti-virus scan is required.

12.2.8.4. If software is delivered in external hard drive media and it is unclassified, a copy of the approval to use per CTO 10-084 and an anti-virus scan is required.

12.2.8.5. In most cases the test environment owners will require a 30-day notice of inbound software and hardware for preparing purposes.

12.2.8.6. If a test system is to be connected to a network, a copy of the Ports and Protocol Services (PPS) documentation will be required, 30 days prior to the event. If the PPS contain ports not approved by DoD, the port or protocol waiver, from Defense Information Systems Agency (DISA), should be provided.

12.2.8.7. If the test system requires external communications (SIPRNET, NIPRNET), a Domain Network Server (DNS) entry for the system and a firewall exception is required for the external communication.

12.2.8.8. Test event visitors/personnel with privilege user access requirements should provide copies of their 8570.01M current certifications.

12.2.8.9. Most test/network environments have a regular Configuration Control Board (CCB) to discuss proposed, ongoing testing and connectivity (Classified and Unclassified). The TE for the Test will attend the CCB to plan/provide all required artifacts (discovery process) and discuss the test event requirements and schedule of events.

## Chapter 13

### RADIO FREQUENCY AUTHORIZATION

#### 13.1. Overview.

13.1.1. Authorization for radio frequency usage will need to be considered when operating on or off the Eglin Test and Training Range.

13.1.2. To employ or operate “spectrum dependent (S-D) systems” (equipment radiating Radio Frequency energy), a frequency authorization from the Installation Spectrum Manager (ISM) must be obtained. This authorization will be obtained early in the planning cycle IAW AFI 17-220, *Spectrum Management*, EAFB Supplement from the Eglin ISM Office.

13.1.3. A Radio Frequency assignment must be obtained prior to emitting for equipment that radiates or receives Radio Frequency energy, regardless of its power level or how frequently it is used. Depending on the Radio Frequency Assignment (RFA) type requested, the lead times can vary between 1 work week and 18 months. Refer to Planning Phase for more details on the RFA process in [paragraph 4.2.5](#) Radio Frequency Authorization .

13.1.4. Events such as Sensor Week/Month and Advanced Strategic and Tactical Infrared Expendable (ASTE) or other large-scale exercises that require numerous frequencies to support the success of the exercise must contact the ISM Office at least 6 months in advance of the start date of the exercise as it may impact test project execution dates if an RFA is not approved. Consider these events into planning when performing the cost and schedule estimate in the Requirements Definition phase. If the customer’s schedule cannot accommodate any slips, the PE/PM may need to conduct the test project during range quiet time hours in order to avoid conflicts with higher priority missions. If needed frequencies cannot be approved in time to meet the customer’s schedule, a delay may be unavoidable.

#### 13.2. Types and Timelines of RFA.

13.2.1. There are five main types of Assignments/Approvals with which a PE/PM may find himself requiring: RFA with Assignment on hand, Regular Assignment, Temporary Assignment, Straight-Stick (normal) Electronic Attack approvals and Global Positioning System (GPS) Denial approvals. Lead-times provide federal agencies with the time necessary to coordinate and process applications for frequency actions. If the following lead-times are not met, the frequency request should include a mission impact statement if the assignment is not granted by the date requested. Limit such requests to safety-of-life or urgent matters of national security. In all cases, requesting commands should provide justification/operational impacts statement signed by the 96 TW/CC when the requirement does not meet the required lead-time.

##### 13.2.2. RFA with Assignment on Hand

13.2.2.1. A RFA with an assignment on hand typically takes 5 business days to receive from 96 CS/SCXF.

##### 13.2.3. Regular Frequency Assignments

13.2.3.1. A regular frequency assignment is a radio frequency approved for an unspecified period of time (also known as a “permanent” assignment). These assignments must be reviewed every five years by the using organization to validate their continuing need for the frequency. If the need is no longer valid, the assignment is deleted from the record. The ISM requires contact information for each frequency assignment to provide this review.

13.2.3.2. This assignment type is usually requested for S-D equipment that will be used on a recurring basis by a given test project and whose RF technical parameters have been certified by the National Telecommunication and Information Administration (NTIA) through the Military Command, Control, Communications, and Computers Executive Board (MC4EB). All S-D equipment are required to be processed through these agencies.

13.2.3.3. The processing time to receive a permanent assignment is typically 75 business days from the time that the ISM receives all the required information on the GAFC Frequency Request Worksheet Form until NTIA approves the requests for the assignment.

#### **13.2.4. Temporary Frequency Assignments**

13.2.4.1. A temporary frequency assignment is made for a specified period of time generally not to exceed two years. Most of the test and training projects that are conducted at Eglin will fall into this type of assignment.

13.2.4.2. The processing time to receive a temporary assignment is typically 75 business days from the time that the ISM receives all the required information on the GAFC Frequency Request Worksheet Form until NTIA approves the requests for the assignment.

#### **13.2.5. Electronic Attack Approvals**

13.2.5.1. Electronic Warfare, “Straight Stick” Electronic Attack, and GPS Denial are not recognized as an authorized service by the National Level approval authority (i.e., NTIA and Federal Communications Commission [FCC]). Additionally, there are strict controls and guidelines for the use of frequency bands controlled or shared with the Federal Aviation Administration (FAA) and FCC because of safety-of-life issues relating to commercial aviation flight routes and terminals. With proper coordination and approvals, electronic attack and GPS Denial testing may be performed under the conditions set forth in the approval directives issued to ensure that harmful interference will not be caused to authorized services.

13.2.5.2. Prior to the initial test date for all electronic attack operations, including chaff drops and GPS Denial operations, within the EAFB Test and Training Complex, formal authorization must be obtained.

13.2.5.3. The processing time to receive an electronic attack approval is typically 75 business days from the time that the ISM receives all the required information on the GAFC Frequency Request Worksheet Form.

13.2.5.4. This form must be submitted to the ISM via SIPRNet medium whether the countermeasure activity will be classified or unclassified.

### **13.3. Application for Equipment Frequency Allocation.**

13.3.1. The PE/PM coordinates customer's requirements with ISM using the Stepstone online system found at <https://www.stepstoneeditor.com/index.jsp>. This is a very complex form to complete, and all fields must be filled. The PE/PM will forward the completed file (in an xml format) to the ISM for processing the application for equipment frequency allocation to obtain spectrum certification, and ensure submission to the Air Force Spectrum Management Office (AFSMO) for processing to NTIA and the MC4EB. Once this is approved, the ISM will initiate action for frequency assignments and issuance of the RFA.

13.3.2. This process can range from 12 to 18 months for final S-D equipment certification through the NTIA and MC4EB after ISM submission of the application to AFSMO. A PE/PM may not know if the Stepstone file is required until after submission of the GAFC Frequency Request Worksheet Form. Therefore, it is important to submit this form as soon as all required information is known.

### **13.4. RFA Issuance.**

13.4.1. RFAs for JON projects are issued to the PE/PM of that particular project and to the Operations Support Squadron's (OSS) Frequency Control and Analysis Office (96 OSS/OSOQ) for schedule de-confliction. Any modifications to the RFA must be addressed through the ISM office who is the approval authority for all frequency authorizations for the ETTC.

13.4.2. The PE/PM will file unclassified RFAs in the Livelink™ project folder.

13.4.3. Classified RFAs will be handled in accordance with current security guidance procedures.

13.4.4. RFAs that support administrative functions are issued to the designated POC and Frequency Control and Analysis.

## Chapter 14

### AIRCRAFT MODIFICATIONS AND FLIGHT RELEASES

#### 14.1. Aircraft Instrumentation/Modification Planning.

14.1.1. Some of the Test Wing's missions require temporary T-2 modification of its own aircraft as well as other military and commercial aircraft. The T-2 modifications are temporary hardware or software changes or alterations to aerospace vehicles (aircraft, guided weapons, Unmanned Aerial Vehicle and their associated ground stations, and missiles other than strategic), airborne support equipment, external and internal stores, subsystems, components, or support equipment which is governed by Technical Orders (T.O.) that interface with an aerospace vehicle. T-2 modifications include instrumentation modifications, but can also be temporary changes to prove, develop, or characterize future permanent modifications. These modifications can potentially impact the functionality of CCF Mission Control Room displays, so it is important to coordinate with 96 RNCS when necessary.

14.1.2. T-2 modifications include carrying uncertified aircraft/stores combinations for reasons other than stores certification. Formal certification of external and internal stores through the U.S. Air Force aircraft/stores certification program is governed by AFI 63-101/20-101, *Integrated Life Cycle Management* and AFPAM 63-129, *Air Systems Development and Sustainment Engineering Processes and Procedures*, Chapter 1. This AFI also regulates the issuance of flight clearances for Initial Operational Test and Evaluation. These temporary changes may be installed only for the duration of the flight test unless revalidated or waived.

14.1.3. Regardless of the ownership of the aircraft, each modification/demodification process is complex which the PE/PM should be cognizant of and plan for in the cost and schedule. All ROM requests for 896th Test Support Squadron (TSS) T-2 modifications will go through the Configuration Modification Management Team (CMMT).

#### 14.2. 96 TW Aircraft Modification Process.

14.2.1. The fleet of aircraft available in 96 TW can be highly instrumented to acquire flight test data from aircraft systems and from installed test hardware or software. Frequently, a new test project will require additions or changes to the onboard aircraft instrumentation systems to acquire specialized test data. These changes can be hardware, either electronic or mechanical, and/or software.

14.2.2. The PE/PM should be aware that the process of planning for, procuring, and installing new aircraft instrumentation can be extremely lengthy, which involves planning, engineering design, and installation, which can take many months.

14.2.3. If a modification to a 96 TW aircraft is required, the PE/PM should consult with the 96 TW Configuration Manager (40 FLTS/CAX) to ascertain aircraft schedule availability and to discuss any technical risk of the proposed modification.

14.2.4. The 896 TSS Project Manager will initiate, coordinate, and track the configuration process using critical chain project management.

14.2.5. Modifications can affect critical areas such as structure, propulsion subsystems, avionics systems, software, aerodynamics or stability and control. To ensure safety, aircraft configurations are strictly controlled during all modifications. A CCB will be convened IAW Air Force Materiel Command (AFMC) Instruction (AFMCI) 21-126, *Temporary 2 (T-2) Modification of Aerospace Vehicles*, and any local supplements.

14.2.5.1. The T-2 modification CCB manages the technical review and approval of T-2 modifications.

14.2.5.2. The 96 TW Configuration Control Board (CCB) Chairperson is the 96 OG/CC. The 896th Test Support Squadron has been delegated instrumentation Modification Engineering Authority (MEA) for F-15, F-16, and UH-1N aircraft possessed by the 96 TW and 53 WG. Modifications initiated by organizations that hold MEA over the aircraft/store/equipment to be modified will go through the 96 TW modification process before being installed. See AFMCI21-126\_EGLINAFBSUP.

14.2.5.3. During engineering design of the T-2 modification, the 896 TSS will perform System, Electrical, and Mechanical analysis. A preliminary Airworthiness assessment will also be determined by the Chief Engineer/Delegated Technical Authority residing in the 896 TSS. All issues/risks will be identified to the CCB. Even so, modification installations often present unforeseen problems, such as unavailable or incorrect parts or hardware. The PE/PM will be provided a schedule and cost risk assessment with a modification ROM/estimate which will provide awareness of the uncertainty associated with the given modification.

14.2.5.4. PE/PM may refer to the AFMCI 21-126, *Temporary 2 (T-2) Modification of Aerospace Vehicles*, and AFMCI21-126\_EGLINAFBSUP to understand the T-2 aircraft modification process and requirements.

14.2.5.5. Many if not most aircraft modifications require Electromagnetic Environmental Effects (E3) testing to ensure a non-standard modification does not affect production aircraft systems. The requirement for E3 testing is determined by the MEA presiding over the modification. If E3 testing is required, the PE/PM should understand that not all costs associated with E3 testing will be included in the 896th modification estimate. E3 test costs outside the 896th organization such as maintenance support, fuel and non-896th contractor support for the E3 test will be considered by the PE/PM.

14.2.5.6. 96 MXG and 896 TSS handle weight and balance details. Because many test aircraft already have extensive modifications on board, they may already be near weight and balance limits. If early investigation determines that the proposed modification will exceed these limitations, then an adaptation of a project's technical solution should be done.

### **14.3. Other Command-Owned Aircraft Modification.**

14.3.1. If a modification to a non-96 TW aircraft is required, the PE/PM should consult with that platform's Configuration Manager to ascertain aircraft schedule availability and to discuss any technical risk of the proposed modification.

14.3.2. The platform's Configuration Manager will initiate, coordinate, and track the configuration process.

14.3.3. Any test-related modifications, to include instrumentation systems, should be coordinated through the aircraft-owning agency's airworthiness authority (typically Air Force Life Cycle Management Center [AFLCMC] for USAF aircraft) who should follow the CCB processes outlined above IAW AFMCI 21-126.

14.3.4. Ultimately, the aircraft SPO has the responsibility for aircraft modification planning, approval, execution, and demodification; however, the TEO should remain engaged to ensure modifications are approved and airworthiness documentation is provided in a timely manner to support test execution schedules.

#### **14.4. Airworthiness/Flight Releases.**

14.4.1. Airworthiness (sometimes used synonymously with the issued document, either a flight clearance or flight release) is the verified and documented capability of an air system configuration to safely attain, sustain, and terminate flight in accordance with the approved aircraft usage and operating limits. Flight clearances contain the limits for carriage, employment, and jettison in airspeed, symmetric and asymmetric load factor, and dive angle. The flight clearance may also state the roll rate category of the configuration. The type of modification to the aircraft (internal versus external modification) will dictate the process by which a PE/PM obtains a flight clearance. For all noncertified combinations of external stores, new stores, or nonstandard fuse or lanyard routings, a flight clearance is required to conduct flight testing on AFMC aircraft. These clearances are intended for flight test missions only and are generated by the respective aircraft SPO. For T-2 modifications installed by the 896 TSS, Airworthiness determinations have been delegated to the 896 TSS. These delegations are for No Impact and Impact, Non-Reportable modifications. Airworthiness authority for Reportable modifications resides with the USAF Technical Airworthiness Authority.

14.4.2. Unmanned Aerial System Airworthiness Civil Aircraft Operations (CAO)/Public Aircraft Operations (PAO). AFTCI 62-602, *Airworthiness*, applies to both manned and unmanned aircraft that support missions at AFTC test sites. These aircraft operations will generally be classified as PAO. The TE will ensure that sufficient information with respect to operations, maintenance, modification, training, oversight, etc., are developed/documented and provided IAW AFTCI 62-602, *Airworthiness*.

14.4.3. External Modifications to the Aircraft – Non 896 TSS Instrumentation. For an external modification to the aircraft, the PE/PM ensures that the SEEK EAGLE Office is contacted to initiate a SEEK EAGLE Request IAW AFI 63-101/20-101 and AFPAM 63-129. Once the work request is initiated, SEEK EAGLE issues a recommendation for flight clearance to the SPO who in-turn issues the flight clearance along with the appropriate Interim Authorization to Test (IATT) and Authority to Connect (ATC) certifications. It is important that a PE/PM understands that SEEK EAGLE does not work on the internal 96 TW priority but has its own Air Force SEEK EAGLE Priority List.

14.4.4. Internal Modification to the Aircraft – Non 896 TSS Instrumentation. When an internal modification is required for an aircraft, the PE/PM contacts the appropriate aircraft SPO. The SPO is responsible for issuing the flight clearance in addition to any IATT and ATC approvals for the modification to connect to the platform. This can take several weeks to accomplish depending on the aircraft SPO workload.

14.4.5. Commercial Aircraft Modifications

14.4.5.1. On rare occasion, a commercial entity will require a modification to its aircraft in order to support testing for the 96 TW.

14.4.5.2. There is no military flight clearance required as the FAA is the airworthiness authority.

14.4.5.3. Leased or contracted aircraft used in missions will be assessed for airworthiness by the AFTC. Each leased aircraft operation will be classified as either CAO or PAO according to the process specified by AFTC.

14.4.5.3.1. Leased aircraft operating as CAO or PAO complies with AFTCI 62-602, *Airworthiness*, and any additional local supplements.

## Chapter 15

### MUNITIONS

#### 15.1. Forecast and Allocate Munitions.

15.1.1. “Forecasting/allocations” is the process by which you gain authorization to use munitions. Failure to submit your requirements in an appropriate manner can result in failure or delay of your project. Whether the forecast is for missiles or air-to-ground munitions, all PE/PMs, through their organizations, are responsible for forecasting munitions requirements. A PE/PM may never forecast or allocate a munition, as generally the customer (SPO) will provide the munitions in support of the project. However, a PE/PM may receive a needs call to forecast for combat ammunition system-managed components/munitions (fins, impulse cartridges, etc.) needed to support test project requirements involving other munitions. For more assistance on the forecasting/allocation process, contact the squadron munitions custodian.

#### 15.2. Receive Munitions.

15.2.1. Munition receipt can sometimes be a lengthy process, especially if the munition is not an inventory item with standard Technical Order information available to the munitions custodian or storage facility. While munitions movement is generally a responsibility of the TE, the PE/PM should be cognizant of any technical and schedule risks due to receiving a munition for testing.

15.2.2. Test/Contract Assets. Munitions assets received in support of research and development tests, to include non-Air Force-owned munitions assets, may be managed on the stock record account, issued, and controlled by procedures in DAFMAN 21-201, *Munitions Management*. Accountability, safety, and security of DoD owned and non-DoD owned research and development assets in the physical possession of Air Force activities are enhanced by management in Accountable Theater Integrated Combat Munitions System (TICMS). Units supporting RDT&E activities with non-DoD or foreign munitions and explosives ensure storage is approved IAW DESR6066.09, *Explosives Safety Standards*, and/or authorized/excepted IAW AFI 32-9003, *Granting Temporary Use of Air Force Real Property*.

15.2.2.1. The starting point for a test project to receive a munition from a SPO is that the owning SPO or customer provides the technical data, Material Safety Data Sheet, Interim Hazard Classification (IHC), chemical constituency data, and disposal data to the Munitions Accountable Systems Officer (MASO) and/or Inspection NCOIC prior to the munitions item(s) arriving to Eglin’s Munitions Storage Area (MSA).

15.2.2.1.1. The PE, PM, and/or SPO will include Key Supporting Document (KSD) information required to get a TICMS National Stock Number (TNSN) into the technical data package and/or IHC so assets can be accounted for in TICMS prior to the assets arriving to Eglin’s MSA. Required data elements for TNSN submission are as follows:

15.2.2.1.1.1. Noun

15.2.2.1.1.2. Hazard Class/ Division

15.2.2.1.1.3. Hazard Symbol

- 15.2.2.1.1.4. NEW
- 15.2.2.1.1.5. Compatibility Group
- 15.2.2.1.1.6. Unit of Issue
- 15.2.2.1.1.7. Unit Cost
- 15.2.2.1.1.8. CIIC
- 15.2.2.1.1.9. Lot or SN managed
- 15.2.2.1.1.10. Comments
- 15.2.2.1.1.11. Service Life
- 15.2.2.1.1.12. Shelf Life
- 15.2.2.1.1.13. Demil Code
- 15.2.2.1.1.14. Source of Supply
- 15.2.2.1.1.15. ERRC
- 15.2.2.1.1.16. Inspection Interval
- 15.2.2.1.1.17. QUP
- 15.2.2.1.1.18. Budget Code
- 15.2.2.1.1.19. UN
- 15.2.2.1.1.20. P/N
- 15.2.2.1.1.21. SPI
- 15.2.2.1.1.22. DIFM Indicator

15.2.2.1.2. Any question(s) concerning minimum data required for TNSN processing will be brought to the 96 MXS MASO and/or Munitions Flight Supervision.

15.2.2.2. The PE/PM also ensures that the documentation that validates test requirements is provided to the receiving MASO. Applicable Test Directive, test project plan, contract purchase order, Government Purchase Card (GPC) purchase order, Military Interdepartmental Purchase Request (MIPR), or active AFMC JON will be maintained by the MASO for audit purposes.

15.2.2.3. Test and contract munitions received without technical data, technical data package, IHC, or other KSD information will be placed in condition code J (suspended from issue and use, condition unknown) until technical data, IHC, and/or KSD information is received. In the event approved technical data, IHC, and/or KSD information is not received within 30 days of assets being placed in condition code J, an Ammunition Disposition Report will be processed to authorize disposal or return to origin. Attendant expenses involved will be charged to the project's JON.

15.2.2.4. The TE will route, as the security level and proprietary information in the document allow, the Technical Data for Munitions package electronically via Livelink™. The package will be reviewed and approved within 20 business days of receiving complete and accurate technical information. 96 MXS Munitions Flight MASO and/or Inspection NCOIC will have all tech data, tech data package, IHC, and KSD information for all munitions assets before arriving to Eglin's MSA. In the event assets arrive to Eglin's MSA missing any of the aforementioned information then the requirements of **paragraph 15.2.2.3** will apply.

15.2.2.4.1. The TE will include as available a copy of any Army or Navy Interim Hazard Classification, a final hazard classification from Joint Hazard Classification System (if available), or a Department of Transportation hazard classification letter in the supporting documents folder when the technical data is submitted in Livelink™.

15.2.2.5. All munitions will be shipped to:

**Figure 15.1. Munitions shipping address.**

|  |
|--|
| <p>FV2823<br/>         2605 Perimeter Road, Suite 112<br/>         Eglin AFB FL 32542-5000<br/>         Mark For: (Applicable JON)<br/>         Attn: (TE's name and number)</p> |
|--|

15.2.2.6. The Technical Data for Munitions package requires an annual review to validate continued use and currency of information. The PE/PM and the Test Engineer are responsible to ensure this review is accomplished prior to the Technical Data for Munitions expiration. Items will be impounded if the annual review is overdue by 30 days and disposed or returned to origin if overdue more than 90 days. A Technical Data Package workflow is available in Livelink™ to assist with this review.

### 15.3. Develop Checklists.

15.3.1. There are two main checklists with which the PE/PM should be concerned: the build-up/break down and the aircraft loading checklist.

15.3.2. Munitions Handling (Build-up/Break down) checklist. For standard munitions or configurations, existing TOs and checklists are used. For munitions being developed or modified, local checklists should be created. The TE must ensure that the munitions handling checklists are developed IAW AFTCI 63-101/20-101, *Technical Order Writing Procedures*, and/or EAFBI 91-206, *Munitions Source Data*.

#### 15.3.3. Aircraft Loading Checklists

15.3.3.1. The TE must ensure that the aircraft loading checklists are developed in conjunction with Air Force SEEK EAGLE (AFSEO) and AFTCI 63-101/20-101.

15.3.3.2. These checklists are then coordinated, verified, and approved through Quality Assurance, Weapons Standardization, Weapons Safety, Configuration Management, and the chief of Standardization/Evaluation. The checklist verification usually occurs during a fit and function ground mount with Safety and Quality Assurance and AFSEO present.

15.3.3.3. The ground mount will be as complete as possible, verifying not only loading checklists but also stores management operation and aircrew procedures. Once the checklists are developed, munitions personnel should be properly trained.

15.3.3.4. When the test item will be up/downloaded more than once, dedicated load crews should be trained. To provide for this training, the TE should ensure that arrangements are made such that the test item is available sufficiently in advance of the first mission to permit checklist development and load crew training to be completed. It is vital the TE facilitate this training by ensuring the loading checklist has been completed with enough time to perform the training before first flight/ground mount.

15.3.3.5. The checklist and inert munitions are required a minimum of 6 weeks prior to the first event.

#### **15.4. Storage and Transportation.**

15.4.1. Once a test project has ensured that the correct paperwork is available and checklists are developed and validated, munitions storage is a benign schedule consideration. A PE/PM will, however, budget for the munitions storage per day fee at Test Area C-74A (“MUNS” in the Product and Service catalog) or arrange for a preferential fee determination based on the duration of days stored. The storage fee is charged a daily fee per pallet stored per day which includes the cost of the security guards. There is no storage fee for munitions stored at the MSA. Additionally, the test project will also be charged for 96 MXS MSA support such as Munitions Inspection based on Inspection Interval identified in the Technical Data for Munitions package, actions required due to expired Technical Data for Munitions, munitions builds/prep for use/delivery and Line Delivery to deliver and return munitions to and from the MSA. When assets arrive to Eglin’s MSA without technical data, technical data package, IHC, or other relevant information then 96 MXS Munitions Flight personnel will not transport the assets outside of the MSA. Procedures outlined in [paragraph 15.2.2.3](#) apply for munitions items stored or transported without current technical data, IHC, or KSD information.

#### **15.5. Shipment/Disposal of Munitions Upon Test Completion.**

15.5.1. The PE/PM ensures that at the completion of test activities, there is funding available for demilitarization and transportation of munitions test assets purchased outside the normal Air Force allocation process. The PE/PM coordinates with MASO the appropriate funding line to cover these remaining expenses IAW DAFMAN 21-201.

15.5.2. Charges to demilitarize and transport munitions are legitimate customer charges. The PE/PM uses procedures established in [paragraph 16.8.1](#) to accept and adjudicate late project charges in the Cancelled (X), Closed-out (Y) and Closed (Z) phases.

## Chapter 16

### MONITOR AND CONTROL

#### 16.1. Monitor and Control Overview.

16.1.1. While the 96 TW test project management process is built on a six-phase process, there are certain activities that a PE/PM should accomplish during any and sometimes all phases of the project. Throughout the life of a test project, the PE/PM is expected to control cost, schedule, and scope; mitigate risks; and communicate the status of the project to customers and management.

16.1.2. The PMB is the best educated estimate of the project when established and agreed to by the customer. Like any plan, the PMB is subject to real world challenges, both known and unknown. The PMB is the reflection of the project status against that agreement. The TW understands that project breaches will occur and projects may need to be replanned or rebaselined. It is not a reflection of the PE/PM, but the realities of a dynamic environment of schedules, requirements, System Under Test (SUT), weather and a multitude of other factors.

16.1.3. The PE/PM will ensure their programs (TDs) are reviewed IAW AFTCI 91-202 and locally developed supplements.

16.1.4. DODI 4000.19, *Support Agreements*, and AFI 25-201, *Intra-Service, Intra-Agency, and Inter-Agency Support Agreements Procedures*, paragraph 3.5. Support Agreement Reviews, require annual budget reviews for agreements with reimbursable support. Customer agreements are considered a type of support agreement. Therefore, PE/PMs should ensure annual reviews of their customer agreements. Any customer agreement update satisfies this requirement and establishes next review date.

#### 16.2. Monitor Costs.

16.2.1. The PE/PM should proactively monitor the costs of all projects within their portfolio at least monthly (recommended completion prior to mid-month consolidation). The PE/PM should review charges and address cost breaches when required and deferrals once realized. The TW consolidates and reviews project performance for metrics, reviewed at the wing, center, and command level. More information on breach reasons and definitions are located in [paragraph 16.5](#) PMB Breaches below and [Attachment 4, Table A4.1](#) Breach Reasons and Descriptions. Breaches and their impact on the PMB are discussed in [paragraph 17.9](#) Breach Reasons. Information on consolidated project PMBs is reviewed and reported at the TW, center and command level. That process is described in in [Chapter 22](#), Metrics and Project Management Reviews.

##### 16.2.2. Reviewing Charges

16.2.2.1. During each test, the PE/PM is responsible for reviewing ACWP charges, identifying questionable charges, researching and correcting questionable charges, and tracking test progress against the PMB. Reference [paragraph 17.4](#) Terms and Meanings in Earned Value for additional information regarding ACWP.

16.2.2.2. The PE/PM should assess and ensure WBS 0000 (quad zero) charges are reallocated to the appropriate WBS using WBS ACWP edit function in EVCAS.

### 16.2.3. Fault Billing

16.2.3.1. In addition to using the reports to review actual charges, the PE/PM should also review that the correct fault billing procedures have been followed. Scheduled resources are charged after the Ops Order is signed to the test program whether or not they were actually used.

16.2.3.2. A fault billing procedure determines who pays for the test resources. Based on the information provided on the test's PMR, 96 TW /XPO should make a determination of who is responsible for the test charges and assign a fault code to the PMR.

16.2.3.3. The fault billing process is detailed in 96 TW Instruction 65-602, *Mission Billing Procedures*.

**16.2.4. Deferral Management.** A deferral is the consequence of actions that result in an over-commitment, over-obligation, or over-expenditure of funds available for the testing effort at hand. This shows as a negative balance on the Job Order Status Report (JOSR). Deferrals can occur in any phase of the test cycle, including completion. The effect is 96 TW Direct Budget Authority (DBA) has been used for a customer's requirement without reimbursement. Deferrals should be avoided at all costs as they reduce our ability to fund 96 TW requirements.

16.2.4.1. Once a deferral exists or is imminent, the PE/PM will advise the TEO Commander who will determine whether to stop work.

16.2.4.1.1. If a deferral exists or is imminent on a commercial or Foreign Military Sales (FMS) test project, the TEO Commander will stop work immediately until sufficient funding is provided for the project.

16.2.4.2. A Customer Agreement revision should be prepared requesting additional funds for deferrals occurring during the Planning, Active, or Reporting phase.

16.2.4.3. Great effort should be exerted to collect funds from customers for the total test cost billed to their JON. On a monthly basis, 96 TW/FMP will send or post a list to each Group's budget office to highlight JONs that are in deferral. After 120 days of the JON being in deferral, the TEO's DBA will be used to cover the deferral. If customer funding is received, the TEO will have its DBA returned to execute 96 TW requirements.

16.2.4.4. For expired year deferrals, a deferral write-off can occur but require approval by the JOCAS Chief and 96 TW/FM.

16.2.4.5. If a TEO elects to absorb a deferral, it will be paid from the TEO's budget. The cost will be included in the Group or Squadron's monthly funds status.

### 16.3. Monitor Schedule.

16.3.1. The PE/PM should monitor schedule progress and actively mitigate schedule risk by following good activity management. Some recovery actions that a PE/PM can take with respect to schedule slippage are to replan, amend Customer Agreement, or request higher scheduling priority.

16.3.2. Refer to [Paragraph 4.6](#) Customer Substantially Delays Test and [Paragraph 4.7](#) Customer Terminations during Planning Phase for guidance as necessary while monitoring programs. Either of these cases may require Replanning (Cost or Schedule), as described below.

16.3.3. Similar to 16.2. Monitor Cost above, projects may also be identified as breached. The TW uses the same consolidation procedures briefly described there and the other referenced paragraphs to adjudicate/correct.

#### **16.4. Replanning (Cost or Schedule).**

16.4.1. Replanning is a realignment of schedule or reallocation of budget for the remaining effort within the existing cost and schedule constraints of the Customer Agreement. Replanning is not to be used to keep cost performance index (CPI) and schedule performance index (SPI) data favorable when it should be reported otherwise. For cost reallocation, the BCWS does not exceed the budget in the Customer Agreement, nor is the schedule adjusted to extend beyond the RFTD WBS milestone as defined in the Customer Agreement.

16.4.2. Based on the availability of resources, expertise and test team consultation, the PE/PM can reallocate the budget or realign the schedule for the remaining effort within the existing schedule and cost constraints of the Customer Agreement Budget at Completion (BAC).

16.4.3. Project Replanning Constraints: The PE/PM may replan a JON, without approval, in accordance with the following criteria:

16.4.3.1. PS00 and RFTD WBS codes are required in latest baseline version (LBV). They define the planning beginning date (date customer signed Customer Agreement) and test ending date (date final technical deliverable was submitted to customer or date final test event was completed), respectively, that bound the overall commitment to the customer *which cannot be changed*.

16.4.3.2. Replanned WBS codes should be wholly contained within the above commitment PT00 start and RFTD end dates. All WBS dates must also fall between two Livelink™ (Customer Signature Upload and Test Completion) dates. This only applies to WBSs that are being modified. If a WBS date falls outside of the two Livelink™ dates it is ok as long as it is not being modified. In other words, if you are not changing it from the latest baselined version.

16.4.3.3. Replanning can only be accomplished on JONs where less than 60% of the number of days between beginning date of PS00 and ending date of RFTD WBS codes have elapsed. After the 60% threshold is exceeded, the replanning function is no longer available, and rebaselining needs to be considered. Reference [paragraph 4.5](#) Changes in Test Requirements – Rebaselining for more information on rebaselining.

16.4.3.4. Total JON BAC should remain unaffected (i.e., working copy and LBV BAC should match). For example: funds can be moved between WBS codes, but the overall budget has to remain unchanged. Any increase in BAC is a change in Customer Agreement scope and requires a Customer Agreement revision and re-baseline.

16.4.3.5. A PE/PM should not change the start date for a WBS activity that has legitimately started. This means that once a percent complete has been recorded for a WBS activity, the start date should not change.

16.4.3.6. A WBS cannot be changed to Level of Effort (LOE) status during re-planning.

16.4.3.7. The JON BAC cannot be changed during re-planning. The BAC value remains the same from the latest baseline. Resource dollars can be moved from one WBS to another, but the overall total for all WBSs must match the baseline version.

16.4.3.8. In TPT, the “Replan” link is on the JON/WBS edit page, to the right of the Baseline link.

16.4.3.8.1. The link is blue if:

16.4.3.8.1.1. The JON is a Test JON.

16.4.3.8.1.2. The current date is < 60% of the period between the Livelink™ Customer Signature Upload and Test Completion dates. This is based on the latest SOC revision number data in Livelink™. If the data is incorrect, or contains duplicate records with the same version, re-planning will not be available.

16.4.3.8.1.3. The JON has been previously baselined.

16.4.3.8.2. The link is red if:

16.4.3.8.2.1. Any of the conditions in [paragraph 16.4.3.6.1](#) above are false.

16.4.3.8.2.2. Clicking on the red “Replan” link will report the reason(s) the JON cannot be re-planned.

16.4.3.8.3. The link is not visible if the JON has no WBSs.

16.4.4. If the PMB is replanned, the PE/PM should report a replanning reason from the drop-down menu in EVCAS.

## 16.5. PMB Breaches.

16.5.1. EVCAS is programmed to automatically (after mid-month JOCAS consolidation) identify, notify, and receive (through PE/PM input) cause and mitigation for out of tolerance cost and schedule performance variances. The cost and schedule breach variance bounds (currently +/- 15%) are periodically reviewed and revised by the 96 TW/XP. The purpose of the PMB breach notice is to provide the ability to analyze deviations from the established PMB which permits management, at all levels, to rapidly and effectively implement corrective actions in an effort to regain mission execution effectiveness where appropriate and review the tactical and strategic needs of the enterprise.

16.5.2. Prior to mid-month consolidation, PE/PMs should update their project’s cost and schedule completion percentages. Following mid-consolidation, an automated email message is sent to the primary PE/PM for projects outside the breach variance bounds. The PE/PM is given a three day suspense to update and clear any breaches.

16.5.3. The PE/PM addresses all breaches in EVCAS by providing the appropriate breach reason(s) with comments and assigns a percentage causation to the reason. While multiple breach reasons can be cited, totaling 100%, only the top three breach reasons will be reported to higher headquarters. The accompanying comment should fully support the breach reasons selected. All comments should be written so management, through AFTC, can easily understand the issue causing the breach.

16.5.4. Breach reasons and their definitions are provided on the 96 TW SharePoint™ site in the *Test Process Policies* folder and in [Attachment 4](#), Table [Attachment 4](#). Breach Reasons and Definitions.

16.5.5. Best practices for selecting breach reasons.

16.5.5.1. Any delays, schedule changes, or test scope changes requested by the customer is an external Requirements/Scope Change.

16.5.5.2. Breach reason Maintenance/Modification is for TW aircraft issues. These issues could be associated with aircraft maintenance delays or difficulties with T-2 modifications. Comments using this reason should include the aircraft and details of the problem. This breach reason is not used for administrative changes to the PMB.

16.5.5.3. Breaches due to PE/PM administrative errors on PMB should use Other. Comment should include brief description of the error.

16.5.5.4. Use Insufficient Manpower breach reason for delays or unavailability due to schedule slips outside the customer agreement dates. It should not be used for failing to update PMB for actual work complete on the test.

16.5.5.5. Use System Under Test (SUT) Issues for delays of delivery or readiness directly related to the system as scheduled in the customer agreement. External Resource Availability is used for other customer-provided resources or non-96 TW test range not being available or delayed. This reason can also be used if a non-96 TW aircraft is not available. For non-availability of 96 TW aircraft, Resource unavailable – aircraft would be the proper reason to use. Late Supplier Delivery is specifically for customer supplied assets provided late. PE/PM should choose the best reason, and provide specific comments on the issue, including the resource or asset causing delays.

16.5.5.6. Range unavailable (identify range), resource unavailable (identify resource, facility, etc.), and Resource unavailable – aircraft are reasons used to identify delays or unavailability of TW resources. PE/PMs should pick the best reason and provide specific comments on what is not available.

16.5.5.7. Scope Change (Financial) reason is used when the customer changes the scope of the project due to available funds. It can also be used for FY funding of a multiyear project.

16.5.5.8. Not all breaches are negative. The system also captures positive breaches, like Conservative Estimate. Comments associate with these breaches can help identify process improvements. PE/PMs should provide a clear, short comment on the breach, and recommendations for improvement, if applicable.

16.5.5.9. Use of Other as a reason should only be used sparingly, if other breach reasons are not adequate.

16.5.5.10. Only the top three breaches, based on PE/PM assigned percentage and TPT order precedence, are reported to higher headquarters.

16.5.5.11. Recommend using the same comment for both cost and schedule breaches.

16.5.6. Reference [Chapter 17](#) Earned Value Management for more information on breaches.

16.5.7. Reference [Chapter 22](#) Metrics and Project Management Reviews for more information on how Test Project information is consolidated and presented in the TW, AFTC and AFMC. This includes the monthly metrics reports, and the quarterly Mission Essential Task List (METL) reports.

## 16.6. Cost, Schedule, Scope Changes.

16.6.1. Customer Agreement Revisions. As the Customer Agreement is the governing agreement with the customer, it is imperative that the Customer Agreement is a close reflection of the executed work package.

16.6.1.1. Any labor-intensive Customer Agreement revision after the initial PS00 WBS Customer Agreement should be sequentially numbered PS01, PS02, etc. For these Customer Agreement revisions, the PE/PM should not revert back to the Requirements Definition phase.

16.6.1.2. A Customer Agreement requires revision if the cost or schedule requirements significantly change from that agreed to in the previous Customer Agreement. A revised customer agreement is developed to capture the changes and document the new costs (increase or decrease) and the new schedule.

16.6.1.3. Any significant agreements made to the scope of the work should also be documented in a revised Customer Agreement. Once the Customer Agreement is revised, it becomes the new baseline from which the project is assessed.

16.6.1.4. Complete a DTO Assessment for every Customer Agreement or PMB rebaseline IAW AFTCI99-103, paragraph 2.3.3.

16.6.1.5. Customer Agreement revisions should be accomplished whenever cost performance indicates the need for adjustment of the original current Customer Agreement value amount upward or downward, but before the cost performance has exceeded 75 percent, when compared with the current Customer Agreement amount.

16.6.1.6. Once the new agreement is signed, using Livelink™ to coordinate, the PE/PM should update EVCAS to reflect the cost and schedule changes and the JON rebaselined. When rebaselining the PE/PM should provide a reason for the rebaseline. There are several reasons from which to select. The reasons are grouped by “External” customer’s reasons, or “Internal” Eglin’s reasons. A list of rebaseline reasons and definitions are located in [Attachment 4, Table 4.2](#), Rebaseline Reasons and Definitions.

16.6.1.7. **Note:** Revisions to Statements of Capability occur by mutual agreement. A customer can deny a Customer Agreement revision.

### 16.6.2. Test Directive Amendments.

16.6.2.1. If it becomes necessary to amend test documentation, such as a change in scope, those amendments must be approved by the TEA IAW AFTCI 91-202 and all local supplements.

16.6.2.2. A change in scope is defined as those changes which significantly alter the size of the test, exceed the previously approved test envelope, introduce any new test hazards, or modify the previously approved objectives.

16.6.2.3. Test Directive amendments may drive a change to the test scope, requiring a revised Customer Agreement.

**16.7. T&E Project Management Review (PMR).**

16.7.1. Upon request, the PE/PM should, through their TEO Commander/Director, provide input to the 96 TW T&E PMR.

16.7.2. The PMR is held at the request of the Wing Commander, usually on a quarterly basis, and are coordinated by 96 TW/XP.

16.7.3. The PE/PM may be requested to supply a high profile project status report (i.e., Quad Chart) or could volunteer to supply a high profile status report.

16.7.4. The goal of the status report is to alert the Commander of any issues that a TEO believes could rise to the Commander's level of risk management involvement with specific emphasis on meeting technical objectives or schedule.

16.7.5. Classified PMRs are coordinated by 96 TW/AP and are held quarterly.

16.7.6. Additional information on PMRs and Metrics are located in [Chapter 22](#). Metrics and Project Management Reviews.

**16.8. Late JON Charges in Cancelled (X), Close-out (Y), and Closed (Z) Phase.**

16.8.1. Occasionally, last charges show up after JONs are put in the Cancelled, Close-out, and Closed phase. The TW must adjudicate these charges from the systems discussed in [paragraph 8.1.6](#) External systems interfacing with JOCAS. Legitimate charges to JON should be billed to the customer.

16.8.2. When notified of valid late JON charges, PE/PM should contact their group's financial chief. The PE/PM should not change the TPT JON phase themselves to allow these charges. Uncoordinated changes may impact TW Metrics. The financial chief will coordinate the JOCAS phase change with 96 TW/FMP to allow the valid charges. Once the charges are submitted, the JOCAS phase will return to its previous phase. This process is normally accomplished during the same day.

## Chapter 17

### EARNED VALUE MANAGEMENT

#### 17.1. Earned Value Management Overview.

17.1.1. The 96 TW uses Earned Value Management (EVM) to estimate and track test costs, schedule progress, project overall costs at completion, and identify potential shortfalls and cost overruns before they occur. According to the DoDI 5000.02T Enclosure 2, “EVM is one of DoD’s and industry’s most powerful program planning and management tools. It is normally used in conjunction with cost plus and fixed-price incentive contracts with discrete work scope. The purpose of EVM is to ensure sound planning and resourcing of all tasks required for contract performance.” 96 TW’s use of EVM allows for a common management language with the acquisition community.

17.1.2. EVM is a project control process based on a structured approach to planning, cost collection and performance measurement. It facilitates the integration of project scope, time and cost objectives and the establishment of a baseline plan for performance. It also provides project management information in a format that is easy for all stakeholders to understand and act upon. EVM provides a disciplined, structured, objective, and quantitative method to integrate technical work scope, cost, and schedule objectives into a single cohesive baseline plan called a Performance Measurement Baseline (PMB) for tracking performance. The PMB is a time-phased, resourced plan against which the accomplishment of authorized work is measured. The baseline can be used to (1) quantify and measure program/contract performance, (2) provide an early warning system for deviation from a baseline, and (3) provide a means to forecast final cost and schedule outcomes.

17.1.3. EVM will be used to track cost on Type Work categories 2-Test (MOT), 3-Test Support (CONOPS), 4-Exercise, 5-Training.

#### 17.2. Activity Based Work Breakdown Structure (WBS).

17.2.1. The 96 TW uses activity based WBS to implement EVM. A WBS serves many purposes and facilitates planning by providing a formal structure for identifying the work. Most importantly, the WBS provides a link between technical achievement and the cost/schedule information (i.e., Customer Agreement) being provided to the customer throughout the project life cycle.

17.2.2. The WBS is a test planning tool that organizes all test tasks into a program-specific set of work packages, each of which is defined with a four-character WBS code dependent upon the type of task for that work package. The WBS code is comprised of the following level definitions:

**Table 17.1. WBS Naming Convention.**

|            |  |
|------------|--|
| Level 1    | Most basic division or phase of a test program, i.e.,<br>P = plan/provision,<br>C = conduct,<br>A = analyze,<br>R = report (technical deliverable),<br>Q = \$\$ sent off-site,<br>Z = 96 TW Flight Test Missions, and<br>O = other. (The only WBS that can be set to level of effort)<br>This level is standardized by AFMC and the Wing |
| Levels 2-4 | Identifies specific types of activities occurring within each Level 2 activity. This level is specified by the PE/PM, though there are exceptions that are mandated (as in Table 17.2).  |

17.2.3. There are a few standardized WBS codes within the Wing of which a PE/PM should be mindful when determining WBS naming conventions. Standardizing the WBS naming is considered a best practice because it enables an organization to collect and compare data among projects. Standardizing work breakdown structures results in more consistent cost estimates, allows data to be shared across organizations, and leads to more efficient project execution. WBS standardization also allows a standard set of business rules for project management tools to operate within. The minimum, standardized WBS codes for each project are below.

**Table 17.2. 96TW Standardized WBS Codes.**

|                                    |  |
|------------------------------------|--|
| PS00                               | Used for the Requirements Definition phase to prepare the Customer Agreement |
| PT00                               | Used for the Planning phase to prepare the Test Directive                    |
| PVxx*                              | Used for the Planning phase to indicate a provisioning activity, if required |
| ZAxX*                              | Used to indicate flight tests where 96 TW aircraft are used, if required     |
| RFTD                               | Used to indicate the final technical deliverable of the project              |
| *where the x is the PE/PM's choice |  |

### 17.3. Activity Based WBS Management.

17.3.1. The consumer of the activity based WBS structure is the 96 TW itself but should also provide useful information for the customer. The Wing uses the cost information to predict cost behavior patterns for strategic planning and programming purposes. This method also provides the PE/PM with insight into the project execution status, cost and schedule resulting in better project management for the customer.

17.3.1.1. This method yields the ability to track actuals versus planned execution more quickly in order to implement targeted corrective action.

17.3.1.2. Another benefit of activity based WBSs is that the manager of an activity can continually identify cost control measures.

17.3.1.3. Activity cost information should allow identification of waste as well as how the project could be designed in the future to optimize performance.

17.3.2. An activity describes the “way” that time is spent on various work packages that comprise the project. This contrasts with functional cost estimation that simply tracks who spent time on the overall project.

17.3.2.1. Activity based WBSs should show interdependencies as they relate to decision making. The WBS should provide information that gives a realistic picture of the impact of a variety of decisions on current activity consumption. For example, if the required number of Customer Agreements per year is increased, it becomes feasible to extrapolate the required number of PE/PM man hours associated on a per Customer Agreement basis. Of course, some assumptions are made with such a calculation, but it does provide a more defensible argument to justify or explain resource consumption. The same should hold true for Test Directive generation, missions, and range configurations.

17.3.2.2. An activity should always have an input and an output. For example, for the PT00 WBS, the input would be TE man hours, PE/PM man hours, any required meeting support, travel time, safety man hours, etc. while the output is an approved Test Directive. Therefore, a natural relation between the inputs and output (with some assumptions) should occur over time.

#### 17.4. Terms and Meanings in Earned Value.

17.4.1. By using EVM, cost and schedule variances (deviations from what was planned) can be determined and used to analyze significant program drivers, forecast future cost and schedule performance, and construct corrective action plans to get the program back on track.

17.4.2. **Actual Duration** – The amount of time that has elapsed on the project to date.

17.4.3. **Actual Cost of Work Performed (ACWP)** - The cost actually incurred and recorded in accomplishing the work performed within a given time period (JOCAS expenses). The PE/PM compares the ACWP against the Budgeted Cost of Work Performed (BCWP) to assess whether the project should complete over or within budget.

17.4.4. **Budgeted Cost of Work Scheduled (BCWS)** - The sum of all budgets for all work scheduled to be accomplished within a given time period. This is also called the PMB.

17.4.5. **Budgeted Cost of Work Performed (BCWP)** - The sum of the budgets for completed WBS codes and completed portions of open WBS codes (PE/PM approximation of work completed). This is also known as Earned Value.

17.4.6. **Budget at Completion (BAC)** - The endpoint of the PMB or total budget allocated to any individual project, i.e., the Customer Agreement estimate. The BAC is equal to the value in the Customer Agreement, to include any Customer Agreement revisions that increase the budget. The BAC should equal the PMB (i.e., the Customer Agreement).

17.4.7. **Earned Schedule (ES)** - The amount of time that was originally planned to reach the current level of BCWP.

17.4.8. **Cost Variance (CV)** – The difference between the actual cost incurred and the planned/budgeted cost at a given time on a project. It is used to determine how best to utilize the remaining resources. A positive number is under budget. A negative number is over budget. Cost Variance % indicates how much over or under budget the project is in terms of percentage. Again, a positive percentage is under budget in terms of percentage while a negative percentage is how much over budget the project is in terms of percentage.

**Figure 17.1. Cost Variance Formulas.**

Cost Variance (CV) = BCWP – ACWP

$$CV \% = \frac{CV}{BCWP}$$

17.4.9. **Schedule Variance (SV)** - The difference between the actual time it has taken to get to a point on a project vs the planned time to get to that point on a project. A positive number is ahead of schedule. A negative number is behind schedule budget. Schedule Variance % indicates how much ahead or behind schedule, the project is in terms of percentage. Again, a positive percentage indicated ahead of schedule and a negative percentage indicates behind schedule.

**Figure 17.2. Schedule Variance Formulas.**

Schedule Variance (SV) = BCWP – BCWS

$$SV \% = \frac{SV}{BCWS}$$

17.4.10. **Rebaseline** - Rebaselining is the term used for describing a major realignment of the PMB to improve the correlation between the work plan and the baseline budget, scope, and schedule. A 96 TW project should not rebaseline without a Customer Agreement revision. Reference [paragraph 4.5](#) Changes in Test Requirements – Rebaselining for additional information.

17.4.11. **Replan** - A realignment of schedule or reallocation of budget for remaining effort within the existing cost and schedule constraints of the contract. In this case, the BCWS does not exceed the budget in the Customer Agreement, nor is the schedule adjusted to extend beyond the RFTD WBS milestone as defined in the Customer Agreement. Replanning cannot occur after 60% of the project's schedule has elapsed. Reference [paragraph 16.4](#) Replanning (Cost or Schedule) for more information.

17.4.12. **Reprogram** - A comprehensive replanning of the remaining PMB that results in a total budget and/or total schedule in excess of contractual requirements. The 96 TW does not practice reprogramming for projects. Reprogramming is usually accomplished for Weapon System Programs and approvals are given at the OSD and above levels.

**17.5. Earned Value in the Test Management Process.**

17.5.1. While BCWP begins at work acceptance and ends after close-out, project execution (i.e., ongoing project) begins after the customer signs the Customer Agreement and ends after the PE/PM sends the customer the final technical deliverable. The requirements definition phase should be the only WBS whose budgeted costs equates to the actuals and dates are actuals. This is possible because the PE/PM inputs those values after that work is accomplished. Therefore all projects can have a CPI and SPI of 1.0 on the day that the requirements definition phase completes. JOCAS accrues the actual costs of the project. One

slight difference with the JOCAS accrual system is that requirements definition and planning are the same phase to the JOCAS system. Reference [Figure 1.1](#) Test Management Framework for graphical representation of the Test Management process.

### **17.6. Earning Value (i.e., Percent Complete/Credit for Work Performed)**

17.6.1. There are various methods by which a PE/PM can calculate or assign the percent complete. The 96 TW implementation of percent complete is at the 4-level WBS. This is advantageous because it allows the PE/PM to estimate completion of several smaller activities versus one large project. Most of the methods should be subjective based on the experience level of the PE/PM, the perceived value of the activity to the overall project, and the perceived level of complexity of the activities remaining for the project.

17.6.2. A missions-productivity method of calculating percent complete is a very straight-forward and defensible means of calculating percent complete, especially for the conduct (test execution) WBS activities. The PE/PM calculates the total test activities estimated under the WBS and uses it as the denominator, with the fully productive, executed missions as the numerator. This becomes the percent complete for that specific WBS. While this method is appropriate and defensible for some mission conduct WBSs, it may not be appropriate for use on a provisional or planning WBS.

17.6.3. A value-based method may also be applicable for conduct missions as well as manpower intensive work packages. The value-based method is simply assigning value to the work that has been accomplished. This is neither a time nor cost based method of assessing work completion, but an assessment of the work accomplished against the work required.

17.6.3.1. The PE/PM assesses the importance of all the steps of the work package and records the corresponding percent complete based on acceptance of that step. For example, a conduct WBS may have 20 missions assigned.

17.6.3.2. The PE/PM considers the objective of the work of the WBS and if he is able to meet the entire objective in 5 missions, the PE/PM can assign a value of 100% complete. This, of course, should yield a cautiously favorable CPI for that WBS code. The PE/PM would simply choose the corresponding reason of compressed test points as the reason for the favorable CPI. Alternatively, if a PE/PM has a PT00 "Test Directive" WBS code, the PE/PM can reasonably assign 25% complete to the WBS once the Method of Test is drafted. This can be appropriate because the Safety appendix and TAB are left to be accomplished and the PE/PM has assigned those steps as more important as they can lead to large amounts of rework on the draft Method of Test.

17.6.4. The PE/PM judgement is used for the planning, provisioning, analysis, and reporting activities of the PMB. The PE/PM should use their experience in consultation with the judgement of functional experts of activities (aircraft mod chief, Range Engineer, TE for development of the Method of Test/CONOPS/Analysis/Report) to estimate the percent complete of the mentioned activities. Only after the work has been accepted (meaning no rework is required) should a PE/PM assign a 100% credit for the work performed.

17.6.5. When updating a percent complete, the PE/PM should be mindful of the effective date of the percent complete. If the effective date is after the most recent JOCAS consolidation's effective date, the CPI and SPI calculations should not be affected by the updated percent complete. Therefore, if a PE/PM wasn't able to record the percent complete prior to JOCAS consolidation effective date, he or she needs to back-date the effective date for the value of the work completed if their intent were to change the CPI or SPI.

### 17.7. Performance Indicators.

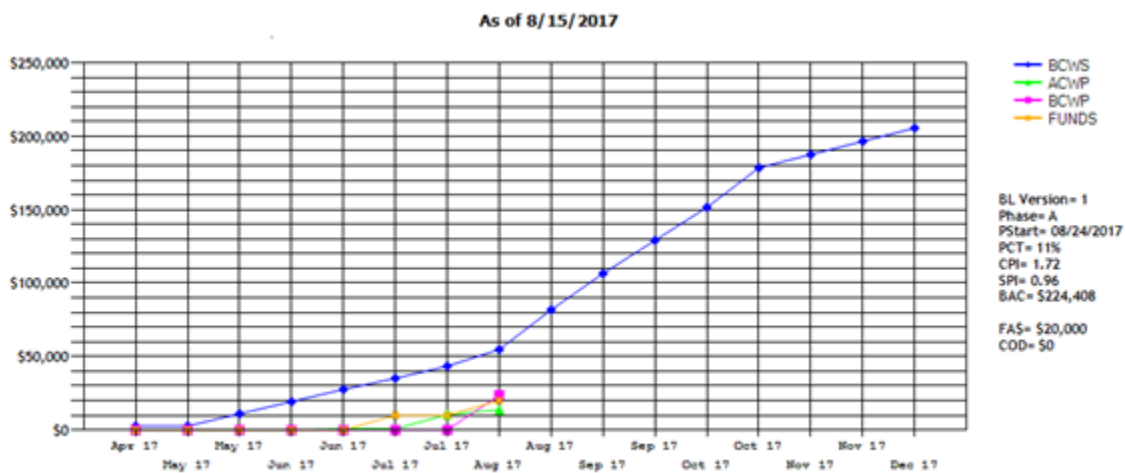
17.7.1. When the PE/PM baselines the program estimate in the EVCAS the WBS codes associated with that program are sent to CSE. The PE/PM should also ensure that the WBS and their changes are sent to JOCAS. Missions that are scheduled through CSE should contain a WBS code. Missions are conducted, and each work center then submits their respective mission or nonmission related charges by JON and WBS code into JOCAS. This link between EVCAS, CSE, and JOCAS allows automation of EVM for each baselined program. Baselining a program also creates the BCWS line on the EVM chart.

17.7.1.1. The BCWP line is created by taking credit for work accomplished (see [paragraph 17.6](#) Earning Value above) through the EVCAS (WBS percent complete). **Note:** CPI and SPI equal zero until a percent complete is recorded.

17.7.1.2. The consolidated charges collected in JOCAS become the ACWP line. The JOCAS information is automatically transferred to the EVCAS.

17.7.1.3. The performance indices are automatically calculated and displayed on screen in the EVM chart ([Figure 17.3](#)).

**Figure 17.3. Project EVM Chart.**



17.7.2. **Time-Based Schedule Performance Index (SPI[t])** - A measure of schedule efficiency at which the project has performed to date.

**Figure 17.4. Time-Based Schedule Performance Index (SPI[t]).**

$$SPI[t] = \frac{\text{Earned Schedule (ES)}}{\text{Actual Duration (AD)}}$$

17.7.3. **Earned Schedule (ES)** is the amount of time that was originally planned to take to reach the current level of BCWP.

**Figure 17.5. Earned Schedule (ES).**

$$ES = ES \text{ Date} - BL \text{ Start Date}$$

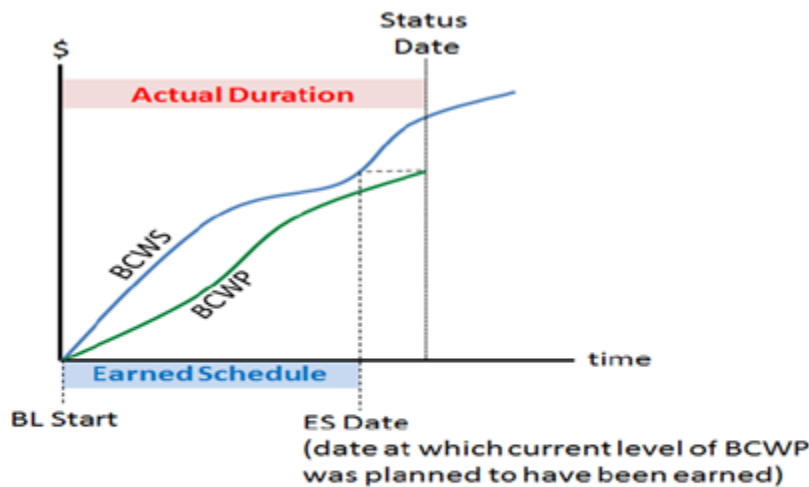
17.7.4. **Actual Duration (AD)** is the amount of time that has elapsed on the project to date.

**Figure 17.6. Actual Duration.**

$$AD = \text{Status Date} - BL \text{ Start Date}$$

17.7.5. **Figure 17.7** below diagrams how ES and AD concepts are related to SPI[t].

**Figure 17.7. EVM Chart Describing SPI[t].**



National Defense Industrial Association Integrated Program Management Division (2014, September 17). *A Guide to Managing Programs Using Predictive Measures*. Arlington: National Defense Industrial Association (NDIA).

17.7.6. **Cost Performance Index (CPI)** - A measure of cost efficiency comparing the value of work achieved for a dollar of cost. In other words, the index shows the efficiency of the utilization of the resources on the project. An index of greater than ( $\geq$ ) 1 indicates efficiency in utilizing the resources allocated to the project is good. An index less than ( $<$ ) 1 indicates the efficiency is not good.

**Figure 17.8. Cost Performance Index (CPI).**

$$CPI = \frac{BCWP}{ACWP} = \frac{\text{Earned Value (EV)}}{\text{Actual Cost (AC)}}$$

## 17.8. Interpreting Performance Indicators (CPI and SPI[t]).

17.8.1. CPI and SPI[t] are measures of efficiency that should aid a PE/PM in understanding the health of various projects quickly. For both indices, a favorable result *may* indicate that the project is “under-running” its budget or schedule. This means that, for cost, the project is spending less money than planned to accomplish a given amount of work. In other words, the project is getting more work accomplished for less dollars than budgeted. For a schedule “under run”, the project is accomplishing more work than scheduled for a given amount of time. Simply put, the project is executing faster than planned. Note that the “may” is italicized. This is because a project’s risk and execution can change real-time and CPI and SPI[t] are calculated based on historical data. Coupled with the PE/PM’s current known factors, indices are powerful tools in understanding several, even hundreds of projects’ performance quickly.

**Table 17.3. Performance Indices Interpretation.**

| CPI Value | Implication   |
|-----------|---|
| > 1.00    | <b>FAVORABLE</b><br>- The effort on average is being accomplished more efficiently than planned   |
| = 1.00    | <b>ON TRACK</b><br>- The effort on average is being accomplished at the planned efficiency        |
| < 1.00    | <b>UNFAVORABLE</b><br>- The effort on average is being accomplished less efficiently than planned |

| SPI[t] Value | Implication   |
|--------------|---|
| > 1.00       | <b>FAVORABLE</b><br>- The effort on average is being accomplished at a faster rate than planned   |
| = 1.00       | <b>ON TRACK</b><br>- The effort on average is performing to plan                                  |
| < 1.00       | <b>UNFAVORABLE</b><br>- The effort on average is being accomplished at a slower rate than planned |

(National Defense Industrial Association Integrated Program Management Division)

17.8.2. A PE/PM should be cautious when the project’s indicator becomes too favorable. Once a project’s CPI or SPI[t] becomes much greater than one, it begs the question of whether the performance is *that* efficient. For cost, this could indicate that there was a lot of management reserve in the budget. For schedule it could indicate that the priority of work accomplished is being manipulated.

17.8.3. In [Figure 17.3](#), one can see from the yellow line that the project is being incrementally funded by the customer: the initial \$10,000 in July 2017 and then an increase of \$10,000 in August 2017 for a total funds available of \$20,000. At some point the customer should inject the remaining \$204,408 into the project. The chart shows that the project is slightly behind schedule (SPI= 0.96) for the work that has been “taken credit for” but is spending significantly less (CPI= 1.72) than the work that was budgeted for or charges are late being billed to the JON. A true determination of the project risk and mitigation rests on the knowledge of the PE/PM with respect to the complexity of the work remaining, the priority of the test, and the availability of resources.

### **17.9. Breach Reasons.**

17.9.1. A project breaches when it exceeds the 96 TW-defined indices limits. Breach reasons are collected for cost and schedule.

17.9.2. When the breach reasons are collected, characterized, and analyzed, this is known as root cause analysis. The root cause analysis then becomes a powerful tool in the identification of resource limitations during tactical execution of the 96 TW missions.

17.9.3. The follow-on step from the root cause analysis is the cost-benefit analysis. The cost-benefit analysis of the root causes should indicate to a resourcing manager whether to invest in increasing the resources that are causing the breaches.

17.9.4. Those investments are typically material mitigations at the upper management levels and those solutions have higher dollars attached. Therefore, in the collection of the breach reasons, there is also opportunity for the PE/PM to provide mitigation that has been or can be performed to get the project back on track without any impact to the customer. All of this information is used in the cost benefit analysis that goes with the rollup of the breach reason analysis.

17.9.5. AFTC describes a process in AFTCI 99-100, paragraph 5.1.1. and 5.1.2. to identify breaches. While not specifically called out in AFTCI 99-100, AFTC uses the Re-baseline Reasons in AFTCI 99-100, attachment 4 to categorize the reason for these breaches. AFTC is only interested in negative breach reasons. In AFTC's briefings and reports, they refer to these breach reasons as constraints. For the 96 TW, both positive and negative breach reasons are reviewed. The purpose for capturing and reporting negative breach reasons is to identify problems or challenges across the TW or Center. The purpose for capturing positive or favorable breach reasons is to capture innovations for cost or schedule savers that can be deployed across the enterprise as appropriate. Breach Reasons are capture in TWES and used for briefings and reports described in [Chapter 22](#), Metrics and Project Management Reviews.

### **17.10. Earned Value Analysis Chart Updates.**

17.10.1. Periodically (currently bimonthly), the ACWP is automatically updated after JOCAS consolidation. PMs are responsible for sending the Earned Value Analysis chart to each of their customers, if requested.

## Chapter 18

### COMMERCIAL CUSTOMERS

#### 18.1. Confidentiality of Commercial Customers.

18.1.1. Details surrounding a test, including the facility in which a test is to be conducted, can often provide information to competitors as to the intent of the commercial entity to develop a new product, and even as to the particular capabilities of the product under test. Consequently, a potential commercial customer's mere interest in performing specific testing may be valid proprietary information, along with any subsequent test procedures and resulting data. Such data should be appropriately marked and protected.

#### 18.2. Authority and Responsibilities.

18.2.1. In accordance with 10 USC § 2681, DoD Directive 3200.11, and DoDI 3200.18, the Major Range and Test Facility Base (MRTFB) Activity Commander is authorized to enter into support contracts with commercial entities for use of MRTFB range and facility resources to conduct commercial test and evaluation activities. Per AFTC/PZ guidance, there is no legal requirement for a warranted contracting officer to execute a formal test contract and that office will no longer provide this support.

18.2.2. The approval level for agreements should be IAW the test wing and group's Delegation of Approval (DOA) letter. This formal memorandum delegates authority to Group Commanders and Directors to enter into these agreements. It also provides authority for those Group Commanders and Directors to further delegate the authority, by memorandum, to Squadron Commanders. Current DOA letters are on the 96 TW SharePoint™ Site in the *Test Process Policies* folder, <https://usaf.dps.mil/f/s/21424/Evc7HPUN-ItMqdFqPObC1awBbbmidmRrcRPzJraU06OrMw?e=DopzQB>.

18.2.3. Documents for commercial customers require additional information and coordination. This chapter highlights some of those changes from the standard document templates located on the Test Process Policies SharePoint. It is especially important to use the uniform terms and conditions clauses in the commercial document templates. Any deviation should only be done after consulting with 96 TW/XPT.

#### 18.3. Cost and Schedule Considerations.

18.3.1. If a commercial customer requests a preferential rate, the PE/PM should ascertain whether the commercial customer is working under a DoD contract with T&E services or range use allocated as "Government Furnished Services" or "Government Furnished Property."

18.3.2. If the PE/PM determines that the commercial customer is supporting a DoD contract with testing as government furnished services, the PE/PM should obtain from the commercial customer or applicable program office a copy of that portion of the executed contract that identifies testing as a government furnished service. *This is the only mechanism by which a commercial customer should receive a preferential, or DoD rate.* A copy of this contractual information is placed in the Supporting Documents folder of the Customer Agreement Livelink™ workflow in 3.17. Customer Agreement Coordination, Approval and Concurrence.

18.3.3. If the contract or applicable portions of the contract are classified, the PE/PM should obtain from the program office government contracting officer a written verification that the commercial customer is receiving support as government furnished services.

18.3.4. Once the documents are obtained, the PE/PM places them in the Livelink™ project folder and forwards them to the 96 TW/XP Workflow ([46tw.xp.workflow@us.af.mil](mailto:46tw.xp.workflow@us.af.mil)) with the subject “REQ: Commercial customer: Preferential Rate Determination.”

18.3.5. 96 TW/XP approves or denies the preferential rate and responds back to the requester with the FM Office copied. FM ensures the appropriate billing rates are used as approved by 96 TW/XP.

18.3.6. For commercial customers supporting non-DoD programs, the PE/PM obtains certification (reference 96 TW SharePoint™ site in the *Test Process Policies* folder) from the customer that no suitable commercial facilities exist, or that commercial facilities are not capable of supporting their requirements. A copy of this certification is placed in the electronic project folder in the Supporting Documents folder for the Customer Agreement Document (usually a SOC). Workflow details are described in [paragraph 3.19](#) Customer Agreement Coordination, Approval and Concurrence.

18.3.7. The PE/PM should ensure that the commercial customer has the required insurance as outlined in the standard terms and conditions with the “96th Test Wing” as the named insured. A copy of this certification should be placed in the electronic project folder with the Supporting Documents folder for the Customer Agreement Document. Workflow details are described in [paragraph 3.19](#) Customer Agreement Coordination, Approval and Concurrence.

#### **18.4. Planning Funds for Commercial Customers.**

18.4.1. The PE/PM should request sufficient planning funds commensurate with the determined rate from a commercial customer before entering into discussion beyond capability and capacity consultations.

18.4.2. Commercial planning funds memos are coordinated in Livelink™ using the 96 TW Commercial Customer Agreement/PF Workflow.

18.4.3. The PE/PM should use the commercial planning funds memo template located in the 96 TW SharePoint™ site in the *Test Process Policies* folder to ensure the commercial customer receives the legally sufficient terms and conditions.

18.4.4. A PE/PM should not accomplish any work (other than a basic ROM) for a commercial customer who has not yet supplied planning funds.

#### **18.5. Kickoff Meeting Attendance without DoD Procurement Contracts.**

18.5.1. The PE/PM should ascertain whether commercial visitors will attend the kickoff meeting or any other meetings or events held on 96 TW property.

18.5.2. The 96 TW Information Protection Office is the Office of Primary Responsibility for developing/issuing procedures, and interpreting policy for commercial visitors to the complex.

18.5.3. The PE/PM should ensure that he/she has the most current Eglin Air Force Base Access Affidavit completed for each proposed visitor. The affidavit remains valid for one year after submission.

18.5.4. If the event is classified, the commercial entity should send a Defense Information Security System (DISS) visit request to the appropriate location SMO code.

18.5.5. It is imperative that the test team make contact immediately with the 96 TW Public Affairs Office and their Security Manager as soon as a requirement for a commercial visit is known. More information about Release of Information to the Public is in [chapter 11.2.11](#).

## **18.6. Commercial Customer Agreement.**

18.6.1. The PE/PM should ensure that, in the absence of the specific test as a government furnished service within a DoD procurement contract, the commercial customer receives the commercial rate and program priority of 3B.

18.6.2. The PE/PM should account for the indirect and direct costs when developing the cost estimate as appropriate by the rate determination.

18.6.3. The PE/PM should ensure that all 96 TW standard terms and conditions are incorporated into the draft commercial Customer Agreement template.

18.6.4. The PE/PM should ensure that the commercial customer has provided, for inclusion in the Customer Agreement, an address to where any refunds of monies are to be sent. This should be accomplished for each Customer Agreement and revision.

18.6.5. In cases where the standard terms and conditions are not applicable or inappropriate, seek approval from 96 TW/XP Office Chief (or its designated representative) to amend or delete the language, as applicable.

18.6.6. The commercial Customer Agreement template with the standard terms and conditions is located in the 96 TW SharePoint™ site in the *Test Process Policies* folder.

18.6.7. If the PE/PM is initiating a commercial Customer Agreement, the PE/PM should include the validated certification letter and the insurance certificate in the Supporting Documents folder of the Attachments in the Livelink™ workflow.

## **18.7. Disputes.**

18.7.1. Disputes between the commercial customer and the 96 TW may occur. The first point of reference for a dispute is the Customer Agreement. This is why rigor is put into the review, coordination, and approval of the Customer Agreement. The commercial Customer Agreement should be as specific and clear as possible with respect to each party's responsibilities based upon the known work at the time of draft.

18.7.2. When the commercial entity first notifies the PE/PM of a dispute in writing, the PE/PM should work with his TEO Commander/Director(s) to gather the accurate and complete facts surrounding the test and the dispute and attempt to formulate a fair resolution agreement with the customer with respect to the dispute.

18.7.2.1. The PE/PM and the TEO Commander/Director(s) should follow 96 TW Financial Management policy when developing a fair resolution agreement with the commercial entity.

18.7.3. The PE/PM should present the proposed agreement to the commercial customer in writing. Email is the preferred method of communication. There is no mandated template for this agreement.

18.7.3.1. If the commercial entity accepts the agreement, the PE/PM should file the agreement and commercial customer's response in the Livelink™ project folder, execute the agreement and continue with the project according to the Customer Agreement and Test Directive as written.

18.7.3.2. If the PE/PM, TEO Commander/Director(s), and commercial entity cannot arrive at an acceptable agreement, the PE/PM with coordination of the TEO Commander/Director will escalate the dispute to the 96 TW/XP Office Chief.

18.7.3.2.1. The PE/PM should draft an informational package that contains the following: the executed Customer Agreement and any revisions along with the Test Directive and any amendments; the complete written commercial entity's dispute; the complete, accurate, and sequential facts surrounding the test and the dispute; the initial proposed resolution; and the commercial entity's response.

18.7.3.2.2. The PE/PM should file the complete and accurate informational package in the Livelink™ project folder and forward to the 96 TW/XP Workflow ([46tw.xp.workflow@us.af.mil](mailto:46tw.xp.workflow@us.af.mil)) with the subject "URGENT\_DISPUTE RESOLUTION: Commercial Test Customer."

18.7.3.2.3. The PE/PM should respond to any additional requests for information from 96 TW/XP, providing additional detail for the 96 TW/XP Office Chief.

18.7.3.2.4. The 96 TW/XP Office Chief should decide the dispute in accordance with the terms and conditions in the commercial Customer Agreement.

## Chapter 19

### FOREIGN MILITARY SALES (FMS) CUSTOMERS

#### 19.1. Billing Rate Determination.

19.1.1. Determination of FMS Billing Rates is based on DoDI5000.89\_DAFI99-103, paragraph. 3.8., Foreign Military Sales T&E. Government-to-government agreements should specify any tailored FMS implementation, including those associated with reimbursable expenses.

19.1.1.1. The term “Favored Nation” or “Most Favored Nation” is no longer applicable. The United States now uses the concept of Normal Trade Relations (NTR) which virtually includes all countries except those the US have singled out for bad behavior. NTR confers no special privileges. The only way for an FMS customer to get a special rate is to negotiate for it in their contract with the US.

19.1.2. The customer will be billed at FMS rates unless preferential rates are requested and approved for the JON. At JON creation, standard FMS rates will be applied until preferential rates are approved.

19.1.3. PE/PM must apply for preferential FMS rates.

#### 19.2. Applying for Preferential FMS Rates.

19.2.1. PE/PM should request from the customer all FMS agreements and documentation associated with and supporting the use of preferential rates for the project/JON. Those documents will be reviewed and support the TW decision to adjust the standard FMS rate to a preferred rate.

19.2.1.1. Potential support documents include: The LOA page and paragraph which expands on the information of the funding status/source; SAMM: Security Assistance Management Manual, the Defense Security Cooperation Agency (DSCA) FMS Policy and Guidance with the DoD Appropriation authority the funds fall under.

19.2.2. The PE/PM provides the supporting documents and any other pertinent information to 96 TW/XP Workflow ([46tw.xp.workflow@us.af.mil](mailto:46tw.xp.workflow@us.af.mil)) with the subject “REQ: FMS Customer: Preferential Rate Request”

19.2.3. 96TW/XPT reviews and coordinates with 96 TW/FM to determine the appropriate rate. 96 TW/XP responds back to the PE/PM with the approved billing rate, copying 96TW/FM and the appropriate Group FM Office. 96TW/FM ensures the appropriate billing rates are used on the customer’s JON. PE/PM should also confirm the rate change.

19.2.4. The approval email from 96 TW/XP, along with all supporting documentation, is placed in the Livelink™ electronic project folder.

### 19.3. Foreign National Participation in 96 TW FMS Tests.

19.3.1. The PE/PM (or government representative for Contractor PE/PM), upon becoming aware of a foreign country's request to participate in 96 TW FMS testing at Eglin, contacts 96 TW/IPF Foreign Disclosure Office (FDO). The 96 TW/IPF FDO is the Office of Primary Responsibility (OPR) for clearing foreign nationals on base (**Note:** the FDO only works with civilians, not contractors, during the base access approval process).

19.3.2. A foreign representative who wishes to visit the 96 TW will submit a request through their country's embassy in Washington D.C. The embassy will pass the request to the Office of International Affairs that then passes the request to 96 TW/IPF FDO via the Foreign Visit System. 96 TW/IPF FDO then sends a proposed foreign visit letter to the 96 TW OPR to review the visit request (in most cases the OPR is the PE/PM for the FMS test). The OPR will return the letter to 96 TW/IPF FDO stating whether or not approval of the visit request is recommended and if approved, the level of classification of US information that may be discussed.

19.3.3. Once 96 TW/IPF FDO has reviewed the recommendation for approval letter, they send a visit authorization letter to the OPR granting the foreign representatives access to the base stating the OPR responsibilities and disclosure/release guidance for discussions with the foreign representatives. Disclosures and releases should not be made prior to receiving the visit authorization letter from the 96 TW/IPF FDO. Military discussions should also not be held until receipt of this letter.

19.3.4. The PE/PM then contacts the System Program Office (SPO) FDO for approval to release defense technical data and defense services to the foreign representatives participating in the 96 TW FMS test (**Note:** the cognizant FDO may not be located at Eglin). The PE/PM may be required to submit a Form 458 to the FDO requesting disclosure/release approval for US defense technical data while describing the nature of the test and requesting approval of the briefing materials. The FDO interprets country-specific policy for disclosure and then provides release approval to the PE/PM via email with a specific FDO release number. FDO approval is required prior to oral, visual, or documentary release of classified and unclassified defense technical data to foreign nationals. Publicly releasable information is exempt from FDO release approval.

19.3.5. Advisory and Assistance Services (A&AS) contractors are often involved in executing FMS testing at the 96 TW. The Prime Contractor Empowered Official (EO) grants the A&AS contractors "export approval" when the 96 TW requests them to make exports to foreigners during testing. The EO's export approval (either an exemption, license, TAA, or export memo) allows the A&AS contractors to export defense technical data and defense services to foreign nationals. The EO's export approval also covers applicable Sub Contractors. The EO and the Trade Control Attorney for the Prime Contractor ensure all export approvals comply with ITAR. EO approval is required prior to A&AS contractor oral, visual, or documentary export of classified and unclassified defense technical data to foreign nationals participating in 96 TW tests. The PE/PM may be asked to provide the EO's representative the FMS case ID and the funding line information from the LOA to facilitate the EO's export approval process. In some cases, the EO may request follow-up information from the SPO prior to approving exports.

#### **19.4. Consider Foreign Military Sales Costs and Schedule Impacts.**

19.4.1. The PE/PM ensures that FMS test is billed at the FMS rates as it is funded by the foreign country or international organization. FMS customers on cases financed with national funds or such funds mixed with US government financing will continue to pay US military salaries and entitlements. The PE/PM should account for the indirect and direct costs when developing the cost estimate as appropriate by the rate determination. It is the responsibility of the PE/PM to know the current FY Eglin Acceleration Rates/TW Indirect/Overhead Rates as they are subject to change. (**Note:** These rates can be found on the JOCAS Report Web page > Miscellaneous> Acceleration/Indirect/Overhead Rates.) Specific range test resource FMS rates, to include aircraft, are located in TPT under EVCAS Resource Rate inquiry.

19.4.2. The PE/PM should ensure that the FMS test receives a 3A program priority within the 96 TW.

#### **19.5. Foreign Comparative Testing - Costs and Schedule Impacts.**

19.5.1. The FCT Program was established to test and evaluate foreign non-developmental equipment that demonstrates potential to satisfy sponsor requirements. FCT is proposed and conducted by the appropriate service on non-developmental systems of equipment that have been identified by the operational forces as having a good potential to satisfy a valid DoD requirement.

19.5.2. The OSD Comparative Testing Office (CTO) provides direction to and administers the FCT Program. FCT is a combination of two previous test categories called Foreign Weapons Evaluation and North Atlantic Treaty Organization (NATO) Comparative Tests. Unlike FMS, these tests evaluate foreign-developed items for potential use in US inventory.

19.5.3. The PE/PM ensures that Foreign Comparative Tests (FCT) are conducted at the DoD rates. This is because these tests are funded by OSD.

19.5.4. The PE/PM should ensure that the FCT test receives a 3A program priority within the 96 TW.

#### **19.6. Considerations for Drafting Customer Agreement.**

19.6.1. The Customer Agreements for Foreign Military Sales is a Price and Availability (P&A) and Letter of Offer and Acceptance.

19.6.1.1. The PE/PM should use the cost and schedule estimate as the basis for the P&A for FMS customers.

19.6.1.2. The P&A is a FMS Customer Agreement and is prepared by DoD components in response to a foreign government request for preliminary data for the possible purchase of a defense article or service. P&A data show projected availabilities and estimated costs for defense articles and services. P&A data should be detailed and accurate. Furnishing this data does not constitute a commitment for the US Government to offer for sale the articles and services for which the data are provided.

19.6.1.3. P&A estimates are used to prepare the Letter of Offer and Acceptance by Air Force Security Assistance Center for the sale of military articles and services to a foreign government.

19.6.1.4. The Letter of Offer and Acceptance lists the items and/or services, estimated costs, and terms and conditions of the sale, and provides for the foreign government's signature to indicate acceptance.

19.6.1.5. Each Letter of Offer and Acceptance is commonly referred to as a case and is assigned a case identifier for accounting purposes.

19.6.1.6. The signed Letter of Offer and Acceptance becomes a formal contract between the US Government and the foreign government or international organization.

#### 19.6.2. Foreign Comparative Testing Customer Agreement.

19.6.2.1. For the Air Force, potential programs are submitted by the sponsoring organization (normally a System Program Office) to the Office of the Undersecretary of the Air Force for International Affairs, Armament Cooperation Division (SAF/IAPQ).

19.6.2.2. Once the FCT is approved, the sponsoring organization should designate an LDTO to conduct the appropriate T&E. **Note:** A Planning Funds Letter is not required if the LOA has defined the scope of the effort, as funds have been committed. From this point, funding, execution, documentation, and reporting requirements are the same as for any other DoD test.

19.6.2.3. The PE/PM should prepare a Customer Agreement the same as for a DoD customer.

## Chapter 20

### SCIENTIFIC TEST AND ANALYSIS TECHNIQUES (STAT)

#### 20.1. STAT Overview.

20.1.1. This chapter seeks to improve the practice of test science in the 96th Test Wing: implements higher headquarters policy & guidance and defines scientific test design business processes for the 96th Test Wing. This chapter outlines a generalized philosophy -- a codified set of principles for test design; a standardized approach for assessing test design needs and appropriate classes of techniques. It introduces the STAT Practitioner (or Operations Analyst) – a trained and experienced worker competent to design and analyze test projects. It describes the minimum criteria for a scientifically designed and defensible test.

20.1.2. The PE/PM should identify a STAT practitioner; the TE should include the STAT practitioner in early planning to identify the focus for STAT support and help identify and justify test resources for test events that should be planned using STAT as a basis; the TE should ensure the STAT practitioner is involved with integrated test team meetings that address development of or revisions to the TEMP and Developmental Evaluation Framework as applicable (and during all phases of the test project to include planning, execution, analysis, and reporting IAW DoDI5000.89\_DAFI99-103, paragraph. 3.4. b. (6)).

20.1.3. Purpose. STAT should improve rigor, objectivity, repeatability, effectiveness, efficiency, defensibility, standardization, and documentation in test. The assigned STAT practitioner (or Operations Analyst) can be relied on to facilitate the decomposition of each test project, team with the TE, experts, aircrew, operators and collaboratively build a design coupled to the risks of missing performance defects, and propose analysis techniques that should assist us in linking performance to causal conditions. The goal of test science in the 96 TW is to complement our unquestioned excellence and depth of understanding in the “science of systems” with an equally rigorous “science of test.”

#### 20.2. Policy and Guidance.

20.2.1. DoDI 5000.02T requires that developmental test planning “*use scientific test and analysis techniques to design an effective and efficient test program.*” The Defense Acquisition Guidebook repeats and expands this intent: it adds the objective “*to yield defensible test results,*” it calls for early inclusion in test planning, it gives example techniques for different test goals, and requires follow-through on test planning in “*analysis of test data and reporting of test results.*” The DOT&E TEMP Guidebook gives guidance and examples of how to include evidence of scientific planning in TEMPs, with emphasis mostly on statistically-based test designs (namely Design of Experiments [DOE]).

20.2.2. DoDI5000.89\_DAFI99-103, paragraph. 3.4. b. (6) (a) directs Program ITTs to “consult a [STAT] practitioner...whenever test designs are considered” and adds requirements to “identify the analysis technique(s) to be used,” “identify the test points required and justify *their placement,*” and to estimate “*the expected decision risk remaining after test completion.*” These documents reinforce AFTC’s 12 August 2015 policy letter which requires all test plans to address:

20.2.2.1. Objectives, key test conditions, and measures of system performance;

20.2.2.2. The number and justification of selected test points;

20.2.2.3. Test point selection method/algorithm and criteria for maximizing information collected;

20.2.2.4. Analysis used to draw conclusions and a justification if statistical analyses are not used; and

20.2.2.5. Statistical or coverage measures of merit that “grade” the design quality and remaining risk.

### 20.2.3. Caveats/Exemptions.

20.2.3.1. Non-Experiments. Where test activities are clearly not experimentation (or the Test Wing is not responsible for designing an experiment), the impact of design work should be minimal and documentation short and direct. Demonstration events are test activities that are not experimentation.

20.2.3.2. Legacy Approaches. Providing evidence of scientific design is a growing requirement; many test programs are in progress when STAT or DOE are formally considered and years of optimizing test processes (using experience gained from successive testing) may have already improved the effectiveness and efficiency of test designs to a significant degree.

20.2.3.3. New Approaches. Test Design as a managed activity is an emerging capability; many techniques are still being researched and understood for their utility in test planning, especially for software-intensive systems where traditional methods only partially address test design risk. Ad hoc, invented, or industry-approved test design approaches with qualitative estimates of risk and goodness are acceptable when appropriate.

## 20.3. Design Science and the Test Process.

20.3.1. Overview. It is Test Wing philosophy that a science of test is universally applicable to experimentation, that it is a professional discipline applied by experts, that scientific experiments are methodically engineered to support an analysis and test decision, and that design science continues in all test phases to leverage sequential learning and maximize system knowledge.

20.3.1.1. The first operating principle of test design science is universal applicability: test design decisions potentially lead to incomplete or incorrect knowledge of system quality. Therefore, test design requires a deliberate, methodical, scientifically-based approach. Test programs exist to inform good decisions: poorly designed or under budgeted tests may fail to provide enough relevant data, leading to poor decisions.

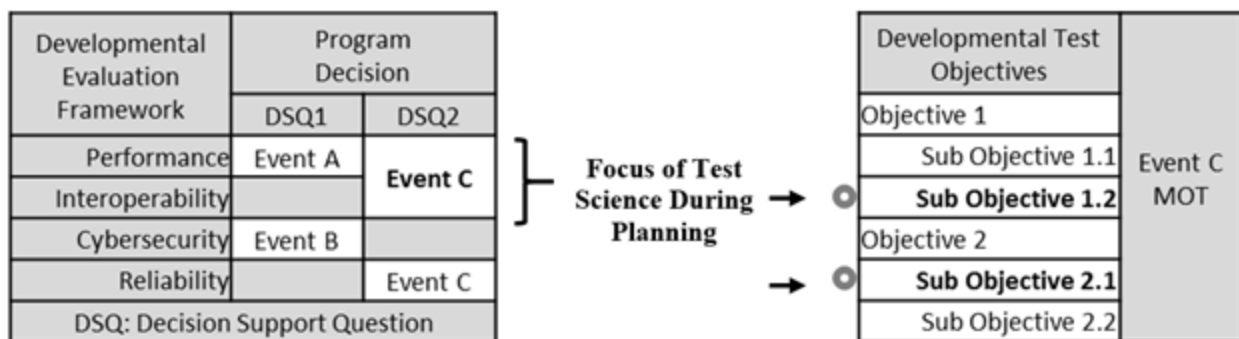
20.3.1.2. A second operating principle of test design science is trained and experienced design engineering: test design is an established and skilled discipline, and scientific design does not emerge through system familiarity or general experience with test – the science of test is a discipline that applies expertise in statistical engineering of experiments and other related operational sciences.

20.3.1.3. A third principle is that collections of test points – designs – are always constructed with one or more analysis methods in mind. Statistical designs may be built for Analysis of Variance (ANOVA) or regression, while combinatoric designs may contemplate collecting cases exhibiting design flaws. Therefore, design descriptions should be accompanied by statements of the intended analysis technique(s).

20.3.1.4. A fourth principle is phased and sequential testing. Early test activities focus on computer simulation models for a new system. As the system matures, one proceeds through brass board integration, hardware-in-the-loop testing and installed facility testing. Early tests rely heavily on simulation and modeling capabilities and are used to correct design defects and mature the system before proceeding to the final test phase. Final testing is open-air testing with actual hardware. Since open-air testing is the most expensive type, this test philosophy minimizes cost and risk by using modeling and simulation, and scientific test and analysis techniques (STAT) whenever possible.

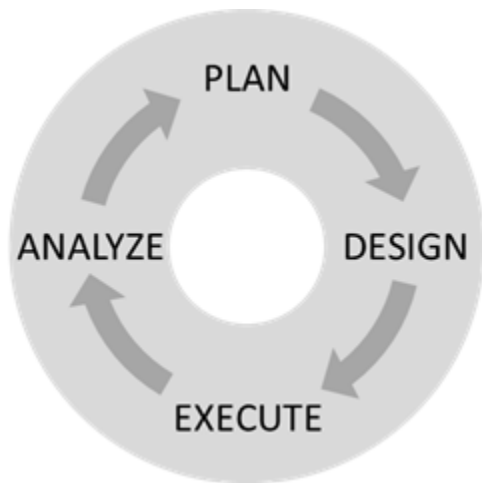
20.3.1.5. The strategy for test design science is to use scientific design techniques that maximize design objectives while controlling design risk. When the design is executed, the analysis should provide defensible conclusions that answer test objectives efficiently and effectively. A *strategic* test design campaign should be constructed for an acquisition program. Such a strategic campaign could entail examining the key program decisions concerning system capabilities in a TEMP Developmental Evaluation Framework - identifying specific test events as critical for test design science. A test design campaign should also be understood *tactically* within a series of test events such as reliability, sortie generation, combat escort, or other military roles. Such a tactical campaign might require identifying several test objectives as critical for a scientifically designed experiment within one Method of Test. At both levels (TEMP and Method of Test – illustrated in [Figure 20.1](#)), it is possible to identify multiple test design efforts and multiple test design approaches per event.

**Figure 20.1. Strategic and Tactical Test Design Campaigns in TEMP and Method of Test.**



20.3.1.6. For clarity, this section describes a test design process focused on a single test objective, possibly broken up over several collection events in a sequentially designed series of experiments that support one analysis. For each test objective, a test design effort typically iterates through these four steps in [Figure 20.2](#).

**Figure 20.2. Iterative Test Design Process (single test objective).**



20.3.1.6.1. Planning – Test designers analyze test problems, assess the risk of poor conclusions due to test design, develop objectives for test designs, and identify measures of design quality.

20.3.1.6.2. Design – Test designers evaluate and select appropriate techniques to generate candidate designs for comparison with design metrics and select a design with an acceptable level of risk.

20.3.1.6.3. Execution – Test designers ensure test designs are executable and manage risks to test results that are related to test execution.

20.3.1.6.4. Analysis – Test designers planned an analysis that satisfies test objectives and designed tests to support the intended analysis and analyze the data the way the design intended.

### 20.3.2. Test Planning.

20.3.2.1. Test planning involves considering test questions, developing test objectives, and laying out a process for generating data. Planning test designs begin at the same time as these activities. During early test planning, test design experts should perform a decomposition of the test problem for key test objectives. A test decomposition is an analysis of the test problem from a test design perspective. It may be necessary to perform multiple test decompositions to address different test objectives. At a minimum, decomposing a test design problem should include:

20.3.2.1.1. Design Point Definition. Describe (for key test objectives) a data result that comprises a unique, countable, repeatable design point in the context of the data collection process.

20.3.2.1.2. Design Space Parameters. Consider all the conditions that could be varied to fully test the functional or performance capability addressed by the test objective in the context of intended or possible uses and environments.

20.3.2.1.3. Analysis Method. Explain how collected data should be analyzed and used to evaluate test objectives in the context of Test Design and test objective success criteria.

20.3.2.1.4. Risk Assessment. Identify probable ways a collection event might generate data that leads to incorrect or unsuccessful evaluation of test objectives, related to the design of test.

20.3.2.2. As test planning continues, test design experts should use the above test decomposition to quantify the intent/risk attributes of test design as measures of Design Risk mitigation and Design Objective achievement. Design Metrics should be useful for comparing design techniques, setting design goals, weighing design alternatives, and justifying test resources.

20.3.2.2.1. Design Risks. Useful measures of risk should link design decisions to incorrect or unsuccessful evaluation of test objectives, in the context of an incorrect or inadequate evaluation of true system quality.

20.3.2.2.2. Design Objectives. Test Design Objectives should describe the attributes of a hypothetical test design that make it effective for evaluating test objectives, and/or mitigating design risk; they should include quantitative measures that address design effectiveness and efficiency, and goals for the final test design.

20.3.2.3. The result of applying design science in test planning should be a clear understanding of how test design decisions impact the quality of test results and a clear linkage between objectives for test-case selection and measures for comparing test designs. Test problems should be reduced to fit resources, but reductions should not readily give up important knowledge without understanding the risk.

20.3.2.4. The formality of this process is usually driven by the clarity of test design risks. A clear case of a stochastic, physics-based process may result in a stream-lined test problem decomposition that can be accomplished verbally and documented briefly allowing analysts to proceed immediately with the design of a statistically-based experiment. Whether formal or informal, an analysis of design risk (as part of a test decomposition) is a necessary step to ensure the design technique addresses the correct design problem.

### 20.3.3. Test Design.

20.3.3.1. Test design involves selecting techniques, generating designs, and comparing alternatives. Established design techniques have implicit design objectives, and one or several existing techniques should usually be consistent with the design intent, should match design objectives, and should improve design metrics.

20.3.3.2. Tools that aid or automate design generation are not replacements for subject matter expertise, system experience, or analytic thought, and designs are not assessed without tailoring. There are already test concepts that treat the process of collecting data to answer test questions; test questions are answered by developing test objectives which are answered through data collected according to a test methodology. These concepts have analogous ideas that have to be understood and defined in the context of test design science; test design requires clear terminology that facilitates scientific approach. The concepts below assume: 1) a test question that informs an important decision, 2) a clearly-stated test objective that addresses the test question, and 3) a well-defined test process that generates data relevant to the test objective. The process of generating and considering designs is informed with the following concepts.

20.3.3.2.1. A team effort following planning -- informed by subject, system, and operational experts. Techniques are templates for case-selection that require information on the parameters for a relevant, executable, sensible design. The process of generating designs should include vetting of design alternatives with experts that can evaluate designs in practical areas not covered by design objectives.

20.3.3.2.2. Test designs are naturally iterative -- refined within the trade-space of objectives and constraints. If a test design would produce irrelevant data, suggest impossible cases, introduce inefficiencies, or overlook proven rationale, then there may be a better balance among design objectives, or additional design objectives or design risks that were not considered, or design limitations that still need to be applied. The selection method should be modified to generate better alternatives.

20.3.3.2.3. Data collection is always associated with a test condition; in the context of test design, a Test Design Point is a unique set of test conditions for which the test process can be executed or observed to generate data. 'Test Design Point' is synonymous with test case, design case, test point, test condition, etc. Every Test Design Point not limited-out by relevance, materials, facilities, physics, and safety, etc., is a candidate for execution. The set of all candidate Test Design Points is called the Test Design Space.

20.3.3.2.4. A Test Design Space is the set of all feasible, relevant Test Design Points that would contribute data useful for answering a test objective, independent of other data. This does not necessarily include every possible test case if some uses of the system do not address the objective of interest. This does not exclude test cases that may be limited-out due to scoping to fit a budget. If a condition is relevant and could feasibly be tested (prior to applying resource constraints), then it is within the trade-space of candidate design points.

20.3.3.2.5. A test case Selection Algorithm (i.e., design technique) should be based on a comparison of test design objectives to the test case selection heuristic inherent to each technique being considered; a selection method that improves design metrics is applicable to the test problem, and a valid candidate. Candidate techniques should be applied to generate designs for comparison across design metrics.

20.3.3.2.6. The test design process involves deciding which candidate test points should be executed. The fundamental Test Design Decisions that are relevant to every test are: how many and which points should be tested (or repeated), and how data collection should be ordered. A test set (sized to resources, selected for test, and ordered for execution) is the Test Design.

20.3.3.2.7. The general method for designing tests scientifically requires that Test Design Decisions be linked to a chance of failing to adequately or accurately answer objectives; this is called Test Design Risk. Test Design Risk is a statement of how data collection may misinform objectives and should be represented by a measurable quantity related to Test Design. This requires an assessment of test-design-process failure modes, or ways a test could fail to answer objectives -- due to design. There can be multiple failure modes for a test design and execution process, and many measures that address aspects of Test Design Risk.

20.3.3.2.8. Just as test objectives address uncertainty about system function and performance, Test Design Objectives address uncertainty about Test Design and Test Design Risk. Test Design Objectives are goals for selecting design points that efficiently and effectively answer test objectives while mitigating design risk; design objectives should be measurable. Test Design Techniques are procedures that optimize achievement of design objectives. Applying a design technique to maximize achievement of design objectives while minimizing measures of design risk is the test design process.

20.3.3.2.9. A technique may be applied to generate many designs; emphasis can be shifted among design objectives, resource assumptions can be varied, and cyclic application can improve resulting designs. The strategy in generation is Design for Analysis; this is achieved through the risk and objective metrics which were developed in the context of supporting the analysis that should answer test objectives. The goal should be to produce the best design alternatives for comparison (across techniques). In practice, design is a continuation of methodology development since applying techniques usually reveals opportunities for further improvement.

20.3.3.3. Summarizing the general methodology using test design language: scientific test design is the process of reducing a Test Design Space to an executable Test Design by applying Test Design Techniques that minimize Test Design Risk while maximizing Test Design Objectives. For this chapter, and during test design discussions – objectives, techniques, and risk should always be understood in the context of test design. Selecting appropriate techniques depends on the nature of risk and how risk and objectives are measured; there are general classes of techniques that are all associated with different understanding of risk and design objectives.

20.3.3.4. Design techniques can be classified generally by the basis for case selection (and the risk addressed). These classes do not collectively cover every test design method, and are not mutually exclusive.

**Table 20.1. Categories of Test Designs.**

| Types of Risk | Selection Algorithms | Analysis Goal                                     | Example Techniques  |
|---------------|----------------------|---|---------------------|
| Stochastic    | Statistical          | Predict/model results and explain variance        | Regression Modeling |
| Deterministic | Combinatorial        | Cover combinations of uses, inputs, architectures | Factor Covering     |
| Probabilistic | Optimization         | Maximize/minimize mathematical design metrics     | Math Programming    |
| Qualitative   | Risk-based           | Prioritize test cases by indications of risk      | Decision Modeling   |

20.3.3.4.1. Statistical Design. Statistically designed experiments follow the principles, processes, and techniques of DOE. Statistical design is appropriate when there is random variability in the outcome of the test process that would confuse the results. Techniques are generally applied to support a statistical model that explains the effect of control-factors on the outcome.

20.3.3.4.2. Combinatorial Design. Combinatorial design is typically associated with non-statistical test processes and predominantly categorical variables. Combinatorial design is appropriate when there is a chance system failures could go undetected in test because the conditions (that would result in a fault) are difficult to predict and too numerous to test exhaustively. Techniques support quick identification of combinations of inputs/ configurations/selections that generate system failures.

20.3.3.4.3. Optimized Design. This category captures other mathematically-based test designs that don't fall into one (or 'only one') of the other categories. Objective functions on the test set are designed such that they can be optimized algorithmically using any of a wide range of techniques from operations research, or simple search/row-swapping heuristics. Sometimes these approaches are a hybridization of multiple categories from above so techniques are varied and usually tailored to meet very specific objectives for maximizing the achievement of (math-based) test design objectives. Some cases of invented objective-based designs result in the development of new techniques.

20.3.3.4.4. Risk-Based Design. Quality/Risk-based designs employ qualitative objectives to rank test cases. Qualitative design objectives are appropriate when historical, operational, or subjective indicators are reliable for predicting failures. Techniques have to do with organizing, quantifying, and weighting qualitative indicators that a test case has greater utility for test.

20.3.3.4.5. Ad-Hoc Test Design. Ad-hoc design applies subject matter expertise or techniques-only (not comprehensive test design methodologies) to design tests or to dynamically design-and-execute simultaneously. Ad-hoc design is appropriate when no existing methodology applies, when test is exploratory in nature (part of test is discovering the test design space), or the simplicity of the test objectives make the best design approach obvious without methodical scrutiny.

20.3.3.4.6. Space Filling Design. Space filling design is applicable to situations where factors are nominal and system errors tend to be locally clustered in limited areas of the test space. These designs are particularly useful when the test space is sufficiently vast as to be difficult to blanket. Space filling designs, such as the Latin Hypercube, efficiently disperse test points across the entire test space and reduce the risk of failing to identify highly localized clusters of system faults. These designs are often useful in tests of computer based systems. Space filling designs should be used with care since, while they span the space thoroughly, the uniform distribution of points leads to relatively poor statistical power for the number of points used, and severe challenges to prediction-modeling of interactions among the test conditions. In such cases, adding 10% more points to augment a space filling design with an optimal or factorial-based design may be helpful.

20.3.3.5. There are other techniques besides those above (such as the science of developing surveys), and there are test challenges that do not lend themselves conveniently to any known technique or even to a factor/level decomposition of the test design space. Techniques and measures of test design risk and goodness should be tailored and sometimes invented to apply specifically to each test challenge.

20.3.3.6. The design step should result in one or several candidate test designs for key test objectives with an auditable justification for the size of the test design and selection of test cases, and with metrics that quantify the effectiveness of the design and remaining risk to the test decision. Test teams should review these refined designs across all relevant qualities and select designs to include in the test plan.

#### 20.3.4. Test Execution.

20.3.4.1. Final design refinements should focus on execution-related design risk and sequential learning and Design for Execution. The process is the same as iterative design refinement, but modifications should address ordering test cases for execution within events, dividing design points across multiple events (if necessary), and planning collections to allow a pause for analysis and learning between events.

20.3.4.2. Designing for execution does not mean sanity checking the design against test reality; an informed design generation process should reveal factors that render a design un-executable. Designing a test for execution means:

20.3.4.2.1. Understanding how execution choices impact design risk. The test decomposition should also consider design risks related to execution order, and include design objectives that use ordering of test points to mitigate risk.

20.3.4.2.2. Understanding how execution impacts learning efficiency. During execution, it may be beneficial to re-design future events based on results from earlier events; having a strategy that allows time for analysis and opportunities to adjust future events renders the learning process more efficient and has the potential to eliminate useless collection that reinforces knowledge already gathered.

20.3.5. Test Analysis. Test design science approaches test case selection with the analysis in mind, therefore the analysis should be determined before collection events. Selecting an analysis technique is implicit in the test decomposition process and is closely coupled to the selection of a design technique. Choosing and applying an analysis approach should also be performed by an expert in the design and analysis of experiments.

20.3.5.1. Classes of Analysis Techniques. Just as there is a rich 100-year history of design solutions to the many challenges offered in test design, there have been equal or greater strides made in single and multivariate analysis. The table below is a representative example of just a few of the many analysis methods that may be brought to bear on the data resulting from a designed experiment. As previously mentioned, the STAT practitioner should have anticipated and selected the appropriate analysis techniques based on the test problem and the design(s) chosen by the test team.

**Table 20.2. Representative Selection of Analysis Techniques.**

|  |                           | Types of Y - Responses (MOPs) |                                |                                    |
|--|---------------------------|-------------------------------|--------------------------------|------------------------------------|
|  |                           | Normal                        | Not Normal                     | Binary                             |
| Types of Test X's - Conditions (Factors) | None - Single Sample Test | One sample t-test             | Data Transformation            | One sample test of proportions     |
|  | Multiple Categorical      | ANOVA                         | Generalized Linear Model       | Logistic regression                |
|  | Multiple Continuous       | Multiple Regression           | Generalized Linear Model       | GLZ Link = Probit                  |
|  | Fixed and Random factors  | Linear Mixed Model            | Generalized Linear Mixed Model | Logistic Regression w/ Mixed Model |

20.3.5.2. The analysis technique should be appropriate for the test objective and decision at hand, and should be congruent with the same sophistication required to engineer the test and collect data. At a minimum, the analysis approach should answer the test objectives, and address any uncertainty in the accuracy or completeness of results. If a test is well designed, the analysis should be straightforward.

## Chapter 21

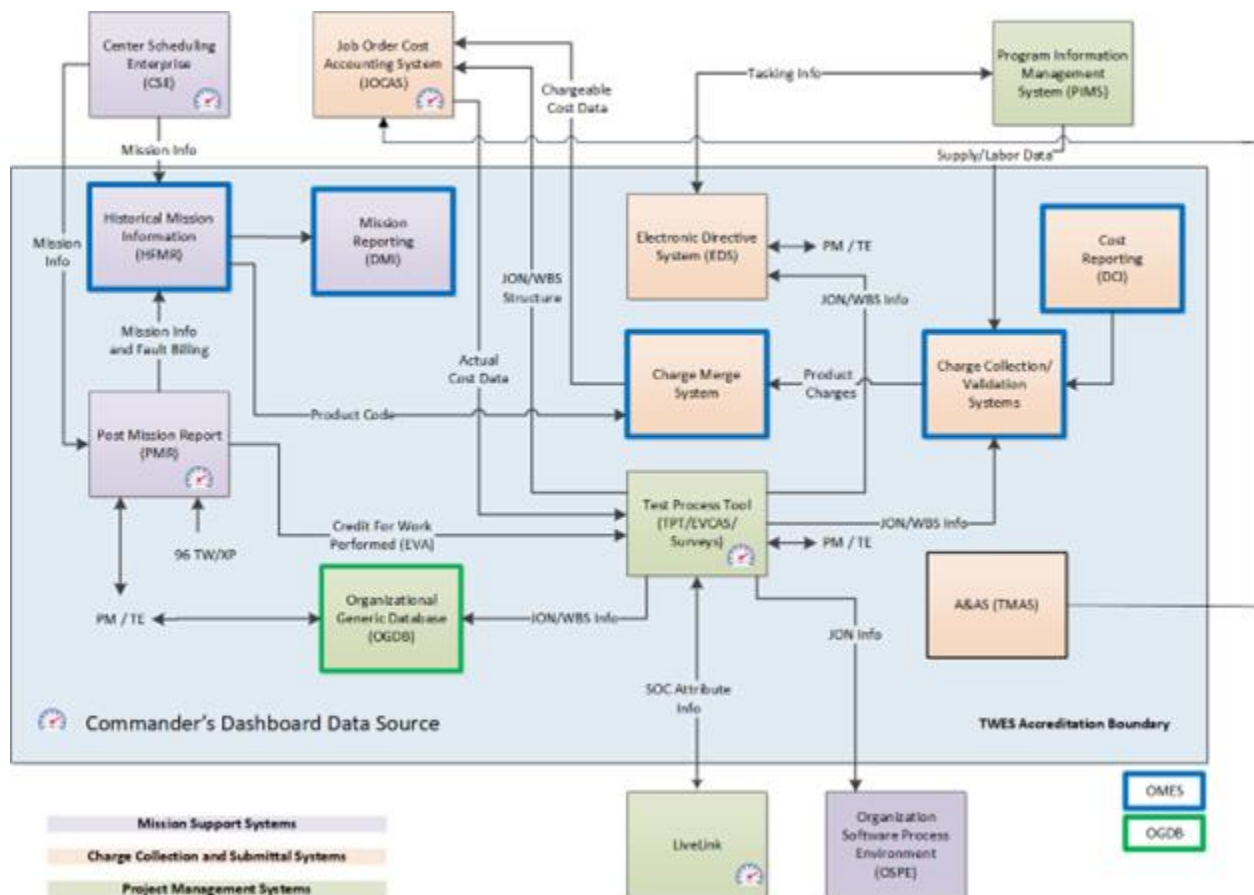
### PROGRAM MANAGEMENT TOOLS

#### 21.1. Test Wing Enterprise System (TWES).

21.1.1. TWES is a collection of interoperating software tools. Users may have access to one or more of these tools to support the TW mission. **Figure 21.1** below shows the TWES Environment. This includes the tools inside the TWES accreditation boundary, and those tools with their own accreditation and interact directly with TWES. The figure provides a high-level description of what information or user interacts with those tools.

21.1.2. New users should access <https://twapps.eplin.af.mil/TWES/TPT/default.aspx> to create their profile. An account manager will activate the account.

**Figure 21.1. Test Wing Enterprise System Environment.**



21.1.3. **Test Process Tool (TPT).** A permission-based, web tool where test related work is initially entered and accepted; JONs are created and the associated JON data is managed; the test process and project metrics are managed and monitored; JON information can be searched; and links are provided for document templates, forms, guides, manuals, plans and publications. It is also where the Earned Value Cost Analysis System (EVCAS) is maintained and updated and various JON and Metric related reports are available. JON data includes: test descriptions, PE/PM/TE and JON owners assigned, customer information, JON phases, ACAT levels, process and execution dates, and types of support and testing are identified. JON WBSs, SOC information, funding document summaries, Livelink™ documents, CSE PMR overviews, and 180-Day Mission Forecasts are available. There are also links to TWES, the Customer Survey tool, and Commander's Dashboard.

21.1.3.1. **EVCAS.** Tool where WBSs are created, named, support start and end are created, costs are associated and the JONs are baselined (initiating Metrics tracking). The EVCAS tool is where CPI and SPI are generated based on the baselined WBS information. This is also where PMs input their monthly percent complete estimations by WBS and document any Metric breach reasons, or rebaselining reasons. Eglin range resource costs are also available in the Rate Inquire tool, and JON/WBS templates can also be created for repetitive projects.

#### 21.1.4. **Organizational Generic Database (OGDB)**

21.1.4.1. The OGDB is a web-based, permission controlled application that was designed to provide direct links to all 96 TW tools and also provide overarching/integrated data (Read only) access to those tools. It also provides TEs and PE/PMs test related information, to include references, program management training/briefings, links to other related information, applicable regulations, manuals, policies and management tools. OGDB also provides day-to-day personnel and test program management information and decision support information. Testing related tools include electronic project folders, JON information portfolio reviews, database/projects/ document searches, test process status, calendars that can be integrated for organizational overviews, metrics, Livelink™ Workflow status report, consolidated CSE post mission report reviews, TD and SOC document development tools, checklists, links to test aircraft schedules and modifications, links to other DoD test ranges, email addresses list for current TPT PMs and TEs, links to range facility fact sheets, link to a tool to transfer unclassified documents to SIPRnet or Joint Worldwide Intelligence Communication System (JWICS) emails, and archived Test Approval Board briefings and minutes (prior to direction to file them in Livelink™ project folders).

21.1.4.2. OGDB Management tools include: Personnel information, Additional Duties assignment and tracking, administrative staff meeting information, JON portfolio reviews, and information searches.

21.1.5. **Commander's Dashboard.** Designed to provide Test Wing leadership visibility into the status of test coded JONs throughout the project list. It also provides access to the latest TW metrics to include CPI, SPI, Breach reasons, work acceptance, Test Types, ACAT programs, SOC workload and customer surveys. This application only requires a CAC to access.

21.1.6. **Customer Surveys.** Tool where JON surveys are recorded once returned from the customers. Surveys may be initiated automatically by TPT or manually by a user. Returned surveys are normally returned to 96TW/XP, who enters those results into TPT, however any user may enter the data.

#### 21.1.7. **Detailed Cost Report**

21.1.7.1. The Detailed Cost Report provides customizable range cost report, to include test site/ facilities and range O&M contractor labor costs. Several reports are available depending on your desired information, but the most commonly used one is the “Cost by JON and Mission”. This report shows costs by day, then mission number, to include charge descriptions, regular and overtime costs and hours, WBS charged, and the facility/area supporting. These costs are normally required to be posted no later than three days after the mission is competed. This is the closest a PM will get to having near-real time costs, but be advised it does not include any civilian labor or A&AS contractor labor costs, as well as any other non-O&M contract charges.

### 21.2. **Livelihood™.**

21.2.1. Livelihood™ is a commercial product that has been customized to fulfill the software requirements needed for AFTC test documentation. It is the official repository for all 96th Test Wing (96 TW) test process documents and AFTC safety packages. Each JON has a Livelihood™ folder located under the Livelihood™ “96 TW JON Project Folders” folder. It is also one of the sources of key test data for the Commander’s Dashboard, TPT, and OGDB. Livelihood™ workflows are used to automate the coordination of test documentation reviews and approvals. Users can upload documents, create folders, initiate a workflow, act as a participant in a workflow task, electronically approve and sign documents, and search the extensive test document repository to retrieve current and historical test documents, to include document versions. All completed workflows are also archived and retrievable for reference. Upon request, Livelihood™ developers create custom workflows, reports, and interfaces based on approved requirements. The Livelihood™ User’s Guide link is available in the OGDB under the Livelihood™ Menu, along with Livelihood™ training briefings.

### 21.3. **Job Order Cost Accounting System (JOCAS).**

21.3.1. JOCAS is a cost accounting system with a web-enabled, graphical user interface (GUI), currently used by Major Range and Test Facility Bases (MRTFB); Research, Development, Test, and Evaluation (RDT&E); Space Command; and the Defense Security Service (DSS). The JOCAS application supports government financial regulations, and cost accounting business processes, and conforms to the statutory requirements of the Federal Managers Financial Integrity Act (FMFIA) and the Chief Financial Officers Act of 1990 (CFO). JOCAS also provides for the management of support-funded resources, military pay, mission project costs by Job Order Number (JON) (project receiving the product or service), and Civilian labor hours and costs, and accumulated range resources, range operations and maintenance, as well as Eglin Advisory and Assurances contractor labor charges. JOCAS also provides JON-level funding, commitments, obligations and expenses reporting through the Job Order Status Report (JOSR), available after each consolidation (mid and end of month).

#### **21.4. Center Enterprise Scheduling (CSE).**

21.4.1. CSE is a mission request and scheduling system used to schedule range mission resources, including aircraft, instrumentation, airspace, land, water ranges, and test facilities. It provides users with a web-based interface to build and submit mission requests interactively. Mission requests may include a wide variety of information for a mission such as desired and required time blocks, personnel, and resource requests. CSE is also used to deconflict missions based on the mission priority, availability of resources, and the date of execution. The automated scheduling system provides an effective, conflict free, mission and resource schedule using a “man-in-the-loop” management approach. All CSE EGLIN users can view the schedule. The actions you can take while using CSE are governed by the roles assigned to you by the local CSE administrator. Depending on your assigned role(s), some buttons and links may be disabled and/or read-only versions of pages will display. Information contained within CSE is only unclassified and also includes the Eglin Long Range schedule information. Reports generated by CSE are clearly and appropriately marked as “ Controlled Unclassified Information (CUI)”. All printed copies should be safeguarded by the user according to CUI guidelines.

#### **21.5. Test Wing Enterprise System (TWES) Advisory & Assistance Services (A&AS) Software Tool.**

21.5.1. The purpose of the TWES A&AS Tool is to collect and manipulate detailed test mission cost data on a frequency in accordance with each prime contractor supporting the Technical and Management Advisory Services (TMAS) Task Orders. The data can then be extracted in a tailorable manner to meet various government needs, as well as provide an automated, electronic input into applicable JOCAS systems to facilitate the collection of reimbursable charges from test customers. The TWES A&AS Tool may also be implemented for any subsequent A&AS contractual vehicles awarded to support the Test Wing Enterprise or any subset thereof. User can access the TWES A&AS Tool with their CAC card on a government configured computer with access to the \*.mil domain.

#### **21.6. Environmental Air Force Form 813.**

21.6.1. 96 CEG provides a web based tool allowing the PE/PM to request an environmental evaluation for testing activities (or any other activities that may impact the Eglin environment). The PE/PM submits an AF Form 813 using the AF Form 813 Main Menu, selecting the Submit AF Form 813 link. This then requires a review of your personal account data, and once complete presents a form to enter your request. Make sure to include your JON in the request as well as your Work Task (WT) number if real property will be impacted, if applicable (see [paragraph 21.7](#) below). You can attach documents as part of the review package, normally your MOT or CONOPS, drawings, maps, etc. Once the data entry is completed, submit the form and upload your documents. Once submitted your unit’s Unit Environmental Coordinator (UEC) reviews the submission and forwards it for evaluation. The information is then reviewed by 17 different environment and safety specialists. They enter any comments or required mitigations. Once all the reviews are completed an overall assessment is provided, normally a Categorical Exclusion (CATEX), but an Environmental Assessment may be required for new activities never conducted at Eglin before. The tool also allows searching for AF Forms 813 for other JONs, and also allows viewing a rich text file of the form, which can be saved to Livelink™.

**21.7. 96 CEG Real Property Impacted Service Request Process .**

21.7.1. An appointed Facility Manager or equivalent is required to utilize NexGen IT to submit a Service Request when projects will impact real property.

21.7.2. 796 CES Requirements will receive and review the Service Request and, if deemed appropriate, will transfer it to a WT.

21.7.3. The WT will be discussed at a weekly Work Request Working Group (WRWG) and, if deemed appropriate, move to the Work Request Review Board (WRRB) for approval/disapproval. The WRRB also meets weekly. The Customer will then be notified of the status of the WT. Customers should expect a decision within 3 weeks of a Service Request.

21.7.4. An AF IMT Form 103, as discuss in [paragraph 10.6.1](#) Dig Permits, will be required prior to the start of work/disruption.

21.7.5. Only after the above steps have been successfully achieved is the work approved thru CE and ready to execute.

## Chapter 22

### METRICS AND PROJECT MANAGEMENT REVIEWS

**22.1. Overview.** Meeting customer expectations for test project cost, schedule, technical performance and timely deliverables is a high priority for the 96 TW and AFTC. Metrics are collected on all test projects in order to periodically assess and report performance and to identify areas for improvement. The customer agreement establishes the test project Performance Measurement Baseline (PMB) against which performance is measured.

**22.2. Performance Indicators.** Specific wing and center identified performance indicators are selected as metrics to assess the wing and center's ability to meet its AF mission to support the National Defense Strategy, National Military Strategy, and other policies and directives. The selected performance indicators are collected and reviewed monthly, pulled from TPT. This consolidated data is used for both wing and center Project Management Reviews (PMR) and reporting the wing's Mission Essential Task List (METL) performance via the Defense Readiness Reporting System (DRRS).

**22.3. Data Accuracy.** The accuracy and timely update of project information in TPT is essential for reporting to TW and AFTC management. PE/PMs should ensure TPT data is updated after each JOCAS consolidation period. It is especially important after mid-month consolidation, since that data is used for Metrics and METL reporting.

**22.4. 96 TW METLs.** The wing is tasked to provide quarterly METL information to AFTC, as part of AFI 10-201, *Force Readiness Reporting* guidance. The data provided associated with our test mission performance is derived from our monthly metrics information.

22.4.1. The periods of performance for the METL information reporting are lined up with JOCAS consolidation periods. The data periods used for METL reporting are:

22.4.1.1. 16 December – 15 March

22.4.1.2. 16 March – 15 June

22.4.1.3. 16 June – 15 September

22.4.1.4. 16 September – 15 December

22.4.2. The data collected and submitted for AFTC METLs are:

**Table 22.1. 96TW METL Measures and Criteria.**

| 96TW Measures                                  | Scale   | Criterion | Operator |
|--|---------|-----------|----------|
| Completed Test Projects Cost Effectiveness     | Percent | 80        | >=       |
| Completed Test Projects Schedule Effectiveness | Percent | 80        | >=       |
| Technical Deliverables Timeliness              | Percent | 80        | >=       |

22.4.2.1. The criterion of 80% refers to the three-month rolling average of the measured data during the period of performance.

22.4.2.2. When T&E metrics do not meet goals, the wing provides a summary of the reasons projects gave for completing late, over cost, or delivering a technical product late.

22.4.2.3. Cost Effectiveness is measured using Cost Performance Index (CPI) and Schedule Effectiveness is measured using Schedule Performance Index as a function of time [SPI(t)]. If a project actual cost or schedule is outside of +/-15% goal, the project is considered breached. Projects with SPI(t) or CPI < 0.85 is considered late/overrunning or “late/over” (breached); SPI(t) or CPI > 1.15 is considered early/underrunning (not breached and not reported to AFTC).

22.4.2.4. Any project completing within thirty (30) days of the estimated completion date is considered “On-time”.

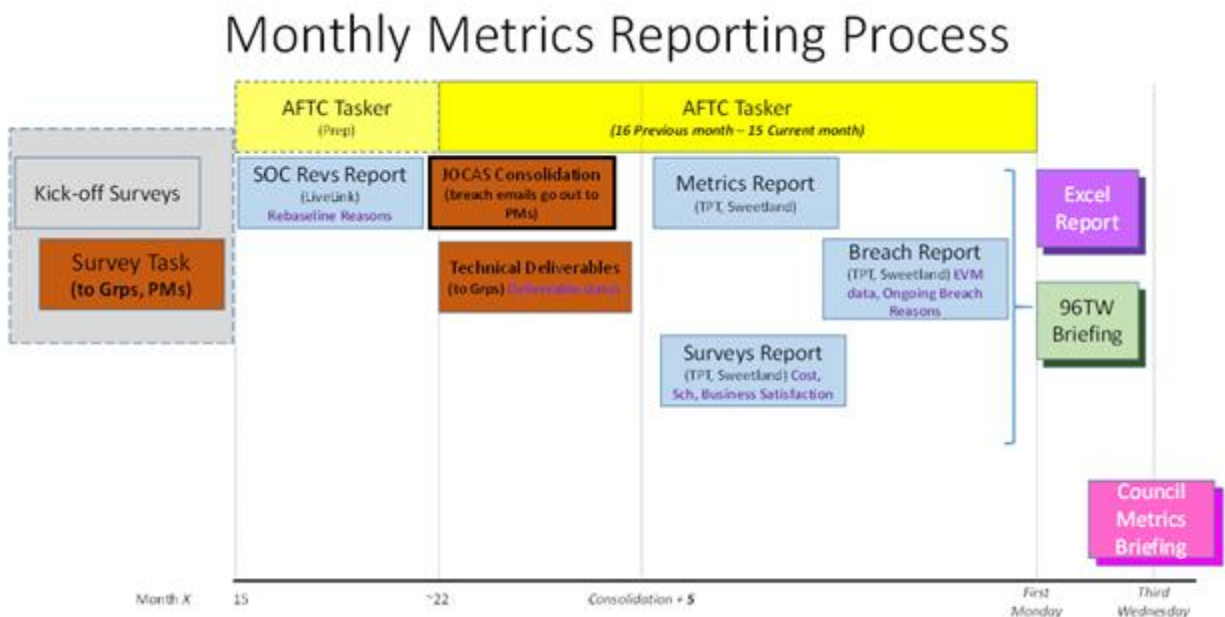
22.4.2.5. AFTC computes Cost effectiveness as the difference between the actual project cost at completion and the estimated cost of the project. If Cost effectiveness is within 10%, the project completed “Within Budget”. **Note:** 96TW uses earned value management (EVM) techniques to determine Cost and Schedule Effectiveness for ongoing projects [Cost effectiveness determined by the Cost Performance Index (CPI) and Schedule Effectiveness by the Schedule Performance Index as a function of time [SPI(t)]. AFTC doesn’t use EVM.

**22.5. AFTC Reported Metrics.**

22.5.1. Metrics are currently reported on Type Work 2 – Test and 3 – Test Support.

22.5.2. The monthly metrics timelines are shown in the figure below.

**Figure 22.1. Monthly Metrics Reporting Process.**



22.5.3. The TW provides TPT data from projects in the following categories: Ongoing (Planning, Active, Reporting), Suspended, Cancelled and Completed. The data includes, but not limited to: ACAT Category, Rebaseline Status for period, Customer Agreement Estimated Start and End Dates, Actual Start and End Date, Estimated Cost, Final Cost, Breach Reasons and Comments, and Rebaseline Reasons and Comments.

## **22.6. Project Management Reviews (PMR).**

### 22.6.1. AFTC PMR

22.6.1.1. AFTC conducts their PMR quarterly

22.6.1.2. PMR Information AFTC presents to leaders include, but it not limited to: number of projects, Completed Projects Schedule Effectiveness, Completed Project Cost Effectiveness, Complete Projects Delivery and Cost Variance, Rebaseline Reasons, and reported constraints such as aircraft, manpower, and COVID-19, and finally, Technical Deliverable Timeliness and Customer Satisfaction.

### 22.6.2. TW PMR

22.6.2.1. TW conducts their PMR quarterly, prior to the AFTC PMR to provide leadership an insight to the AFTC presentation.

22.6.2.2. The same information presented to AFTC is shown at the TW PMR, however data from other AFTC units have been removed. Items briefed typically include:

22.6.2.2.1. Distribution of Test Projects in Phases

22.6.2.2.2. Number of Projects in ACAT and BCAT Categories

22.6.2.2.3. Test Projects Characterization (Test Types, DT, OT, Specialized)

22.6.2.2.4. Ongoing Test (Total, and number in Planning, Active, and Reporting)

22.6.2.2.5. Ongoing Test Project Performance from CC Dashboard

22.6.2.2.5.1. Green - <20% of projects are breached in either cost, schedule or both.

22.6.2.2.5.2. Yellow – 20% - 40% of projects are breached in either cost, schedule or both.

22.6.2.2.5.3. Red - > 40% of projects are breached in either cost, schedule or both.

22.6.2.2.6. Ongoing Project Variance Bullseye from CC Dashboard

22.6.2.2.7. Breach Reason Report from CC Dashboard

22.6.2.2.8. SOC Workload from CC Dashboard

22.6.2.2.9. SEEK EAGLE

22.6.2.2.9.1. Total Projects

22.6.2.2.9.2. Highlights

22.6.2.2.10. New SOCs

22.6.2.2.11. Metrics reported to AFTC

- 22.6.2.2.12. Project Management Effectiveness: Completed Projects Summary for Schedule
- 22.6.2.2.13. Project Management Effectiveness: Completed Projects Summary for Cost
- 22.6.2.2.14. Completed Project Delivery and Cost Variance by ACAT and 96 TW Average
- 22.6.2.2.15. Ongoing Projects impacts (Selected by constraint[breach])
- 22.6.2.2.16. T&E Project Management Effectiveness: Technical Deliverables
- 22.6.2.2.17. Customer Satisfaction: Schedule/Cost Business Satisfaction
- 22.6.2.2.18. High Profile Program Reviews (as selected by groups/units)
- 22.6.2.2.19. Project in Reporting greater than 6 months
- 22.6.2.2.20. Projects in Suspended greater than 180 days.

## **22.7. Metric Considerations for PE/PM.**

22.7.1. Project information matters. Individual project data is only one data point. But combined with other projects, can present a story of needs, requirements and deficiencies. Brief, concise comments about breaches or rebaselines can provide leaders and managers at all levels better insight into the problems and issues for a project.

22.7.2. All comments for breaches and rebaselines should support and amplify the reasons selected. Comments that do not logically follow the reason provided creates confusion and additional questions from wing and center staff.

22.7.3. AFTC refers to both breach and rebaseline reasons as constraints. It basically uses the same list for both. The TW has adjusted these constraints to better match and manage the issues at the wing level. These adjustments help us better match and track TW needs and priorities.

22.7.4. The Commander's Dashboard has several bulleye charts showing the Cost/Schedule Variance of Test Projects. Those variances are calculated based on the equations in **Chapter 17**.

## Chapter 23

### CIVIL ENGINEERING WORK CLEARANCE

**23.1. Overview.** A work clearance is required if impacts to real property are expected. These impacts must be considered during the planning process.

**23.2. Work Clearance Request.**

23.2.1. The AF IMT 103, Base Civil Engineering Work Clearance Request (Dig Permit) is used for any work (contract or in-house) that may disrupt aircraft or vehicular flow, base utility services, protection provided by fire and intrusion alarm system, or routine activities of the installation. This form is used to coordinate the required work with key base activities and keep customers inconvenience to a minimum. It is also used to identify potentially hazardous work conditions in an attempt to prevent accidents. AF IMT 103 shall be processed prior to the start of work that impacts real property.

23.2.2. All ground/real property disturbing activities require a completed AF Form 813 prior to issuing the AF IMT 103 (dig permit).

23.2.3. For ground disturbances greater than 4 inches, the team obtains a AF IMT 103 (dig permit).

23.2.4. If delays are encountered and/or the PE/PM determines that site conditions have changed, the work clearance request must be reprocessed.

23.2.5. AF IMT 103 (dig permits) can be obtained by contacting 96 CEG Customer Service, 796 CES/ CEOER, at least 20 working days prior to the requested activity. An AF Form 813 must be completed before the dig permit is obtained and the RCS number should be annotated on the AF IMT 103.

23.2.6. The team initiates the process by sending an email to [796CES.CEOER.EglinForm103@us.af.mil](mailto:796CES.CEOER.EglinForm103@us.af.mil) and instructions will be provided for the AF IMT 103 electronic process. The PE/PM should call the Customer Service desk in advance and seek updated guidelines on AF IMT 103 process from 796 CES/CEOER POC: Mr. Gregory Miller, 850-882-8037.

23.2.7. The PE/PM monitors compliance with the AF IMT 103 (dig permit) requirements as costs resulting from non-compliance could be incurred by the requesting party.

SCOTT A. CAIN  
Brigadier General, USAF  
Commander

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*Adopted Forms*

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*Abbreviations and Acronyms*

**A&AS**—Advisory and Assistance Services

**ACAT**—Acquisition Category

**ACC**—Air Combat Command

**ACWP**—Actual Cost of Work Performed

**AD**—Actual Duration

**ADA**—Anti-Deficiency Act

**AEDC**—Arnold Engineering Development Complex

**AF**—Air Force

**AFB**—Air Force Base

**AFFARS**—Air Force Federal Acquisition Regulation Supplement  
**AFGSC**—Air Force Global Strike Command  
**AFI**—Air Force Instruction  
**AFIT**—Air Force Institute of Technology  
**AFLCMC**—Air Force Life Cycle Management Center  
**AFMAN**—Air Force Manual  
**AFMC**—Air Force Materiel Command  
**AFMCI**—Air Force Materiel Command Instruction  
**AFMCSUP**—Air Force Materiel Command Supplement  
**AFOTEC**—Air Force Operational Test and Evaluation Center  
**AFRL**—Air Force Research Laboratory  
**AFTC**—Air Force Test Center  
**AFTCI**—Air Force Test Center Instruction  
**AGE**—Aerospace Ground Equipment  
**ANG**—Air National Guard  
**ANOVA**—Analysis of Variance  
**AOA**—Analysis of Alternatives  
**ASTE**—Advanced Strategic and Tactical Infrared Expendables  
**AT&L**—Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics  
**ATC**—Authority to Connect  
**ATO**—Authorization to Operate  
**BAC**—Budget at Completion  
**BCAT**—Business System Category  
**BCWP**—Budgeted Cost of Work Performed  
**BCWS**—Budgeted Cost of Work Scheduled  
**BPAC**—Budget Program Activity Code  
**C4ISR**—Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance  
**CAO**—Civil Aircraft Operations  
**CAPE**—Cost Assessment and Program Evaluation  
**CARA**—Capability Analysis Risk Assessment  
**CATEX**—Categorical Exclusion  
**CC**—Commander

**CCARS**—Comprehensive Cost and Requirement System  
**CCB**—Configuration Control Board  
**CCF**—Central Control Facility  
**CDT**—Chief Developmental Tester  
**CE**—Civil Engineering  
**CFR**—Code of Federal Regulations  
**CI/CD**—Continuous Integration/Continuous Deployment  
**CIP**—Critical Information Protection  
**CMMT**—Configuration Modification Management Team  
**CNWDI**—Critical Nuclear Weapon Design Information  
**CONOPS**—Concept of Operations  
**COTS**—Commercial-off-the-Shelf  
**CPI**—Cost Performance Index  
**CRA**—Continuing Resolution Authority  
**CRDA**—Cooperative Research and Development Agreements  
**CS**—Communications Squadron  
**CSE**—Center Scheduling Enterprise  
**CT**—Technical Director  
**CTO**—Communications Tasking Order  
**CUI**—Controlled Unclassified Information  
**CVA**—Cyber Vulnerability Assessment  
**CVI**—Cyber Vulnerability Investigation  
**D&F**—Determination and Findings  
**DAFI**—Department of the Air Force Instruction  
**DAFMAN**—Department of the Air Force Manual  
**DAFPD**—Department of the Air Force Policy Directive  
**DAU**—Defense Acquisition University  
**DBA**—Direct Budget Authority  
**DEF**—Developmental Evaluation Framework  
**DESR**—Defense Explosives Safety Regulation  
**DFARS**—Defense Federal Acquisition Regulation Supplement  
**DISS**—Defense Information Security System

**DNS**—Domain Network Server  
**DoD**—Department of Defense  
**DoDD**—Department of Defense Directive  
**DoDI**—Department of Defense Instruction  
**DoDM**—Department of Defense Manual  
**DOE**—Design of Experiments  
**DR**—Deficiency Report  
**DT**—Developmental Test  
**DT&E**—Developmental Test and Evaluation  
**DTO**—Distributed Test Operations  
**E3**—Electromagnetic Environmental Effects  
**E-OMS**—Eglin Operations and Maintenance Support contract  
**EA**—Environmental Assessment  
**EAFB**—Eglin Air Force Base  
**EAFBI**—Eglin Air Force Base Instruction  
**EEIC**—Element of Expense Investment Code  
**EIAP**—Environmental Impact Analysis Process  
**EIS**—Environmental Impact Statement  
**EO**—Executive Order  
**ES**—Earned Schedule  
**ETO**—Executing Test Organization  
**ETTC**—Eglin Test and Training Complex  
**EVCAS**—Earned Value Cost Accounting System  
**EVM**—Earned Value Management  
**FAA**—Federal Aviation Administration  
**FAR**—Federal Acquisition Regulations  
**FCC**—Federal Communications Commission  
**FCT**—Foreign Comparative Testing  
**FDO**—Foreign Disclosure Policy Office  
**FIAR**—Financial Improvement and Audit Readiness  
**FLTS**—Flight Test Squadron  
**FM**—Financial Management

**FMR**—Financial Management Regulations  
**FMS**—Foreign Military Sales  
**FONSI**—Finding of No Significant Impact  
**FTS**—Flight Termination System  
**FY**—Fiscal Year (1 October – 30 September)  
**FYDP**—Future Years Defense Program  
**GAFC**—Gulf Area Frequency Coordinator  
**GAFS**—General Accounting and Finance System  
**GAO**—Government Accounting Organization  
**GPC**—Government Purchase Card  
**GPS**—Global Positioning System  
**I&M**—Improvement and Modernization  
**IA**—Information Assurance  
**IATT**—Interim Authorization to Test  
**IAW**—In Accordance With  
**IGE**—Independent Government Cost Estimate  
**IHC**—Interim Hazard Classification  
**IOT&E**—Initial Operational Test and Evaluation  
**ISA**—Interservice Support Agreement  
**ISM**—Installation Spectrum Manager  
**ISSM**—Information System Security Manager  
**ITAR**—International Traffic in Arms Regulations  
**ITT**—Integrated Test Team  
**J&A**—Justification and Approval  
**JOCAS**—Job Order Cost Accounting System  
**JON**—Job Order Number  
**JOSR**—Job Order Status Report  
**JUON**—Joint Urgent Operational Need  
**JTTOCC**—Joint Test and Training Operations Control Center  
**KSD**—Key Supporting Document  
**LBV**—Latest Baseline Version  
**LDTO**—Lead Developmental Test Organization

**LFT&E**—Live Fire Test and Evaluation  
**LMCA**—Logistics Management Contract Activity  
**LOA**—Letter of Agreement  
**LOE**—Level of Effort  
**MAIS**—Major Automated Information System  
**MAJCOM**—Major Command  
**MASO**—Munitions Accountable Systems Officer  
**MC4EB**—Military Comm-Computer Electronics Board  
**MDAP**—Major Defense Acquisition Program  
**MDS**—Mission Design Series  
**MEA**—Modification Engineering Authority  
**METL**—Mission Essential Task List  
**MIPR**—Military Interdepartmental Purchase Request  
**MOC**—Maintenance Operations Center  
**MRTFB**—Major Range Test Facility Base  
**MS**—Milestone  
**MSA**—Munitions Storage Area  
**MSDS**—Material Safety Data Sheet  
**MSL**—Mean Sea Level  
**NASA**—National Aeronautics and Space Administration  
**NATO**—North Atlantic Treaty Organization  
**NAVAIR**—Naval Air Warfare Center  
**NCOIC**—Noncommissioned Officer In Charge  
**NDA**—Non-Disclosure Agreement  
**NDAA**—National Defense Authorization Act  
**NDIA**—National Defense Industrial Association  
**NEPA**—National Environmental Policy Act  
**NIPRNET**—Non-classified Internet Protocol Router Network  
**NISPOM**—National Industrial Security Program Operation Manual  
**NIST**—National Institute of Standards and Technology  
**NTIA**—National Telecommunications and Information Administration  
**O&M**—Operations and Maintenance

**OGDB**—Organization Generic Database  
**OPR**—Office of Primary Responsibility  
**OPSEC**—Operational Security  
**OSD**—Office of the Secretary of Defense  
**OT**—Operational Test  
**OT&E**—Operational Test and Evaluation  
**OTA**—Operational Test Agency  
**OV**—Operational View  
**P&A**—Price and Availability  
**PAO**—Public Aircraft Operations  
**PE**—Project Engineer  
**PEO**—Program Executive Officer  
**PID**—Program Introduction Document  
**PM**—Project Manager (in the test project context)  
**PMA**—Post Modification Acceptance  
**PMB**—Performance Measurement Baseline  
**PMR**—Program Management Review  
**PO**—Project Order  
**POA&M**—Plan of Action and Milestones  
**POC**—Point of Contact  
**POL**—Petroleum, Oil, and Lubricants  
**POP**—Period of Performance  
**PPE**—Personal Protective Equipment  
**PPS**—Ports and Protocol Services  
**PTO**—Participating Test Organization  
**QLR**—Quick Look Reports  
**QT&E**—Qualification Test and Evaluation  
**RCCC**—Responsibility Center/Cost Center  
**RDT&E**—Research, Development, Test, and Evaluation  
**RFA**—Radio Frequency Assignment  
**ROM**—Rough Order of Magnitude  
**RON**—Reimbursable Order Number

**S-D**—Spectrum Dependent  
**SA**—Security Assessment  
**SAFE**—Safe Access File Exchange  
**SIL**—Software Integration Lab  
**SIPRNET**—Secret Internet Protocol Router Network  
**SMART**—Specific, Measurable, Achievable, Relevant, and Timely  
**SPO**—System Program Office  
**SRB**—Safety Review Board  
**SRBS**—Safety Review Board Summary  
**STAT**—Scientific Test and Analysis Techniques  
**STINFO**—Scientific and Technical Information  
**SV**—System Viewpoint  
**T&E**—Test and Evaluation  
**TAB**—Test Approval Brief  
**TD**—Test or Training Directive  
**TDY**—Temporary Duty  
**TE**—Test Engineer  
**TEA**—Test Execution Authority  
**TEMP**—Test and Evaluation Master Plan  
**TEO**—Test Execution Organization  
**THA**—Test Hazard Analysis  
**TICMS**—Theater Integrated Combat Munitions System  
**TNSN**—TICMS National Stock Number  
**TOR**—Test Organization Responsibility  
**TOW**—Transfer of Work  
**TPT**—Test Process Tool  
**TSO**—Test Safety Officer  
**TSS**—Test Support Squadron  
**TW**—Test Wing  
**TWES**—Test Wing Enterprise System  
**UON**—Urgent Operational Need  
**US**—United States

**USAF**—United States Air Force

**WBS**—Work Breakdown Structure

**WG**—Wing

**WPC**—Work Phase Code

**WT**—Work Task

**WRRB**—Work Request Review Board

**WRWG**—Work Request Working Group

*Office Symbols*

**796 CES**—796th Civil Engineering Squadron

**96 CS/SCP**—Communications Squadron (CS) Special Missions Flight

**96 CS/SCXF**—Gulf Area Spectrum Management Office

**96 CEG**—96th Civil Engineer Group

**96 CEG/CEIEA**—96th Civil Engineer Group Environmental Assets Office

**96 CEG/CEIEC**—96th Civil Engineer Group Environmental Management Branch Compliance Office

**96 CEG/CEOSC**—96th Civil Engineer Group Group Customer Service

**96 MXG**—Maintenance Group

**96 RANSS**—96th Range Support Squadron

**96 RN**—96th Range Group

**96 RNCS**—96th Range Control Squadron

**96 TW/CC**—96th Test Wing Commander

**96 TW/CT**—96th Test Wing Technical Director

**96 TW/FMP**—96th Test Wing Financial Management Programs Section

**96 TW/IPF FDO**—96th Test Wing Foreign Disclosure Policy Office

**96 TW/SEU**—96th Test Wing Safety Test and Range Safety Office

**96 TW/XP**—96th Test Wing Plans and Programs Office

**96 TW/XPI**—96th Test Wing Information Technology Section

**96 TW/XPO**—96th Test Wing Range and Installation Sustainment Section

**96 TW/XPT**—96th Test Wing Strategic Initiatives Section

**AF/TEP**—Air Force Test and Evaluation Policy, Programs, and Resources Division

**AFSEO**—Air Force SEEK EAGLE Office

**AFSMO**—Air Force Spectrum Management Office

**AFTC/CA**—AFTC Executive Director

**AFTC/EN**—AFTC Engineering and Technical Management Directorate

**DASD**—Deputy Assistant Secretary of Defense for Developmental Test and Evaluation

**DFAS**—Defense Finance and Accounting Service

**DISA**—Defense Information Systems Agency

**DOT&E**—Office of the Director of Operational Test and Evaluation

**DTIC**—Defense Technical Information Center

**OSD CTO**—Office of the Secretary of Defense Comparative Testing Office

**NRO**—Natural Resources Office

**SAF/IAPQ**—Office of the Undersecretary of the Air Force for International Affairs, Armament Cooperation Division

### *Terms*

**Acquisition Category (ACAT)**—Acquisition categories determine the level of review, decision authority, and applicable T&E policies and procedures. They facilitate decentralized decision making and execution, and compliance with statutorily imposed requirements. (*See DoDI 5000.02T, for details.*)

**Agile Test Project**—Cyber and laboratory test projects with discrete phased activities with unknown schedule which are dependent on the previous activity's completion. These dependencies and resulting uncertainties force a need for agile management of the PMB.

**Breach**—A project breaches when it exceeds the 96 TW-defined cost or schedule performance indices limits.

**Concept of Operations (CONOPS)**—Description of objectives, methodology, plan and reporting or summary of customer test plan provided in the Test/Training Directive in lieu of a Method of Test. Used when the customer does not require test design services and should instead independently execute their own test plan using Eglin range resources. Also used by TW units to describe objectives, methodology, plan and reporting for demonstrations or experiments. The CONOPS describes all aspects of the test to be executed. This includes resources, participating units or agencies, procedures, objectives, data collection, and any reporting requirements, etc. The CONOPS should provide enough detail for the TEA to understand what risk is assumed by the TW and what TW resources will be used or applied. The CONOPS shall not be deviated from without prior Test Execution Authority approval.

**Cost Performance Index (CPI)**—A measure of cost efficiency comparing the value of work achieved for a dollar of cost.

**Customer Agreement**—Overarching term that describes agreements between the Test Wing and customers. It documents resources, financial, technical and scheduled requirements of a project. The agreement establishes the Performance Measurement Baseline (PMB) for the project. The customer signature on the Customer Agreement establishes beginning of the PMB and the start of the Planning (P) phase in TPT. The end date for the PMB is the completion date, linked to the end date of the RFTD WBS. A Customer Agreement, depending on the circumstance, may be called a Statement of Capability (SOC), Letter of Agreement (LOA) or a Price and Availability (P&A).

**Data Package**—A data package entails raw and/or reduced data, TE notes/missions accomplishment forms, and pilot reports. There is no requirement for management review.

**Deficiency Report (DR)** —While not a standalone report, the Deficiency Report provides information on a deficiency, shortcoming or proposed enhancement. The DR is intended as an action tool for correction of hardware and software problems. Identified DRs will be included in published technical deliverables. DRs will be generated and approved IAW T.O. 00-35D-54.

**Demonstration**—primarily intended to show a system’s use and value in specific military environments. Demonstrations present and confirm what is known by giving proof or evidence. These defined demonstrations are not the same as a middle tier of acquisition (MTA) “ops demo”.

**Distributed Test Operations (DTO)**—Any and all operations where an AFTC Wing or Complex leverages capabilities or resources existing outside of that organization.

**Early Acquisition Engineering Support**—A “Type Work” designator in TPT used to identify an acquisition program that is in the early Pre-milestone A phase and requires only engineering support from the 96 TW for program requirements development. This type work is also used to describe early tester involvement in the acquisition process to help identify planning and other shortfalls that may occur during the development lifecycle.

**Execution Test Organization (ETO)**—This is the primary test site/organization which only exists when the AFTC has been identified as the lead developmental test and evaluation organization (LDTO).

**Experiment**—tests a hypothesis, under measured conditions, to explore unknown effects in manipulating proposed warfighting concepts, technologies, or conditions.

**Facility**—For implementation of DoD FMR, Volume 11A, Chapter 12, paragraph 120404.B.1.a sub [paragraph 1](#), a facility is property used for production, maintenance, research, engineering, development, evaluation, and/or testing. It includes equipment, plant equipment, test equipment, tooling, real and personal property, and material.

**Final Technical Deliverable**—The data or report product resulting from a test or series of tests which normally concludes test project activities.

**Lead Developmental Test and Evaluation Organization (LDTO)**—The lead government developmental test organization on the integrated test team (ITT) that is most qualified to conduct and/or be responsible for overseeing a confederation of developmental test and evaluation (DT&E) organizations, each with different but necessary skills, in support of an acquisition program. When designated by the program office, AFTC is the LDTO and may designate a subordinate organization as the Executing Test Organization.

**Letter of Agreement (LOA)**—A type of Customer Agreement. A support agreement between Air Force Test Center (AFTC) sites to capture the details of the transfer of workload.

**Letter Report**—A letter report is an informal technical deliverable, essentially a letter, used to transmit raw or reduced data. The letter report describes what was done and how it was done. Little or no data analysis may have been performed, and conclusions may not be appropriate. Normally a letter report is used to release interim or final results per the Test Directive or requester's direction. It can be used in lieu of a technical report when reporting the results of a demonstration, a part of a test, or the results of a test for which the 96 TW is a participating test organization, and the executing test organization is expected to publish a formal technical deliverable. The letter report gives a brief synopsis of those results and includes information covering analysis, accuracy, and interpretation.

**Level of Effort (LOE)**—Cost allocation method that should only be used with management or administrative tasks that cannot be allocated to a specific work activity. Accordingly, EVCAS allows only WBS codes beginning with the letter O (Level 1) to be set to LOE. Examples are test management and security support. This is appropriate since schedule variance visibility for these types of LOE tasks is not necessary. When LOE is selected for a WBS code, EVCAS automatically sets the BCWP to equal BCWS for each performance period so that manual BCWP updates are not needed. Use of LOE for all other WBS work packages is not acceptable because no schedule performance data is provided since the schedule variance is always automatically set to zero. Leadership expects that accurate test project schedule performance data should be reported at all times and excessive use of the LOE method hinders that by masking actual schedule performance.

**Livelihood™**—An OpenText™ product. The official 96 TW electronic project folder that contains the unclassified, pertinent test and training project information to include: customer agreements, test approval brief slides (if required), technical review board minutes (if required), program introduction document, Test Directives with corresponding appendices, Close-out letter, airworthiness documents, or other requirements documents.

**Major Deliverable**—A Major Deliverable is a technical deliverable or memorandum that includes recommendations to the milestone decision authority, program executive officer, Congress, Office of the Secretary of Defense, or program office.

**Method of Test (MOT)**—A document detailing all aspects of the test to be executed. This includes test resources, configuration control, methodology, objectives, procedures, data collection, analysis, success criteria, reporting requirements, etc. A Method of Test is a formal document (equivalent to a test plan from DoDI5000.59\_DAFI99-103) approved by the Test Execution Organization commander/director and shall not be deviated from without prior Test Execution Authority approval.

**Non-Discrete Test Event**—Test missions related to the completion of specific end products or objectives and cannot be directly planned and measured.

**Nuclear Related Test/Project**—A test project of any change made to an aircraft platform that is capable of carrying a nuclear weapon, if the system under test is a support item of a nuclear system, or if the system under test is a command and control support item for nuclear emergency response or communication.

**Ongoing Project**—A project that has a signed Customer Agreement and is not yet complete.

**Oversight Program**—A program on the Office of Secretary of Defense (OSD) Test and Evaluation (T&E) Oversight List for DT&E, live fire test and evaluation (LFT&E), and/or operational test and evaluation (OT&E). The list includes all major defense acquisition programs (MDAP) (e.g., ACAT I), Major Automated Information Systems (MAIS) (e.g., ACAT IA), and any other programs selected for OSD T&E Oversight IAW 10 U.S.C. § 2430(a)(1). These programs require additional documentation and have additional review, reporting, and approval requirements.

**Participating Test Organization (PTO)**—Any test organization required to support a lead test organization by providing specific test and evaluation (T&E) data or resources for a T&E program or activity. An organization that may provide additional support to the execution test organization (ETO) when required and can exist whether the Air Force Test Center (AFTC) is lead developmental test organization (LDTO) or not. Default designation and responsibilities to test projects for which AFTC is not the LDTO including Science and Technology test and demonstrations, commercial test support, and all other non-MDAP test project support.

**Percent Complete**—An estimate, expressed as a percent, of the amount of work or value of the work which has been completed on work breakdown structure element.

**Performance Measurement Baseline (PMB)**—The time-phased project cost, schedule, and deliverables/content which is established as an output/product of the Customer Agreement process. Test project performance is measured and reported against the PMB. The PMB's Work Breakdown Structure (WBS) hierarchy should be activity based and capture the time-phased spend plan for each element of work to be performed during each phase of the test project.

**Price and Availability (P&A)**—A type of Customer Agreement. In foreign military sales, the United States Government reply to a country's letter of request that includes a rough estimate of the cost of the items and/or services that a foreign customer is interested in and an estimate of how long it would take the United States Government to deliver the item and/or service. It is important to keep in mind that P&A responses are Rough Order of Magnitude (ROM) estimates only.

**Program Protection Plan (PPP)**—A defense program's integrated system security engineering document. It describes the program's critical program information and mission-critical functions and components, the threats to and vulnerabilities of these items, the plan to apply countermeasures to mitigate associated risks, and planning for exportability and potential foreign involvement.

**Project Completion**—The date that all work activities agreed to in the Customer Agreement are completed. Normally, this is attained when all work breakdown structure activities are 100% complete or when the project transitions into Closeout Phase ("Y" Status). The end date of at least one work breakdown structure activity should correspond to planned project completion. Normally project completion should not extend longer than 30-60 days beyond the final technical deliverable completion date.

**Project Management Review (PMR)**—A project status briefing given by the directors of projects to the 96 TW Commander on a rotating basis.

**Project Manager (PM)**—The individual appointed and given responsibility for overall management of the test project.

**Project Start**—The date that the customer signed the Customer Agreement. This is also the start of the planning phase in Test Process Tool.

**Quick Look Report (QLR)**—A QLR is the least formal of all reporting options for technical deliverables. Little or no data analysis will have been performed, and conclusions/recommendations are not appropriate. Normally a QLR is used to release interim or preliminary test results to the customer and document the sequence of events associated with an individual test mission. Delivery times for QLRs are negotiable with the customer (usually due within 72 hours of the test event). QLRs are usually signed by the TE and approved by the flight commander/chief. These reports are normally reviewed and approved by lower levels of authority because they are not considered to be the 96 TW's final and official position on the test item. Quick look reports for the customer are not sent to the Defense Technical Information Center (DTIC) or stakeholders.

**Real Property**—Lands, buildings, structures, utilities systems, improvements and appurtenances thereto. Includes equipment attached to and made part of the buildings and structures (such as heating systems) but not moveable equipment (such as plant equipment).

**Rebaseline**—An update to cost and/or schedule agreed to by the project team, Wing/Complex leadership and the customer documented in a Customer Agreement. Although sites may use other terms, if the cost and/or schedule commitments have been changed, then Air Force Test Center considers it a rebaseline and it should be reported as such. A project, by definition, cannot rebaseline without a Customer Agreement revision.

**Replan**—A realignment of schedule or reallocation of budget for remaining effort within the existing cost and schedule constraints of the customer agreement. In this case, the Budgeted Cost of Work Scheduled (BCWS) does not exceed the budget in the Customer Agreement, nor is the schedule adjusted to extend beyond the RFTD WBS milestone as defined in the Customer Agreement.

**Risk**—A measure of the inability to achieve project objectives within defined cost and schedule constraints. Risk is associated with all aspects of the program, e.g., threat, technology, design processes, or Work Breakdown Structure elements. It has two components: the probability of failing to achieve a particular outcome, and the consequences of failing to achieve that outcome. (*Glossary, Defense Acquisition Acronyms and Terms*) Probability and severity of loss linked to hazards. (*JP 1-02*).

**Rough Order of Magnitude (ROM)**—A document that provides an initial cost and schedule estimate, usually based on limited information.

**Scope**—The products, services, and results to be provided as a project.

**Service Request (SR)**—A request to 96 CEG/796 CES for work associated with real property and submitted by Facility Manager via NexGen IT.

**Statement of Capability (SOC)**—Also known as Customer Agreement. A binding agreement between 96 TW and the test customer that delineates scope, technical performance, project risk, and detailed cost and schedule estimates. The Statement of Capability establishes the project performance measurement baseline.

**Technical Deliverable**—The data, written report, or other agreed to product that results from a test or series of test. The type of technical deliverable is delineated in the customer agreement. Technical deliverables are often referred to with the less precise and confusing term, "report".

**Technical Report**—A Technical Report is intended for stakeholders, such as command and the acquisition community, and are also sent to the Defense Technical Information Center (DTIC). These technical deliverables present the 96 TW’s official opinion and position on the tested system and are appropriate for use by Congress and the Government Accounting Organization (GAO). This technical deliverable also includes the recommendation. The Technical Report is the most formal and most detailed of the technical deliverable options. The Technical Report contains a complete description of the test setup, how execution proceeded, and what happened. The level of detail of data in the Technical Report will depend on the type of testing accomplished and the customer’s needs. If the project extends over several years, an interim Technical Report format is used as a periodic report on “testing to date.”

**Technical Review Board (TRB)**—A board to review test objectives, refine test plans, and assess the overall technical soundness of test design/set-up. As a minimum, technical reviews will assess test requirements, approach, techniques, and primary test objectives.

**Technical Risk**—Any test technical, engineering, or integration risk that may prevent the project from meeting test objectives or design due to limitations within the 96 TW range, facilities, or instrumentation capability. Technical risk can be internally or externally generated.

**Test Approval Brief (TAB)**—An executive level meeting that provides a test program overview and highlights test unique hazards, mitigation procedures, discussion points during the independent review, and any contention or disagreement by the independent board and the test team. The meeting at which the residual risk is accepted and the test approved.

**Test Directive (TD)**—The Test Directive is authorization to commit 96 TW resources to execute a test, demonstration, or experiment. The Test Directive includes the Method of Test, CONOPS or test plan, safety appendix and appropriate support appendices and is approved when signed by the Test Execution Authority (TEA). The Test Directive should be ready for publication prior to the Test Approval Brief (TAB). The date the Test Directive is signed becomes the official start date of the Active phase, which is required prior to commencing scheduled mission activity.

**Test Execution Authority (TEA)**—The government individual responsible for accepting the Safety Review Board (SRB) and Test Review Board results and approving the Test Directive authorizing the test to proceed with any residual risk. In the 96 TW, the TEA for high risk test projects is the 96 TW/CC. TEA for medium and low risk test projects is the appropriate Group Commander/Director or Flight Operations Authority. TEA for low risk test projects may be delegated to the Squadron Commander.

**Test Execution Organization (TEO)**—Basic organization (Squadron or Detachment) organized, trained, equipped, and assigned with the mission to conduct test and evaluation operations.

**Test Plan**—A document detailing all aspects of the test to be executed. This includes test resources, configuration control, methodology, procedures, objectives, data collection, analysis, success criteria, reporting requirements, etc. A test plan is a formal document approved by the Test Execution Organization commander/director and is not to be deviated from without prior approval.

**Test or Training Project**—A planned undertaking in response to customer requirements having a finite beginning and ending; involving development, test, and evaluation of a major weapon or weapon support system or systems in response to a stated mission need or deficiency. A test or training project may be the whole or a part of a program and may be used to obtain, verify, or provide data for the evaluation of performance, operational capability and suitability, vulnerability, and lethality of systems, subsystems, components, and equipment items. A test project executes test points. It can be executed by an ETO or a PTO. A training project utilizes range resources for training activities, both air and ground.

**Test Safety Officer**—Generally refers to 96 TW/SEU personnel supporting the wing's safety review process and test/training projects. These personnel may sometimes be referred to as a Test Safety Engineer, Range Safety Engineer, or Range Safety Officer.

**Time-Based Schedule Performance Index (SPI[t])**—A measure of schedule efficiency at which the project has performed to date.

**Training Directive (TD)**—The Training Directive is authorization to commit resources to execute the a training project. Training Directives normally include continuation or proficiency training conducted under approved syllabi IAW existing DoD instructions. The Training Directive includes the training plan or CONOPS, safety appendix, and appropriate supporting appendices and is approved when signed by the Test Execution Authority. The date the Training Directive is signed becomes the authorized start date of the active training project.

**Transfer of Work (TOW)**—A process used to take advantage of available resources across the Air Force Test Center Enterprise to avoid unnecessary expenditures on site-specific resources and to provide more agility in execution of mission requirements.

**Work Breakdown Structure (WBS)**—A hierarchical decomposition of the total scope of the work to be carried out by the project team to accomplish the project objectives and create the required deliverables. An activity-oriented breakdown of project work that combines planning, budgeting, scheduling, and cost accounting.

**Work Task (WT)**—Designates a service request received by CE that has been reviewed and determine to be work associated with real property.

## Attachment 2

## GLOSSARY OF AGILE SOFTWARE DEVELOPMENT TERMS

Figure A2.1. Glossary of Agile Software Development Terms.

**Agile** — The deliberate, iterative non-linear, non-sequential, responsive project management methodology that focuses on small frequent capability releases.

**Backlog** — An evolving prioritized queue of requirements that consists of user stories, epics, and/or themes.

**Continuous Integration/Continuous Deployment** – continuous integration and either continuous delivery or continuous deployment to the Operational Environment.

**Epic** — A description of an end product of software functionality that a user wants. This is usually too large to complete in one sprint. It is generally completed over multiple sprints. Epics usually end in a software version release.

**Release** – Per DoDI5000.89\_DAFI99-103, paragraph 4.5. b. (7), a distinct, tested, deployable software element of militarily-useful capability. For consistency, “release” will be the only accepted term used to describe the smallest fieldable/deployable software element in all future DAF TEMPs or test strategies, test plans, and test reports as well as updates to previous documents.

**Sprint** — A software test iteration.

**User Story** — A description of an end product of software functionality that a user wants. This is usually a small enough increment to complete in one sprint. A user story by itself is usually not large enough to warrant a software version release.

### Attachment 3

#### TYPE WORK DESIGNATORS IN TPT

**Figure A3.1. Type Work Designators In TPT.**

**2-Test (MOT)** — A “Type Work” designator in TPT used to identify a test, experiment, or demonstration project where the 96 TW is the designer of the test plan and prepares a Method of Test. These events are authorized by a Test Directive, which includes a MOT.

**3-Test Support (CONOPS)** — A “Type Work” designator in TPT used to identify a test project where the 96 TW is not responsible for the design of the test but supports a customer provided test plan. These events are authorized by a Test Directive, which includes a CONOPS.

**4-Exercise** — A “Type Work” designator in TPT used to execute a major named event as described in an exercise plan, i.e. Emerald Warrior or Checkered Flag. These events are authorized by a Training Directive, which includes a CONOPS.

**5-Training** — A “Type Work” designator in TPT used to identify an operational training project where the 96 TW provides range resources for proficiency and continuation training activities. These events are authorized by a Training Directive, which includes a CONOPS.

**6-Other Non-Test** — A “Type Work” designator in TPT used to identify a planned project that is a temporary undertaking having a finite beginning and ending; planned to achieve a particular goal, meet objectives, or create a unique product, service, or result. A non-test project should not require the execution of test points, acquisition of data or the evaluation of results. It may provide support or facilities to other test or non-test projects, businesses or individuals. However, an approved Test/Training/Support Directive is still required for CSE scheduling.

**7-Early Acquisition Engineering Support** — A “Type Work” designator in TPT used to identify an acquisition program that is in the early Pre-milestone A phase and requires only engineering support from the 96 TW for program requirements development. This type work is also used to describe early tester involvement in the acquisition process to help identify planning and other shortfalls that may occur during the development lifecycle. This Type Work cannot be used to schedule range assets or support an Active Work phase. Project must be changed to an appropriate Type Work (2 or 3) for test planning, execution, and reporting.

**8-Range System Checkout** — A “Type Work” designator in TPT used by TW projects to identify work performed and schedule missions on a non-interference basis to conduct minor maintenance, system calibration, or functional checkout on TW systems. This Type Work is not used to support customers. An approved directive is required.

**9-Improvement and Modernization (I&M) Project** — A “Type Work” designator in TPT used to identify projects which are funded with the I&M Program Element Code as well as large internal range capability build-ups or configuration changes, regardless of the size of the project being conducted by the 96 TW. This Type Work is not used to support customers.

## Attachment 4

## BREACHES AND REBASELINES INFORMATION

Table A4.1. Breach Reasons and Descriptions.

| Breach Reason  | Description   | Breach  | Category             | Polarity |
|--|---|---|----------------------|----------|
| COVID-19 Impacts   | Explain in Comment section how COVID-19 impacts project   | Under Cost<br>Over Cost<br>Ahead of Schedule<br>Behind Schedule | Internal<br>External | +<br>-   |
| Requirements/Scope Change                                | Few requirements or scope has been added by the customer since SOC signature  | Under Cost<br>Over Cost<br>Ahead of Schedule<br>Behind Schedule | External             | +<br>-   |
| Scope Change Financial                                   | An increase or decrease in scope based on release of current FY funding   | Over Cost<br>Behind Schedule                                    | External             | -        |
| System Under Test (SUT) Issues                           | Immature system has delayed delivery or readiness for test as scheduled in SOC  | Under Cost<br>Over Cost<br>Ahead of Schedule<br>Behind Schedule | External             | +<br>-   |
| External Resource Availability                           | Customer-provided resource delayed; External Test Range is unavailable or availability is delayed.                            | Under Cost<br>Over Cost<br>Ahead of Schedule<br>Behind Schedule | External             | +<br>-   |
| Late Supplier Delivery                                   | Late Supplier Delivery Customer late in providing asset(s) (Not SUT)  | Under Cost<br>Over Cost<br>Ahead of Schedule<br>Behind Schedule | External             | +<br>-   |
| Weather  | Excessive weather delays that require schedule slip outside SOC timeframe   | Under Cost<br>Over Cost<br>Behind Schedule                      | External             | +<br>-   |
| Supply Cost (including fuel)                             | Unexpected increase in cost of supplies and/or materiel that causes costs to exceed SOC approved levels                       | Over Cost<br>Behind Schedule                                    | Internal             | -        |
| Insufficient manpower                                    | Delay or unavailability that causes schedule slip outside of the SOC timeframe  | Over Cost<br>Behind Schedule                                    | Internal             | -        |
| Range unavailable (identify range)                       | Delay or unavailability that causes schedule slip outside of the SOC timeframe  | Over Cost<br>Behind Schedule                                    | Internal             | -        |
| Resource unavailable (identify resource, facility, etc.) | Delay or unavailability that causes schedule slip outside of the SOC timeframe (not SUT, Aircraft, Range, Supply or Manpower) | Over Cost<br>Behind Schedule                                    | Internal             | -        |

|   |   |   |                      |        |
|---|---|---|----------------------|--------|
| Resource unavailable - aircraft   | Identify Aircraft MDS and brief comment on problem (Not Maintenance or Modification)    | Over Cost<br>Behind Schedule                                    | Internal             | -      |
| Maintenance/Modification  | Delay T-2 Mods, Instrumentation, Maintenance issues, parts, etc. (Details in Comments)  | Over Cost<br>Behind Schedule                                    | Internal             | -      |
| Compressed test points requiring fewer missions   | Compressed test points but covered all objectives                                       | Under Cost<br>Over Cost<br>Ahead of Schedule<br>Behind Schedule | Internal             | +<br>- |
| Resource/Mission Sharing with other test project (list project and provide explanation) | Resource/Mission Sharing with other test project (list project and provide explanation) | Under Cost<br>Ahead of Schedule                                 | Internal             | +      |
| Conservative estimate to avoid ADA  | Conservative estimate to avoid ADA (generally commercial projects)                      | Under Cost<br>Over Cost<br>Ahead of Schedule<br>Behind Schedule | Internal             | +<br>- |
| Conservative Estimate   | Actual costs are less than conservative estimate in PMB (explain in comments)           | Under Cost<br>Ahead of Schedule                                 | Internal             | +      |
| Customer Funding Constraints  | Customer funding inadequate to cover SOC estimate                                       | Over Cost<br>Behind Schedule                                    | External             | -      |
| Unexpended Obligation   | Explain in comment section  | Under Cost  | Internal             | +      |
| Other (provide explanation)   | Explain in comment section  | Under Cost<br>Over Cost<br>Ahead of Schedule<br>Behind Schedule | Internal<br>External | +<br>- |

**A4.1. Not all Breach Reasons are available for every case.** The Breach, Category and Polarity help define the criteria for availability for the PE/PM to select.

**A4.2. Use the Breach Reason “Other” if no other reasons are applicable.** Additional reasons or availability of current reasons could be added to the system. Contact 96 TW/XPT with suggestions.

**Table A4.2. Rebaseline Reasons and Definitions.**

| <b>INTERNAL Rebaseline Reasons and Definitions</b> |  |  |
|--|--|--|
|  | <b>Reason</b>                                | <b>Definition</b>  |
| 1  | Aircraft unavailable*                        | Eglin aircraft unavailable to support test. (Specify platform.)  |
| 2  | Range unavailable                            | Eglin test range unavailable. (Specify range.)   |
| 3  | Other Resource unavailable                   | Eglin resource unavailable. (Other than aircraft or range.)  |
| 4  | Insufficient Manpower                        | Shortage of manpower required to support test.   |
| 5  | Supply cost                                  | Cost of materials significantly varied from estimate. (Includes fuel.)   |
| 6  | Aircraft Maintenance Delay                   | Long-term aircraft maintenance delay impacting test.   |
| 7  | Aircraft Modification Delay*                 | Long-term aircraft modification delay impacting test.  |
| 8  | Administrative Correction*                   | Correction to administrative error in PMB.   |
| 9  | Agile Project (Sprint Added)*                | Planned incremental work in support of agile project.  |
| 10   | Other  | No defined rebaseline reason applies. (Detailed comments required.)  |
| 11   | COVID-19 Impacts*                            | Impacts resulting from COVID-related travel restrictions, access to base/facilities/networks/etc., or alterations to original plan directly driven by COVID-19 considerations. (describe impact) |
|  |  |  |
| <b>EXTERNAL Rebaseline Reasons and Definitions</b> |  |  |
|  | <b>Reason</b>                                | <b>Definition</b>  |
| 1  | Aircraft unavailable (provide MDS platform)* | Non-Eglin aircraft unavailable to support test. (Specify platform.)  |
| 2  | Range Unavailable*                           | Non-Eglin test range unavailable.  |
| 3  | Other Resource Unavailable                   | Customer provided resource, other than system under test, unavailable/delayed. (Not to be used for aircraft unavailable or range unavailable.)   |
| 4  | New FY Requirements*                         | Customer requests additional work in next FY. (Annual Customer agreements supporting long-term projects)   |
| 5  | Requirements/Scope Change                    | Customer increased/decreased test requirements.  |
| 6  | System Under Test (SUT) Issues               | Performance issues discovered in test.   |
| 7  | Late Supplier Delivery                       | Delays in receiving required items needed to conduct testing; includes system under test.  |
| 8  | Customer Funding Delay                       | Customer unable to provide funding according to agreed-upon date.  |
| 9  | Financial Scope Change                       | Customer unable to provide agreed upon funding due to funding constraints.   |
| 10   | Other  | No defined rebaseline reason applies. (Detailed comments required.)  |

|    |                   |  |
|----|-------------------|--|
| 11 | Weather           | Detailed comments are required to accompany this reason. (Will not be available in TPT in future update).  |
| 12 | COVID-19 Impacts* | Impacts resulting from COVID-related travel restrictions, access to base/facilities/networks/etc., or alterations to original plan directly driven by COVID-19 considerations. (describe impact) |

**A4.3. Items marked with an asterisk (\*) are not listed in AFTCI 99-100, *Statements of Capability*, Figure A4.** 1. 96 TW created reasons for improved metrics tracking.

## Attachment 5

### JOCAS WORK PHASE CODES

#### A5.1. JOCAS Work Phase Code (WPC) descriptions.

A5.1.1. **P - Planning.** (Charges Allowed) In the Test Project Management Framework, described in 96TWI 99-100, *Test Project Management*, this Work Phase includes both the Requirements Definition (PP) and Planning (P) phases.

A5.1.2. **A - Active** (may include analysis and reporting). (Charges Allowed) This phase requires a signed Test Directive (TD), unless an early turn-on is approved, IAW EAFB 13-200, *Eglin Range Mission Scheduling and Control*.

A5.1.3. **R - Reporting.** (Charges Allowed) The job order completes any reporting requirements in this phase. It usually follows Active and precedes Close-Out.

A5.1.4. **S - Suspended.** Used for substantial delays (usually greater than 60 days). WPC S Status restricts Labor/COST/PS charges via the JOCAS "**on-line**" screens. S Status does not stop any uploaded files from external systems (see list below). PE/PM continues to monitor job orders in Suspended.

A5.1.5. **X – Cancelled.** Indicates job orders has been cancelled or terminated short of the intended technical goal from the Customer Agreement. No additional charges are allowed unless WPC is changed to one that allows charges. PE/PM continues to monitor job orders in Cancelled. TPT changes the JOCAS estimated Completion Date to 90 days from the date the job order enters X status, allowing job order visibility on the CC Dashboard. Job orders in X Status move to Z Status when Z Status conditions are met.

A5.1.6. **Y – Close-Out** (FM calls this phase **Completed**). Indicates job orders that have been completed within the scope of the intended technical goal and to which no new direct costs may be obligated or assigned but has unliquidated obligations outstanding. WPC Y Status restricts Labor/COST/PS charges via the JOCAS "**on-line**" screens. Y Status does not stop any uploaded files from external systems (see list below). PE/PM continues to monitor job orders in Close-Out. The PE/PM may change project phase to another phase (other than Closed). Job orders in Y Status move to Z Status when Z Status conditions are met.

A5.1.7. **Z – Closed.** Indicates job orders have been completely closed out with no remaining unliquidated obligations. Only the JOCAS office can move job orders from/to Z status. JOCAS moves job orders to the Z status automatically if the following conditions have been met:

A5.1.7.1. All outstanding funding has been cleared.

A5.1.7.2. No Deferrals exist.

A5.1.7.3. No Commitments/Obligations pending.

A5.1.7.4. Estimated completion date field is updated on JON.

A5.1.7.5. JON is in WPC 'X' or 'Y' phase in JOCAS

A5.1.7.6. 90 Days have passed since steps 1 thru 4 have been completed.

**A5.2. To move a JON out of WPC Z stage, documentation requesting the move from the FM POC and JON POC is required.** JONs will be moved back to WPC Y if new commitments or obligations are added or deferrals exist on the JON.

**A5.3. No additional charges are allowed unless WPC is changed to one that allows charges.** The Test Wing must accept and adjudicate these charges. PE/PM stop monitoring JONs once they enter Z status. FM will lead adjudication of new JON charges for projects in Z, with assistance of PE/PM or ETO personnel.

**A5.4. External systems interfacing with JOCAS:**

A5.4.1. VTC – O&M Contractor Charges

A5.4.2. SCW – RNCS Contractor Charges

A5.4.3. WIMS – Work Information Management System

A5.4.4. CAMS – Control and Monitoring System

A5.4.5. CPAS – Central Procurement Accounting System

A5.4.6. GAFS – General Accounting and Finance System

A5.4.7. SBSS – Standard Base Supply System

**A5.5. Project management procedures are outlined in 96TWI99-100, *Test Project Management*, and 96TWH99-101, *Test Project Management Procedures*.**

**A5.6. JOCAS Phases defined in an attachment of EAFBI65-601, *Job Order Cost Accounting Operations*.**

## Attachment 6

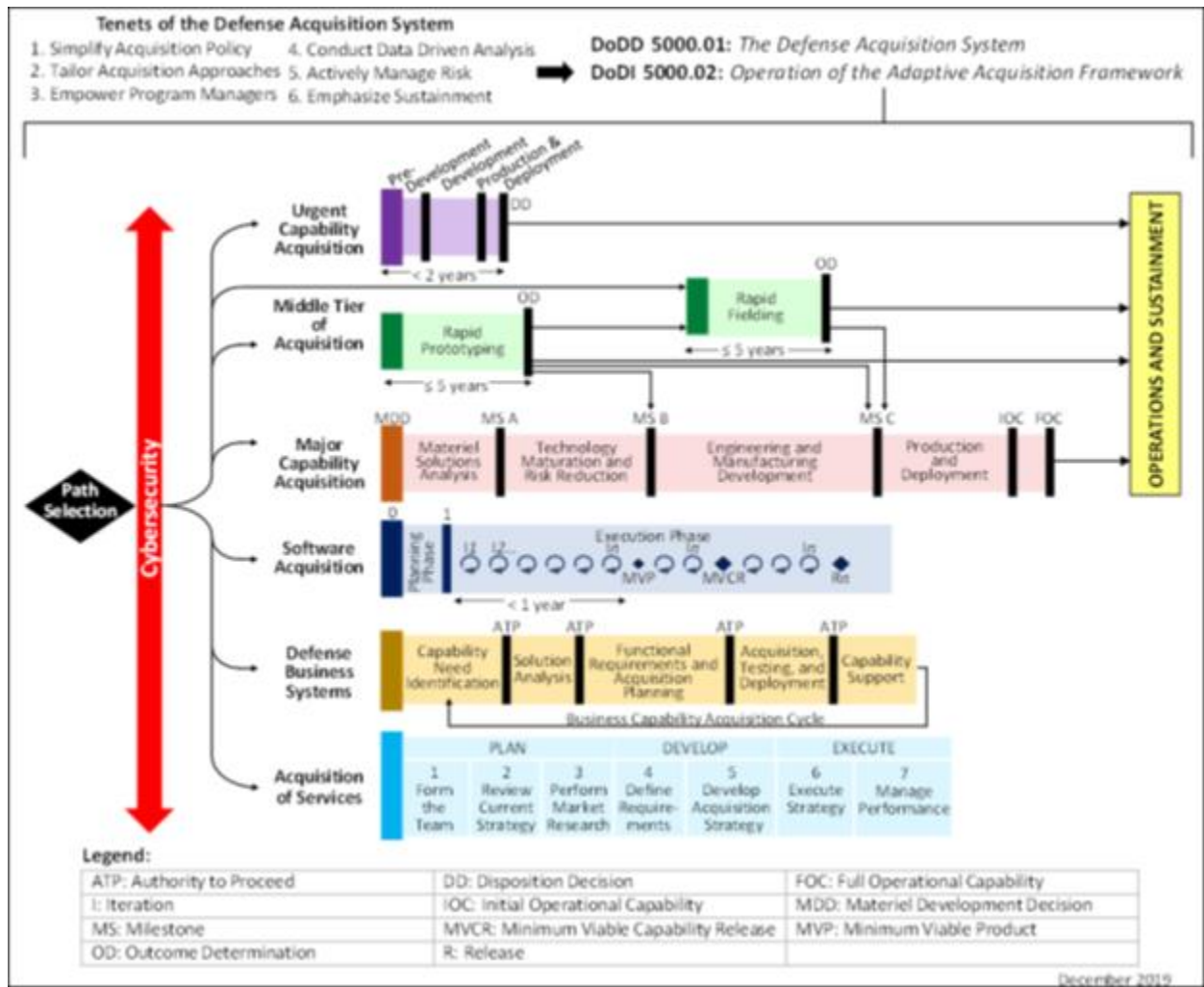
### ADAPTIVE ACQUISITION FRAMEWORK PATHWAYS AND OTHER TW SUPPORT

**A6.1. DoDI 5000.02, *Operation of the Adaptive Acquisition Framework*** . Provides general procedures of the six pathways described in the **Figure A6.1** below. Program Office Program Managers (POPM) get approval for these acquisition strategies from the MDA. The POPM may leverage a combination of acquisition pathways. The PE/PM should select the pathway category which best describes the project's supported work. TW support for customers extends beyond the normal acquisition and pathways described in DoDI 5000.02. In those cases, additional options are available. These are Experimentation, Commercial, Training, and Other. The definition of all those categories are listed below the figure.

#### **A6.2. List of TPT Acquisition Pathways and TW support:**

- A6.2.1. Urgent Capability Acquisition (UON, JUON)
- A6.2.2. Middle Tier of Acquisition (Rapid Prototyping/Fielding)
- A6.2.3. Major Capability Acquisition (MS A, B, C, etc.)
- A6.2.4. Software Acquisition (Iterations, Releases)
- A6.2.5. Defense Business System (ATPs)
- A6.2.6. Operations & Sustainment
- A6.2.7. Experimentation/Demonstration
- A6.2.8. Commercial
- A6.2.9. Training
- A6.2.10. FM Cost Tracking Only
- A6.2.11. Other

Figure A6.1. Adaptive Acquisition Framework.



A6.2.11.1. DoDI 5000.02, *Operation of the Adaptive Acquisition Framework*, 23 January 2020

**A6.3. Definitions.** The first six categories are Adaptive Acquisition Pathways options. The final four are other categories of TW customer support.

**A6.3.1. Urgent Capability Acquisition (UON, JUON)** – projects to fulfill urgent existing and/or emerging operational needs or quick reactions in less than 2 years. Details of pathway are in DoDI 5000.81, *Urgent Capability Acquisition*.

**A6.3.2. Middle Tier of Acquisition (Rapid Prototyping/Fielding)** – projects to rapidly develop fieldable prototypes within an acquisition program to demonstrate new capabilities and/or rapidly field production quantities of systems with proven technologies that require minimal development. Details of pathway are in DoDI 5000.80, *Operation of the Middle Tier of Acquisition (MTA)*.

**A6.3.3. Major Capability Acquisition (MS A, B, C, etc.)** – projects to acquire and modernize military unique programs that provide enduring capability. Details of pathway are in DoDI 5000.85, *Major Capability Acquisition (MCA)*.

A6.3.4. **Software Acquisition (Iterations, Releases)** – projects to facilitate rapid and iterative delivery of software capability (e.g., software-intensive systems and/or software-intensive components or sub-systems) to the user. Details of pathway are in DoDI 5000.87, *Operation of the Software Acquisition Pathway*.

A6.3.5. **Defense Business System (ATPs)** – projects to acquire information systems that support DoD business operations. Details of pathway are in DoDI 5000.75, *Business Systems Requirements and Acquisition*.

A6.3.6. **Operations & Sustainment** – projects that have transitioned from Urgent Capability, Middle Tier and Major Capability Acquisition pathways.

A6.3.7. **Experimentation/Demonstration** – projects not associated with an Adaptive Acquisition Pathway. These projects may be an Experiment or Demonstration (see 96TWH99-101 definitions). Examples include, AFRL test support or Emerald Flag.

A6.3.8. **Commercial** – projects supporting Commercial entities, not associated with an Adaptive Acquisition Pathways or Experimentation.

A6.3.9. **Training** – projects supporting proficiency and continuation activities. This category is generally associated with Type Work 5-Training.

A6.3.10. **FM Cost Tracking Only** – Projects created by FM for tracking costs only.

A6.3.11. **Other** – projects not better described by any category describe above.

## Attachment 7

### MAJOR AND SPECIFIC TEST TYPE CATEGORIES

#### A7.1. Major and Specific Test Type Categories.

**A7.2. TPT Definitions for Specific Test Types subdivided by Major Test Type.** These are based on DoDI5000.89\_DAFI99-103. These are only selected for Type Work 2-Test and 3-Test Support.

**A7.3. Major Test Type – the three major Test types, *Developmental Test, Operational Test and Specialized Test*.** In TPT these three type categories are broken down into Specific Test Type categories.

**A7.4. Specific Test Type – Major Test Type categories have a variety of specific test type categories that may be selected.** These definitions are primarily described throughout DoDI5000.89\_DAFI99-103 and are consolidated below based on how TPT has categorized them by Major Test Type.

#### A7.5. Developmental Test.

A7.5.1. **DT&E** - T&E conducted to evaluate design approaches, validate analytical models, quantify contract technical performance and manufacturing quality, measure progress in system engineering design and development, minimize design risks, predict integrated system operational performance (effectiveness and suitability) in the intended environment, and identify system problems (or deficiencies) to allow for early and timely resolution. DT&E includes contractor testing and is conducted over the life of the system to support acquisition and sustainment efforts. ( DoDI5000.89\_DAFI99-103, glossary)

A7.5.1.1. **Qualification Test and Evaluation (QT&E)** - tailored type of DT&E performed by the LDTO primarily for commercially available -off-the-shelf items, non-developmental items, and government furnished equipment. ( DoDI5000.89\_DAFI99-103, paragraph 5.3.a. (1) (a))

A7.5.1.1.1. For Defense Business Systems and information technology systems, QT&E validates the product integrates into the intended environment and meets documented functional, non-functional, cybersecurity requirements, cyber resiliency requirements, and performance standards.

A7.5.1.2. QT&E includes the following test segments: System Integration Test, Data Management Evaluation, System Operability Evaluation, Performance Evaluation Test, Cyber T&E, Regression Test, and User Acceptance Test.

**A7.5.2. Production-Related Testing** – Covers several test types. These include: *First Article Test, Lot Acceptance Test, Pre-Production Qualification tests; Production Qualification tests, and Production Acceptance T&E*. These related tests are below. (DoDI5000.89\_DAFI99-103, paragraph 5.3.a. (1) (b))

A7.5.2.1. **First Article Test** - Production testing that is planned, conducted, and monitored by the materiel developer. First article test includes pre-production and initial production testing conducted to ensure that the contractor can furnish a product that meets the established technical criteria. ( DoDI5000.89\_DAFI99-103, glossary)

A7.5.2.2. **Lot Acceptance Test (LAT)** - A test based on a sampling procedure to ensure that the product retains its quality. No acceptance or installation should be permitted until this test for the lot has been successfully completed. (DoDI5000.89\_DAFI99-103, glossary)

A7.5.2.3. **Pre-Production Qualification Test** - The formal contractual tests that ensure design integrity over the specified operational and environmental range. These tests usually use prototype or preproduction hardware fabricated to the proposed production design specifications and drawings. Such tests include contractual reliability and maintainability demonstration tests required prior to production release. (DoDI5000.89\_DAFI99-103, glossary)

A7.5.2.4. **Production Qualification Test** - A technical test conducted prior to the full rate production decision to ensure the effectiveness of the manufacturing processes, equipment, and procedures. These tests are conducted on a number of samples taken at random from the first production lot, and are repeated if the manufacturing process or design is changed significantly, or when a second source is brought on line. (DoDI5000.89\_DAFI99-103, glossary)

A7.5.2.5. **Production Acceptance Test** - A technical test conducted prior to the full rate production decision to ensure the effectiveness of the manufacturing processes, equipment, and procedures. These tests are conducted on a number of samples taken at random from the first production lot, and are repeated if the manufacturing process or design is changed significantly, or when a second source is brought on line. (DoDI5000.89\_DAFI99-103, glossary)

A7.5.3. **Live Fire Test and Evaluation (LFT&E)** - Testing that provides timely, rigorous, and credible vulnerability or lethality T&E of “covered” systems as they progress through system development or a major system modification that affects survivability. (DoDI5000.89\_DAFI99-103, paragraph 6.3. (1))

A7.5.4. **Foreign Military Sales (FMS)** - In accordance with Defense Security Cooperation Agency 5105.38-M, Security Assistance Management Manual, and AFI 63-101/20-101, testing associated with Foreign Military Sales acquisition shall meet the intent of DoD regulations and other applicable United States Government procedures for conducting T&E activities, affording the foreign purchaser the same benefits and protection that apply to all DoD procurement efforts. (DoDI5000.89\_DAFI99-103, paragraph 3.8.a.)

A7.5.5. **Cyber Testing** - The testing of systems and sub-systems that operate in the cyberspace domain, and the access pathways to such systems that are part of DoD weapon systems. Cyber testing includes cybersecurity testing (with associated Risk Management Framework processes) and cyber resiliency testing. (DoDI5000.89\_DAFI99-103, glossary)

## **A7.6. Operational Test.**

A7.6.1. **Initial Operational Test and Evaluation (IOT&E)** - Is the primary OT&E of a system before Full Rate Production and Full Deployment, and is conducted only by AFOTEC. IOT&E determines if operational requirements and critical operational issues have been satisfied and assesses system impacts to peacetime and combat operations. (DoDI5000.89\_DAFI99-103, paragraph 6.2.f.)

**A7.6.2. Qualification Operational Test and Evaluation (QOT&E)** - Tailored type of OT&E performed on systems for which there is little to no Research, Development, T&E-funded development effort. Conducted only by AFOTEC, Qualification Operational T&E is used to evaluate military-unique portions and applications of commercially available off-the-shelf items, non-developmental items, and government-furnished equipment for military use in an operational environment. (DoDI5000.89\_DAFI99-103, paragraph 6.2.g.)

**A7.6.3. Follow-on Operational Test and Evaluation (FOT&E)** - Is the continuation of OT&E after IOT&E, Qualification Operational T&E, or MOT&E, and is conducted only by AFOTEC. It answers specific questions about unresolved Critical Operational Issues and test issues; verifies the resolution of deficiencies or shortfalls determined to have substantial or severe impact(s) on mission operations; or completes T&E of those areas not finished during previous OT&E. AFOTEC reports document known requirements for Follow-on Operational T&E. (DoDI5000.89\_DAFI99-103, paragraph 6.2.h.)

**A7.6.4. Force Development Evaluation (FDE)** - is a type of OT&E performed by OTOs in support of acquisition program hardware and software fielding decisions and milestones, to include sustainment or upgrade fielding activities. An FDE may be used in-lieu-of an IOT&E or FOT&E to support production decisions in those instances where AFOTEC non-involves in the operational testing of an acquisition program on T&E oversight. FDE may be applied to other operational test purposes including verifying resolution of previously identified system deficiencies (pre-or post-production/fielding); evaluating the system's performance of potential foreign acquisitions; evaluating "blue systems" capabilities against new or modified threats; or evaluating the military application of commercially available off-the-shelf (COTS) items, non-developmental items (NDI), and government-furnished equipment (GFE). (DoDI5000.89\_DAFI99-103, paragraph 6.2.i.)

**A7.6.5. Multi-Service Operational Test and Evaluation (MOT&E)** - Is Operational T&E (IOT&E, Qualification Operational T&E, Follow-on Operational T&E, or FDE) conducted by two or more Service OTOs for systems acquired by more than one Service. MOT&E is conducted in accordance with the T&E directives of the lead OTO, and as agreed in a Multi-Service Operational Test memorandum of agreement. Refer to the memorandum of agreement on MOT&E coordinated and maintained by AFOTEC. A copy of the MOT&E memorandum of agreement is available by email if a request is sent to: "[AFOTEC.A5A8.Workflow@us.af.mil](mailto:AFOTEC.A5A8.Workflow@us.af.mil)." If MAJCOMs are involved in Multi-Service testing without AFOTEC, they should use this memorandum of agreement as a guide. (DoDI5000.89\_DAFI99-103, paragraph 6.2.j.)

**A7.6.6. Tactics Development and Evaluation (TDE)** - Is a type of operational testing conducted by OTO to refine doctrine, system capabilities, and Tactics, Techniques, and Procedures (TTP) throughout a system's life cycle in accordance with AFMAN 11-260, Tactics Development Program. Tactics Development and Evaluations normally identify non-materiel solutions to problems or evaluate better ways to use new or existing systems. (DoDI5000.89\_DAFI99-103, paragraph 6.2.k.)

**A7.6.7. Weapons Systems Evaluation Program (WSEP)** - is an Air Force MAJCOM or STARCOM-conducted test program that provides a tailored end-to-end operational evaluation of fielded weapons systems and their support systems using realistic combat scenarios. The evaluation should characterize system performance and tactics, techniques, and procedures against changing operational requirements and threats to support the requirements development process. The Weapons System Evaluation Program also conducts investigative firings to revalidate capabilities or better understand munitions malfunctions. (DoDI5000.89\_DAFI99-103, paragraph 6.2.q)

**A7.6.8. Operational Utility Evaluation (OUE)** - Evaluations of military capabilities conducted to demonstrate or validate new operational concepts or capabilities, upgrade components, or expand the mission or capabilities of existing or modified systems. AFOTEC, MAJCOMs, or STARCOM may conduct OUEs whenever a dedicated OT&E event is required, but the full scope and rigor of a formal IOT&E Qualification Operational Test and Evaluation, FOT&E, or FDE is not appropriate or required. Operational Utility Evaluations may be used to support operational decisions (e.g., fielding a system with less than full capability) or acquisition-related decisions (e.g., low-rate production) when appropriate throughout the system. Operational Utility Evaluations will not be used when IOT&E, Qualification Operational Test and Evaluation, FOT&E, or FDE are more appropriate per existing guidance and definitions. (DoDI5000.89\_DAFI99-103, paragraph 6.2.l.)

**A7.6.9. Ops Demo** - informs decision-maker whether to transition from a rapid prototyping effort, to a rapid fielding effort, to a follow-on program; or, in a rapid fielding program, to start initial production. (DoDI5000.89\_DAFI99-103, paragraph 4.3.d.)

**A7.6.10. Operational Assessment (OA)** - A test event that is conducted before initial production units are available and incorporates substantial operational realism. An analysis of progress toward operational capabilities made by an Operational Test Organization, with user support as required, on other than production systems. The focus of an operational assessment is on significant trends noted in development efforts, programmatic voids, areas of risk, adequacy of requirements, and the ability of the program to support adequate operational testing. Operational assessments may be made at any time using technology demonstrators, prototypes, mockups, engineering development models, or simulations, but will not substitute for the dedicated Operational Test and Evaluation necessary to support full production decisions. (DoDI5000.89\_DAFI99-103, glossary)

**A7.6.11. Early Operational Assessment (EOA)** - An operational assessment conducted before Milestone B. An EOA assesses the design approach sufficiently early in the acquisition process to assure it has the potential to fulfill user requirements. (DoDI5000.89\_DAFI99-103, glossary)

**A7.6.12. Sufficiency of Test Review (SOTR)** - For some programs of limited scope and complexity, system DT or integrated developmental and operational test events may provide adequate test data to support fielding decisions. In these situations, the lowest appropriate level of required OT may consist of a review of existing data rather than a separate, dedicated operational test event. (DoDI5000.89\_DAFI99-103, paragraph 6.2.o.)

### A7.7. Specialized Test.

A7.7.1. **Advanced Technology Demonstration** - Air Force Research Laboratory-funded, MAJCOM or SSC-sponsored development efforts that demonstrate the maturity and potential of advanced technologies for enhancing military operational capabilities. (DoDI5000.89\_DAFI99-103, paragraph 6.2.s, [Table 3](#) & AFI 61-101)

A7.7.2. **Computer Network Attack (CNA) Testing** - Demonstrates through functional, independent, performance, and environmental dependency testing that the Capability Information Operations Functions (CIOF) properly implement the Information Operations functional requirements. (DoDI5000.89\_DAFI99-103, References see DoDI O-3600.03, Technical Assurance Standard (TAS) for Computer Network Attack 633 (CNA) Capabilities)

A7.7.3. **Electronic Warfare Integrated Reprogramming (EWIR)** - Process intended to produce and deliver software/hardware changes to electronic equipment used to provide awareness and response capability within the electromagnetic spectrum. May require changes in Tactics, Techniques, and Procedures, equipment employment guidance, aircrew training and training devices (threat simulators and emitters). Provides guidance for test / fielding of mission data changes, Operation Flight Program changes, or minor hardware changes that comply with the guidance in AFI 63-101/20-101 concerning modifications. (DoDI5000.89\_DAFI99-103, paragraph 6.2.s. [Table 3](#) & AFI 10-703)

A7.7.4. **Emission Security (EMSEC) Assessment** – or TEMPEST Assessment. Assesses against the requirement to control the compromise of classified electronic emissions. (DoDI5000.89\_DAFI99-103, paragraph 6.2.s. [Table 3](#)) Air Force Systems Security Information Management (AFSSI) 7700, Emission Security, AFSSI 7702, Emission Security Countermeasures Reviews

A7.7.5. **Foreign Comparative Testing** – (FCT) is an OSD-sponsored program for T&E of foreign nations' systems, equipment, and technologies to determine their potential to satisfy validated United States operational requirements. (DoDI5000.89\_DAFI99-103, paragraph 6.2.s. [Table 3](#))

A7.7.6. **Joint Capability Technology Demonstrations (JCTD)** - Exploits maturing technologies to solve important military problems and to concurrently develop the associated Concept of Operations to permit the technologies to be fully exploited. Emphasis is on tech assessment and integration rather than development. (DoDI5000.89\_DAFI99-103, paragraph 6.2.s. [Table 3](#))

A7.7.7. **Joint Interoperability Test and Certification** - Required certification for net-readiness prior to a system being placed into operation. Must be preceded by Air Force System Interoperability Testing, formal Service-level testing to determine the degree to which AF systems which employ tactical data links conform to appropriate DoD MIL-STDs. (DoDI5000.89\_DAFI99-103, paragraph 6.2.s. [Table 3](#))

A7.7.8. **Joint Test and Evaluation** (only applies to non-acquisition programs) - This program develops, tests and validates non-material solutions of fielded and soon to be fielded systems. Joint T&E provides feedback to the acquisition community; however, it does not directly support system acquisition. AFJO is designated the Operational Test Agency to administer and execute tests within the AF Joint T&E Program, including Joint Tests, Joint Feasibility Studies, Quick Reaction Tests, and Collaborative Joint Tests. (DoDI5000.89\_DAFI99-103, paragraph 6.2.s. [Table 3](#))

A7.7.9. **Test of Training Systems** - Training devices should be considered part of the system under test and must also undergo DT and OT. To ensure crew training devices provide accurate and credible training throughout their life cycles, AFI 16-1007, Management of Air Force Operational Training Systems, gives direction and guidance for using the simulator certification and simulator validation processes. (DoDI5000.89\_DAFI99-103, paragraph 6.2.r.).

A7.7.10. **Test of Urgent Needs** - Quick reaction capability for satisfying near-term urgent warfighter needs. (DoDI5000.89\_DAFI99-103, paragraph 6.2.s. [Table 3](#))

A7.7.11. **Research and Developmental Test and Evaluation** - The type of funding appropriation (3600) intended for research, development, test, and evaluation efforts. **Note:** The term “research and development” broadly covers the work performed by a government agency or the private sector. “Research” is the systematic study directed toward gaining scientific knowledge or understanding of a subject area. “Development” is the systematic use of the knowledge and understanding gained from research for the production of useful materials, devices, systems, or methods. Research, Developmental, Test, and Evaluation includes all supporting test and evaluation activities. (DoDI5000.89\_DAFI99-103, glossary)

A7.7.12. **Unified Capability Certification** - Certifies interoperability and information assurance for Unified Capabilities (defined as integration of voice, video, and/or data services delivered ubiquitously across a secure and highly available network infrastructure, independent of technology). ACC appoints the Air Force Unified Capabilities test organization responsible for testing technologies meeting the definition. (DoDI5000.89\_DAFI99-103, paragraph 6.2.s. [Table 3](#)).