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Test and Evaluation

TEST PROJECT MANAGEMENT

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This Edwards Air Force Base Instruction (EDWARDSAFBI) implements Air Force Instruction (AFI) 99-103, *Capabilities-Based Test and Evaluation*, and AFI 99-103, Air Force Materiel Command Supplement (AFMCSUP), *Capabilities-Based Test and Evaluation*. It provides informational guidance on management of Test and Evaluation projects. It applies to all 412 Test Wing (TW) organizations managing or supporting 412 TW test projects. This instruction does not require tiers at or below the Wing level. Waiver authority for this instruction is the 412th Test Wing Commander. This publication may not be supplemented or further implemented/extended. Refer recommended changes and questions about this publication to the OPR listed above using the AF Form 847, Recommendation for Change of Publication; route AF Forms 847 from the field through the appropriate chain of command. Ensure that all records created as a result of processes described in this publication are maintained in accordance with Air Force Manual (AFMAN) 33-363, Management of Records, and disposed of in accordance with Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS). The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force.

SUMMARY OF CHANGES

This document has been substantially revised and must be completely reviewed. Major changes include the title, the implementing instruction, and the addition of an overview that describes the 412 TW project management system in **Chapter 1**, revisions to the Roles and Responsibilities, and a completely revised description of project phases in **Chapter 3**.

1. Test Project Management Overview

1.1. Overview. 412 TW Test Project Management is a formal, standardized approach to managing test projects at the 412 TW. The goal of Test Project Management is the reliable, cost effective, and timely delivery of Test & Evaluation (T&E) project content and deliverables to meet customer requirements. Test Project Management is defined as the workforce, project management methods, processes, procedures, tools, metrics, and training required to plan, execute, and deliver test project objectives on time and on cost, in support of the 412 TW T&E mission.

1.1.1. The workforce consists of personnel trained and proficient in the application of project management methods, tools, processes, and procedures to effectively manage projects to successful completion.

1.1.2. Project management methods are recognized industry standard approaches to planning and managing project schedule, content, and cost. The 412 TW has implemented Critical Chain Project Management (CCPM) as the standard approach to planning and executing project schedules and multi-project portfolios.

1.1.3. TW standard project management processes, procedures, and tools are applied to effectively and consistently manage projects across the organization and establish a common basis for training the workforce. Using this approach, leaders are provided with project information using a common set of terms, formats, and business rules to facilitate communication of project status and issues and support effective decision making across projects. Standard metrics are used to help evaluate project status and overall performance trends.

1.1.4. Standard initial, recurring, and delta training is provided to help establish and maintain a high level of workforce proficiency to successfully and reliably deliver project results that meet customer objectives.

2. Roles and Responsibilities

2.1. 412 Test Wing Commander (412 TW/CC) has ultimate responsibility for providing resources and ensuring reliable delivery of project results. The TW Commander conducts periodic Project Management Reviews (PMRs) to receive project status updates.

2.2. Director, Test Management Division (TMG).

2.2.1. Overall responsibility for the adherence to Test Project Management across the 412 TW.

2.2.2. Provides resources to implement, sustain, and improve project management within the TW.

2.2.3. Maintains a workforce proficient in formal project management.

2.2.4. Serves as the TW program manager (1101/63AX) Organizational Senior Functional (OSF).

2.2.5. Attends periodic TW PMRs.

2.3. Chief, Project Management Branch (TMGG).

- 2.3.1. Oversees training and equipping of the project management workforce for proficient application of Test Project Management.
- 2.3.2. Implements and improves Test Project Management to effectively support the needs of the mission.
- 2.3.3. Fill and manage Director of Project (DP) and Project Manager (PM) positions in collaboration with Combined Test Force (CTF) directors and group commanders based on qualifications and workforce management considerations.
- 2.3.4. Represents the 412 TW in Executing Test Organization (ETO) assignments according to The Test Support Request Staffing Process.
- 2.4. Chief, Resource Planning and Analysis Branch (TMGB).
 - 2.4.1. Collaborate with the Project Management Branch chief to ensure efficient, coordinated execution of the Program Introduction/Statement of Capability (PI/SOC) Process.
 - 2.4.2. Fills and manages Business Leader and Program Analyst positions in collaboration with CTF directors.
- 2.5. Combined Test Force (CTF) Director (or equivalent).
 - 2.5.1. Ensure projects for which their organization has been identified as the 412 TW ETO are planned and executed to successfully meet customer objectives.
- 2.6. Directors of Projects (DP).
 - 2.6.1. Serve as the CTF deputy director and are responsible for consistent, reliable delivery of successful project results.
 - 2.6.2. Oversee application of project management processes, procedures, and tools to effectively manage test projects.
 - 2.6.3. Ensure initial and recurring training is provided and proficiency in application of project management processes, procedures, and tools is maintained.
 - 2.6.4. Resolves issues to keep projects on-track. Elevates issues as necessary to achieve timely resolution.
 - 2.6.5. Work with the Project Management Branch Chief on the assignment of personnel to project management positions based on Test Project Management proficiency and workforce management considerations.
 - 2.6.6. Collaborate with TMGG on project management improvements to enhance project management value and performance.
 - 2.6.7. Review project documentation such as the test concept, statements of capability (SOC), project plan and other documents for completeness, currency, and accuracy.
 - 2.6.8. Coordinate development of a periodic Project Management Review (PMR) briefing presented to the 412 TW commander. The standard PMR template shall be used.
 - 2.6.9. Coordinate all new project work with TMGG in accordance with the ETO process.
- 2.7. The Business Leader (BL).

2.7.1. CTF (or equivalent) focal point for coordinating and managing squadron resource requirements, manpower, and funding.

2.7.2. Assists the PMs in estimating project resources, evaluating cost estimates.

2.7.3. Manages the squadron flying hour program.

2.8. Supervisory Project Managers, Platform Leads.

2.8.1. Supervise and mentor PMs within their project portfolio in the effective use of Test Project Management to achieve results.

2.8.2. Monitor and improve PM proficiency to include timely completion of training.

2.8.3. Ensure timely, cost effective planning and execution of all projects to successfully deliver results according to agreed commitments with the customer.

2.8.4. Ensure scheduling and execution of multi-project portfolios within the capacity constraints of CTF assets and resources.

2.8.5. Verify Consolidated Project List (CPL) data is accurate and current.

2.8.6. Assess the Test Project Management system using the appropriate Local Self Assessment Communicator (LSAC) to identify deficiencies and resolutions in accordance with the Commanders Inspection Program (CCIP).

2.9. Project Managers (PM).

2.9.1. Develop a project plan using Test Wing standard project management processes, procedures, and tools.

2.9.2. Collaborate with the responsible engineer and other key stakeholders (ops, maintenance, logistics, customers) to develop and execute a project plan for each project.

2.9.3. Document the project plan in a Statement of Capability (SOC) if required by the project and coordinate according to the SOC process.

2.9.4. Execute project activities in accordance with the project schedule.

2.9.5. Coordinate action to resolve emerging risks and issues, and communicate status to stakeholders as the project executes.

2.9.6. Provide timely and current updates to information maintained in the TW standard cost and schedule tools and in the Consolidated Project List (CPL).

2.9.7. Build PMR briefings using the TMG provided standard template to support TW PMRs.

2.10. Program Analysts (PA).

2.10.1. Work with the PM to coordinate meetings required by the SOC process, analysis and entry of Cost and Resource Estimates (C&RE) received from support organizations, and development of the SOC.

2.10.2. Detailed PA responsibilities are outlined in EDWARDSAFBI 16-100, *The Test Support Request Staffing Process*.

3. Procedures.

3.1. **Project Phases.** All project planning and execution is conducted to support and enable the effective and efficient execution of the T&E technical and safety processes required to safely execute tests and produce deliverables and/or services that meet project objectives as agreed to in the project plan/SOC. There are five process groups of the project life cycle (see Figure 3.1): Initiate, Plan and Provision, Execute, Monitor and Control, and Close.

3.1.1. Initiate the Project. A test project begins with the acceptance of the project through the ETO process, following receipt of a customer need. The customer may express the need in several different ways including a formal PI. The PM will follow the ETO designation process, obtain a Job Order Number and advanced customer funding, and assemble a core team. If the decision is made not to support a project, a non-support letter is generated, approved by the Wing Commander, and delivered to the customer. The PM will ensure funding is received from the customer and placed on a JON before project activities are conducted.

3.1.2. Plan and Provision the Project. Once the ETO designation has been made, the PM will lead project planning after a JON is established and initial funding is received from the customer. The SOC process is followed in this phase.

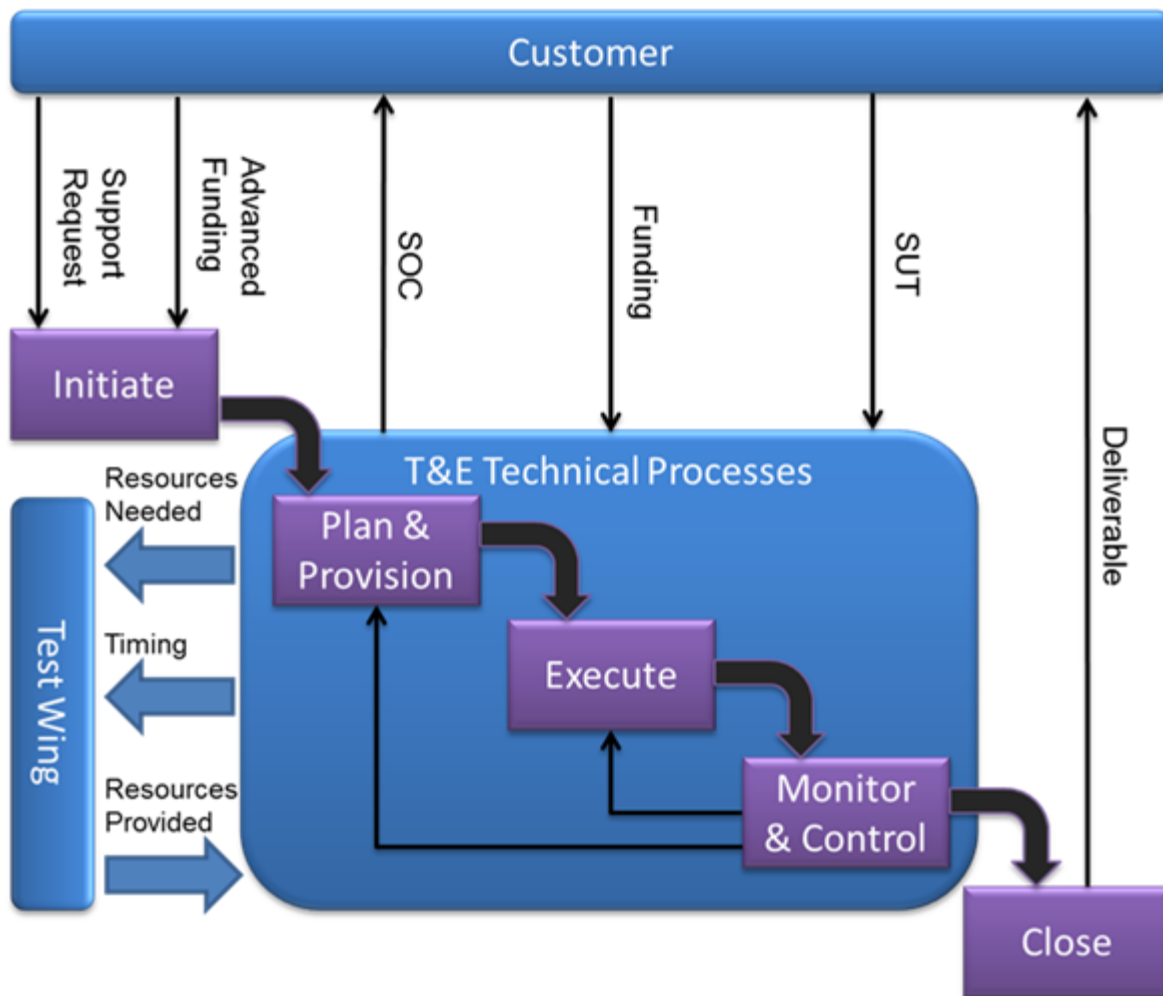
3.1.2.1. The PM will use TW standard project management tools, processes, and procedures to develop a project plan for any project, even if covered by an overarching or Level of Effort SOC.

3.1.2.2. The PM, in close collaboration with the project technical lead and other key stakeholders (e.g., instrumentation, ops, maintenance), will develop project work scope. Project objectives, major deliverables, work scope, assumptions, constraints, schedule, resources, cost estimates, project budget, capability limitations, and risk statements are identified by the team and documented in the project plan.

3.1.2.3. If multiple projects occur within the same timeframes, they must be planned to avoid overscheduling of common resources and assets. This involves negotiating with customers and resource providers to establish priorities and feasible timeframes.

3.1.2.4. The supervisory PM and DP will review and approve project plans and ensure projects are executable within manageable levels of risk. Customer concurrence establishes the project content, schedule, and cost baseline and the agreement to reimburse the TW for the project work. Once the SOC is signed by the customer and project funding is received, the PM will work with the team, support organizations, and external suppliers to secure the necessary resources and assets required for project execution.

Figure 1. Project Management Process.



3.1.3. Execute the Project. The PM will use the TW standard project management scheduling system, work with the technical lead, the rest of the project team, and other stakeholders to assign resources and execute project activities in accordance with the agreed project schedule. Resource conflicts across projects will be resolved according to priorities and in coordination with the Platform Lead and/or the DP as required. Project cost is managed according to the project budget as well as available funding using the TW cost management tool.

3.1.4. Monitor and Control the Project. The PM will monitor progress by using the schedule and cost management tools and processes as well as maintaining frequent communication with the team and other stakeholders. The PM will update project management cost and schedule tools often enough to reflect current project status and respond to emerging risks and issues that occur during execution. The PM will report status, risks, and issues through the management chain as required, ensuring leadership is proactively informed to facilitate timely resolution. Adjustments will be made and management actions taken in coordination with stakeholders to keep the project on-track. The project plan will be revised as necessary in response to issues that occur during execution. If revisions cause a violation in the cost, schedule, or content agreement, the

PM will, if appropriate for the situation, coordinate a project rebaseline with key stakeholders. Accurate and timely status will be maintained in the CPL.

3.1.5. Close the Project. The PM, in collaboration with the technical lead, will confirm all project objectives identified in the project plan/SOC are met and deliverables provided to the customer. The PM will place JONs in the appropriate phase and complete project closeout analysis to capture information needed for trend data and metrics. The PM will document project completion appropriately within the cost and schedule tools as well as the CPL.

3.2. Test Acceleration (TA) or Test Surge (TS). The 412 TW may be directed to perform TA or TS activities (real world or exercise) in direct support of combat elements or wartime material support in the field. In these cases, the core test and evaluation processes still apply; however, special consideration is given to the acceleration of every activity wherever possible. The PM will follow the Test Wing TA and TS checklists which outline applicable notification, planning, execution and reporting procedures for all real world or exercise TA and TS activities in accordance with EDWARDSAFBI 99-106, *Test Acceleration/Test Surge*.

3.3. Improving Project Management. The 412 TW will apply continuous process improvement (CPI) to the TW implementation of formal test project management. The Test Management Division (TMG) will employ various methodologies and tools under Air Force Smart Operations for the 21st Century (AFSO21) to improve project outcomes, efficiency, and performance.

CARL E. SCHAEFER, Brigadier General, USAF
Commander

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFI 99-103, *Capabilities-Based Test and Evaluation*, 6 April 2017

AFI 99-103, AFMCSUP, *Capabilities-Based Test and Evaluation*, 29 December 2016

AFMAN 33-363, *Management of Records*, 1 March 2008

EDWARDSAFBI 16-100, *The Test Support Request Staffing Process*, 3 December 2013

EDWARDSAFBI 99-106, *Test Acceleration/Test Surge*, 19 December 2013

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*

Abbreviations and Acronyms

AFTC—Air Force Test Center

AFSO21—Air Force Smart Operations for the 21st Century

C&RE—Capability and Resource Estimate

CCPM—Critical Chain Project Management

CPI—Continuous Process Improvement

CTF—Combined Test Force

DP—Director of Projects

ETO—Executing Test Organization

FOT&E—Follow-on Test and Evaluation

IOT&E—Initial Operational Test and Evaluation

ITF—Integrated Test Force

JON—Job Order Number

OPR—Office of Primary Responsibility

PA—Program Analyst

PM—Project Manager

PMR—Project Management Review

ROM—Rough Order of Magnitude

SOC—Statement of Capability

TA—Test Acceleration

T & E—Test and Evaluation

412 TW—412th Test Wing

412 TW/TMG—412th Test Wing Test Management Division

412 TW/TMGB—Resource Planning and Analysis Branch

412 TW/TMGG—Project Management Branch

412 TW/TMGS—Special Projects Branch

Terms

Capability and Resource Estimate (C&RE)—A C&RE refers to the functional organization's formal cost estimate. It includes a transmittal letter describing the resources provided, as well as constraints or assumptions associated with the test support request.

Combined Test Force (CTF) (or Integrated Test Force [ITF])—A test force made up of representatives from 412 TW, participating test organizations, Air Force Operational Test and Evaluation Center, using and support commands, other military services (ITF only) and contractors. A CTF (or ITF) is organized for each system undergoing test and evaluation (T&E). CTFs and ITFs are responsible for all aspects of planning, coordinating, managing, flight operations, safety, testing and reporting of T&E and support of initial operational test and evaluation (IOT&E) and follow-on test and evaluation (FOT&E) test programs.

Core Team—The core team refers to a team of key stakeholders involved in project planning (SOC development) and execution. Its members include, but are not limited to, the customer, project manager (PM), responsible engineer (RE), program analyst (PA), and key organizational resource members, as required (e.g., engineering, instrumentation, range, maintenance, etc.).

Executing Test Organization (ETO)—A specific CTF, ITF, etc., assigned by AFTC to accomplish the requested test project.

Job Order Number (JON)—A JON refers to an alpha and/or numeric designation assigned to a project to identify a specific work effort.

Program Introduction (PI) Document—A PI is one form of a Test Support Request provided by a customer to identify a test requirement.

Project—A planned set of activities undertaken to create a deliverable (product or service) that meets specific customer objective(s) and has a defined start and end point.

Project Baseline—Current agreement with the project customer regarding overall project cost, need dates for major deliverables, and content to be provided.

Project Management Review (PMR)—A project status briefing given by the directors of projects to the 412 TW Commander on a rotating basis.

Project Schedule—A time-phased sequence of dependent activities required to meet project objectives by a specified end date.

Resources—The goods and services used to accomplish a project, e.g. money, manpower, equipment, facilities, materials and information and/or technology.

Statement of Capability (SOC)—The official agreement between the 412 TW and the customer; signed by both parties. For a project SOC, the agreement establishes the initial project baseline to include: major and minor deliverables to be provided to the customer, the due date

and top-level schedule, and the estimated costs. Some organizations use a Level of Effort SOC which establishes a baseline for test support, usually updated annually, and the cost of that support.

Test Acceleration (TA)—A new test project that, in support of real-world or exercise activities, requires a quick reaction turnaround time as directed by the 412 TW Commander.

Test and Evaluation (T&E)—A process of assessing technical performance and maturity of a System Under Test to determine whether it is operationally effective, suitable, and survivable for intended use.

Test Concept (TC)—A document generated by the PM that supplements the PI; and completely describes the layout of the test support and other resources needed for a program. Organizations use the TC to determine their support and level of effort required for preparation of the SOC and cost estimates.