

**BY ORDER OF THE COMMANDER
ARNOLD ENGINEERING
DEVELOPMENT COMPLEX**

**ARNOLD ENGINEERING DEVELOPMENT
COMPLEX INSTRUCTION 99-100**

15 APRIL 2015



Test & Evaluation

**TEST & EVALUATION
PROJECT MANAGEMENT**

COMPLIANCE WITH THIS INSTRUCTION IS MANDATORY

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This instruction implements Air Force Policy Directive (AFPD) 99-1, Test and Evaluation Process. It extends the guidance in Air Force Instruction (AFI) 99-103 Capabilities-Based Test and Evaluation and applies to all AEDC personnel. This Instruction outlines the AEDC processes for determining Test and Evaluation (T&E) project requirements; planning, executing, and managing T&E projects; analyzing and reporting on test data; and orchestrating the customer feedback program. This instruction applies to all T&E projects conducted by AEDC, to include Department of Defense (DoD) Agencies and Services, non-DoD government agencies, Foreign Military Sales, and domestic and foreign commercial corporations engaged in aerospace design and development.

Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) AFMAN 33-363, *Management of Records*, and disposed of IAW the Air Force Records Disposition Schedule (RDS) located at the following website: <https://www.my.af.mil/afirms/afirms/afirms/rims.cfm>. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF IMT 847, *Recommendation for Change of Publication*; route AF IMT 847 through the appropriate functional chain of command.

SUMMARY OF CHANGES

This publication has been substantially revised and as such should be reviewed in its entirety.

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1. Background.

1.1. **Introduction.** The Test Operations Division Chief has the primary responsibility on behalf of the AEDC Commander to ensure robust, technically rigorous T&E is executed across the Complex and to ensure that the AEDC test portfolio is appropriately planned, resourced, and executed. The Combined Test Force (CTF) is the AEDC approach for accomplishing that objective. Within the CTF, the Test Manager (TM) is responsible for project orchestration in accordance with the signed Statement of Capability (SOC) or AEDC test contract (required for projects funded by a commercial entity). For commercially funded projects, the assigned TM acts as the Contracting Officer’s (CO) technical liaison. The CO is the primary representative to the commercial entity for all test services accomplished under AEDC test contracts. Only services consistent with the terms of the AEDC test contract can be accomplished. The Test Execution Authority (TEA) serves as the final approval authority for test commencement on a given test project, accepting any residual risks prior to test execution. The specific responsibilities of each of these positions are described in Section 2 below.

1.2. **Test Phases.** AEDC employs a four-phase project lifecycle, as described below.

1.2.1. **Planning.** This phase commences upon initial contact from a Program Office and concludes with an approved SOC or signed commercial test contract. The primary goals of this phase are to collect enough project information to understand the test scope, conduct a first-order feasibility assessment of the test requirements, conduct an initial risk assessment, develop a Rough Order of Magnitude (ROM) cost and schedule of the test, and upon Program Office concurrence prepare the SOC or test contract.

1.2.2. **Design and Fabrication.** This phase commences with acceptance of program funds and/or project creation and concludes when all systems under test, test instrumentation, and other necessary items are ready for installation into the test facility. During this phase, a detailed test plan is generated, technical and safety reviews are conducted, test articles are acquired/prepared, and other required materiel are fabricated as required. Additionally, a thorough assessment of cost, schedule, technical and safety risk is conducted, and risk mitigation plans are developed. Subject to CTF approval as described in para 2.7.5.6.2 below, this phase may begin prior to SOC completion in order to minimize schedule risk.

1.2.3. **Test Execution.** This phase commences with the installation of the system under test, test-unique hardware, and any special instrumentation; it concludes with removal of the aforementioned items. It includes end-to-end instrumentation checks, post-installation system checkout and calibration runs, completion of the test run matrix, collection and validation of test data.

1.2.4. **Analysis and Reporting.** This phase commences upon completion of the test execution phase and continues through delivery of the prescribed Technical Report (TR) to the customer. (In cases where multiple test periods are performed for the same project, this phase may begin upon completion of the initial test period.) See AEDCI 99-10, *Technical Reporting*, for more details on report types and formats.

1.3. **Test Review Process.** A rigorous test planning and review process is an essential ingredient to executing a safe, effective, and technically rigorous test. This process should include a variety of formal and informal meetings and reviews throughout the planning process. As a minimum, the following formal reviews are required:

1.3.1. **Test Strategy Panel (TSP).** This panel, chaired by the Test Operations Division Chief, approves the strategy to be used in discussions with the Program Office at the pre-test conference for all test projects exceeding \$10M in value.

1.3.2. **Technical Review Board (TRB).** This board, chaired by the TEA's Technical Director, reviews test objectives and determines whether the proposed test plan will satisfy those objectives. As a minimum, the TRB reviews the test requirements and primary test objectives and assesses the adequacy of the proposed test design, test techniques, and data analysis. The TRB also ensures that the Environmental Impact Analysis Process (EIAP) has been completed IAW the AEDC Safety, Health, and Environmental (SH&E) Standard A8, *Environmental Impact Analysis Process*. Board membership should include leadership and subject matter experts from both inside and outside the CTF. Board members should be technically qualified to render expert judgments for the technical area being reviewed.

1.3.3. **Safety Review Board (SRB).** This board, chaired by the AEDC Chief of Safety (AEDC/SE) or his/her designee, reviews the test concept to ensure test-unique safety hazards have been identified and mitigated in order to minimize risk to personnel, facilities, the system under test, and other equipment. The product of an SRB is an independently reviewed safety plan and a recommended safety risk level for the TEA. See AFTCI 91-203, *AFTC Test Safety Review Policy*, for detailed information on the test safety review process. Board membership should include leadership and subject matter experts from both inside and outside the CTF. Board members should be technically qualified to render expert judgments for the technical area being reviewed. The SRB Chair may conduct electronic SRBs or waive the SRB altogether if the risk is deemed negligible.

1.3.4. **Test Readiness Review (TRR).** This review, chaired by the TEA, is conducted before commencement of testing, after an extended break in test activity, or following a significant system anomaly. The TRR ensures all preparations for initiating/restarting a test have been completed and known anomalies have not compromised the execution of the test. This review addresses impacts to safety, environment, test schedules, customer milestones, or potential damage to AEDC assets or project test hardware. All reasonable

efforts to minimize risk without compromising the technical quality of the test must be made.

1.3.5. Test Management Review (TMR). This review, chaired by the TEA, is conducted at the completion of each test project to review and discuss planning and execution of the test, discuss any “lessons learned” from the test, and document pertinent information in AEDC’s Information Management System (IMS). Including customer personnel in this review, either in person or via telecom, is highly encouraged.

1.4. Risk Assessment. AEDC employs a risk-based approach to determining the appropriate level of oversight and to identify the TEA for each test project. All SOCs and test contracts will contain preliminary estimates of cost, schedule, performance, and safety risks. The test safety risk will be assessed IAW AFTCI 91-203. The following tables are provided to assist the project team in making the preliminary risk assessments from a cost, schedule, and technical perspective. Note that these tables are intended to be guides vs. prescriptive tools. For instance, a “complex” test that is “routinely performed” need not be assessed as medium risk with respect to cost simply because it is “complex”; rather, the judgment of subject matter experts should be applied to ensure the stated risk level accurately reflects the assessed level of project risk.

Table 1. Cost Risk Assessment Guide

Factor	Low Risk	Medium Risk	High Risk
Test type	Simple	Complex	Very complex
Frequency/familiarity	Routinely performed in this facility	Have done limited testing of this type	Never done this type of test before
Requirement Definition	85% - 100%	60% - 85%	Less than 60%
Test conditions	Center of test facility envelope	Approaching edge test facility envelope	Fringes of test facility envelope or beyond
Contributing estimates	Formal estimates developed from drawings or rigorous project planning	Designs based on sketches	Little or no formal information

Table 2. Schedule Risk Assessment Guide

Factor	Low Risk	Medium Risk	High Risk
Test type	Simple	Complex	Very complex
Frequency/familiarity	Routinely done in this facility	Have done limited testing of this type	Never done this type of test before
System under test maturity	Mature	Developmental	Research
Interface control document	Mature and well defined	Few TBDs	Many TBDs
Requirement Definition	85% - 100%	60% - 85%	Less than 60%
Test conditions	Center of test facility envelope	Approaching edge test facility envelope	Fringes of test facility envelope or beyond
Competing schedule priorities (other tests, facility outages, etc.)	Minimal potential for major schedule conflicts	Some potential for major schedule conflicts	Strong potential for major schedule conflicts

Table 3. Technical Risk Assessment Guide

Factor	Low Risk	Medium Risk	High Risk
Test type	Simple	Complex	Very complex
Frequency/familiarity	Routine	Infrequent	First of a kind
System under test maturity	Mature (aging surveillance program)	Developmental	Research
Requirement Definition	85% - 100%	60% - 85%	Less than 60%
Test conditions	Center of test facility envelope	Approaching edge test facility envelope	Fringes of test facility envelope or beyond
Technical competencies	AEDC personnel possess the relevant technical competencies for the test and are readily available to support	AEDC personnel possess most of the relevant technical competencies for the test and are generally available to support	AEDC personnel lack several of the relevant technical competencies for the test and/or are generally unavailable to support the test
Confidence in pre-test predictions	85% - 100%	60% - 85%	Less than 60%

2. Responsibility and Authority

2.1. The AEDC Commander shall:

2.1.1. Maintain insight into and oversight of all test operations occurring at AEDC.

2.1.2. Serve as the TEA on any project where test safety risk has been assessed as HIGH, if delegated in writing by AFTC/CC IAW AFTCI 91-203.

2.1.3. Approves test surcharges for non-DoD government programs, commercial customers, and foreign military sales programs IAW AEDCI 65-105, *Financial Management*.

2.2. The Test Execution Authority (TEA) shall:

2.2.1. Ensure risk management is integrated and documented into all phases of T&E activities to identify test hazards, mitigating measures and acceptance/rejection of the residual risk.

2.2.2. Review SRB and TRB results during the TRR and accept any residual risks prior to test execution.

2.2.3. Serve as the final approval authority for test execution.

2.2.4. Authorize resumption of testing following any hold or impound IAW AEDCOI 21-2, *Hold and Impoundment*.

2.3. The Test Operations Division Chief shall:

2.3.1. Maintain insight into and oversight of all test operations occurring at AEDC.

2.3.1.1. Ensure all test projects comply with applicable safety, financial, and technical policies.

2.3.1.2. Approve all SOCs, Project Change Agreements (PCA), and Project Deviation Notices (PDN).

2.3.2. Assess potential impact of upcoming test projects on facility requirements, workload, etc.

2.3.2.1. Coordinate test projects that may significantly impact the overall scope of the base test operations and support contract with the base Contracting Office (AFTC/PZ).

2.3.2.2. Coordinate test projects that may require extensive facility modifications with the appropriate divisions to facilitate proper funding, investment, and maintenance planning.

2.3.3. Chair the TSP for test projects exceeding \$10M in value.

2.3.4. Serve as the TEA on test projects where any of the following conditions exist:

2.3.4.1. Test safety risk has been assessed as MEDIUM.

2.3.4.2. Cost, schedule, and/or technical risk have been assessed as HIGH.

2.3.4.3. The Test Operations Division Chief chooses to retain TEA despite LOW risk assessment.

2.3.5. Delegate TEA in writing to the CTF director for any projects in which TEA is not retained at a higher level.

2.3.6. Review and approve training programs for critical test roles.

2.4. The Test Branch Chiefs shall:

2.4.1. Establish and maintain a robust, role-specific training program for assigned personnel.

2.4.1.1. Develop role-specific training plans for assigned Test Managers and Test Engineers

2.4.1.2. Work with the Chief of the Technology, Analysis, and Evaluation Branch to assist in the development of role-specific training plans for analysts.

2.4.1.3. Maintain training records to track and document individual progress through the assigned training plan(s).

2.4.1.4. Certify individual mission readiness for role-specific duties following completion of the corresponding training program.

2.5. The CTF Director shall:

2.5.1. Be responsible for all test operations occurring within their designated portfolio. Maintain records and status of project inquiries for a minimum of two years.

2.5.1.1. Be responsible for cost, schedule and performance of test projects within their designated portfolio.

2.5.2. Add potential test entries/removals to the integrated schedule; identify the test unit, approximate duration, and an assessment of the probability of occurrence IAW AEDCI 21-205, *Tactical Integration Group*.

2.5.3. Review, approve and sign the ROM cost estimate for submission to the customer. Coordinate all ROMs for projects in excess of \$10M and projects with cost, schedule or

performance risks assessed as HIGH with the division chief before submission to the customer.

2.5.4. Review workload submitted with ROMs and SOCs.

2.5.5. Review AEDC test workload forecasts and schedule requirements, investment project plans, and maintenance schedules in order to ensure executability. Assess how the current integrated schedule and workload impacts AEDC's capacity and capability to initially meet the customer's technical and schedule requirements. Ensure adequate capacity exists (e.g., facility, personnel, etc.) to meet customer expectations.

2.5.6. Implement the policies and guidelines established by the Test Operations Division Chief for the management of test projects.

2.5.6.1. Ensure that appropriate project management controls (project reviews, anomaly resolutions, cost management, etc.) are established.

2.5.6.2. Review test projects to ensure that AEDC policies on safety, security, and environmental compliance are being followed.

2.5.6.3. Ensure a TRB occurs for all test projects, including technology projects and other Direct Budget Authority (DBA)-funded tests.

2.5.6.4. Serve as the TEA for all test projects delegated to the CTF Director IAW para 2.3.5 above.

2.5.6.5. Ensure each TRR is documented for each project, as prescribed in this instruction.

2.5.6.6. Ensure the results of each test project are thoroughly documented IAW AEDCI 99-10.

2.5.6.7. Inform the Test Operations and Test Systems Sustainment Division Chiefs, as early as possible, of any test requiring extensive facility modifications to allow proper funding, investment, and maintenance planning.

2.5.6.8. Review the SOC and all subsequent PCAs/PDNs necessary to document changes in test projects prior to forwarding to the Test Operations Division Chief for approval and release to the customer.

2.5.6.9. Authorize test support contractors to commence work on customer orders IAW AEDCI 65-105.

2.5.6.10. Monitor performance of TMs to ensure that the project tasks are consistent with the project requirements and appropriate Air Force instructions. Review documented project comments and ensure appropriate response is taken.

2.5.6.11. Conduct monthly TMR with assigned TMs. Invite the Test Operations Division Chief to all monthly reviews.

2.5.6.12. Ensure requirements are met for all test projects where the customer will directly reimburse the government IAW AEDCI 64-200, *Test Contracts*.

2.5.6.13. Notify the Test Operations Division Chief immediately about technical objective noncompliance or significant technical issues related to the facility or

system under test that arise during the course of the test which are outside of the expectations defined in the TRB.

2.5.6.14. In the absence of a CTF Technical Director, assume the responsibilities described in section 2.6 below.

2.6. The CTF Technical Director shall:

2.6.1. Chair the TRB for all CTF test projects for which the CTF Director has been delegated TEA. Assist the Test Operations Division Technical Director in conducting the TRB for all CTF test projects for which the CTF Director has not been delegated TEA.

2.6.2. Ensure the TRB is accomplished by appropriate technically qualified personnel and is conducted and documented IAW this instruction.

2.6.3. Ensure that TRs identified in the SOC are necessary and adequate to properly assess the experimental effectiveness for all tests. The effectiveness is measured by the execution of the experiment to deliver program-level, decision-quality information. Overall test objectives, methods, figures of merit, success criteria, and results should be assessed in the TRs. Exemptions from delivering TRs must be approved by the Test Operations Division Technical Director.

2.6.4. Review and approve all Quick-Look Reports (QLR) and Letter Reports (LR) and IAW AEDCI 99-10 before release to the customer. (The Test Director on the Field Measurement Team may authorize QLR during deployed operations.)

2.6.5. Conduct a brief review of all TRs with the Test Operations Division Technical Director prior to publication.

2.7. The Test Manager (TM) shall:

2.7.1. Be responsible for the overall programmatic, leadership, and orchestration of the test team from initial test inquiry to completion of the TR.

2.7.2. Serve as the primary point of contact (POC) for all non-commercial customers.

2.7.3. Upon receipt of a customer inquiry or test requirement:

2.7.3.1. Using the AEDC IMS, create a test inquiry to assess the level of information provided and obtain additional information, as needed.

2.7.3.2. Define and document the customer's test requirements.

2.7.3.3. Determine, in conjunction with the assigned Test Engineer and Test Analyst, if the test requirement is best satisfied by AEDC. If not, provide the customer with recommendations for suitable alternative test sites (e.g., other suitable military services or US government agencies), and close out the project inquiry

2.7.3.4. Coordinate with appropriate organizations on current workload plans, capacity/capability limitations, and the integrated schedule in order to make a recommendation to the CTF Director regarding AEDC's ability to satisfy customer requirements.

2.7.3.5. Submit entries as either firm test requirements or tentative test entries during the monthly test integrated schedule meeting (per AEDCI 21-205.) (Note:

Commercial projects shall be accomplished and documented in a contract modification signed by the CO IAW AEDCI 64-200.)

2.7.3.6. Determine project requirements with sufficient detail to initiate ROM and/or SOC planning. For commercial projects, ensure that the planning initiated for the ROM and/or SOC is IAW AEDCI 64-200.

2.7.3.7. Close out inquiry record and direct to the appropriate AEDC process or terminate with no further action.

2.7.4. Prepare a written ROM estimate when a customer requests a quote for test services and sufficient information is available to do a ROM estimate for cost of anticipated services.

2.7.4.1. Request CTF Director's approval to develop a ROM for the test project. IAW AEDCI 65-105, customers must fund ROM preparation costs in excess of \$5,000.

2.7.4.2. Obtain a rate determination based upon project type from the project inquiry system or through direct communications with the customer IAW AEDCI 65-105.

2.7.4.3. Provide the CTF Director early notice of any test requiring extensive facility modifications to allow for proper funding, investment, and maintenance planning.

2.7.4.4. Coordinate all communications with the customer and track progress/expenditures for the ROM activity.

2.7.5. Lead the preparation of a written SOC to document expected cost, schedule, scope, technical performance, and associated risk between AEDC and the customer.

2.7.5.1. Coordinate with the customer to obtain authorization and funding to proceed with the development of a SOC. (Note: If the customer does not want to proceed with SOC development, update and close the test inquiry in the IMS.)

2.7.5.2. Work with customers to determine the required test pace to accomplish the test requirements on time.

2.7.5.3. Request the CTF Resource Advisor (RA) to establish a project Job Order Number (JON).

2.7.5.4. Request inputs for the SOC from the TE, TA, and other subject-matter experts from appropriate AEDC organizations.

2.7.5.5. Lead the test project team in developing the SOC, building the test plan, and tracking the project funding.

2.7.5.6. Obtain an approved SOC and additional funding, as required, prior to commencing the design and fabrication phase.

2.7.5.6.1. Forward the SOC and all PCAs/PDNs to the CTF Director for review en-route to the Test Operations Division Chief for approval. Once approved, forward to the customer for final coordination. (Note: Commercial project SOCs or pending SOC revisions are forwarded through the CTF Director, Division Chief, then to the CO for test contract release to the customer.)

2.7.5.6.2. In the event an approved SOC cannot be obtained in a timely fashion, request CTF Director authorization to commence the design and fabrication phase, provided customer funding is available and authorized. Expenditures in the test execution phase prior to SOC signature must be approved by the Test Operations Division Chief.

2.7.5.6.3. Coordinate the review and obtain approval signatures for all scope changes to the baseline SOC, as required. Provide updates to the integrated schedule IAW AEDCOI 21-205, reflecting any revisions coordinated with the customer.

2.7.5.6.4. In the event the customer or AEDC needs to revise the test cost or schedule, coordinate the planning and request a PCA using the project change process in the AEDC IMS.

2.7.6. Schedule a TRB for each test project.

2.7.6.1. Coordinate the preparation of material to be reviewed by the TRB. Provide the TRB chairman, board members, and any other designated individuals with review material no later than (NLT) one business day prior to commencement of the board.

2.7.6.2. Select and invite board members based on the CTF Technical Director's direction and IAW para 2.5.6.3.

2.7.6.3. Develop a corrective action plan, including schedule for any deficiencies discovered during the TRB. The corrective action plan will be reviewed and approved by the CTF Director prior to completion of the SRB.

2.7.6.4. Ensure TRB proceedings, deficiencies, and corrective actions are documented in an official project file. In the TRR, annotate the status (open or closed) of the TRB deficiencies.

2.7.7. Coordinate with AEDC/SE to schedule and conduct a SRB prior to the scheduled start of testing, per the requirements in the AEDC SH&E Standard A4, *System Safety*.

2.7.7.1. The SRB must be accomplished with sufficient time to correct identified issues without delay to the test schedule.

2.7.7.2. Document the accomplishment of the SRB, the overall risk assessment, and any associated actions assigned in the AEDC IMS.

2.7.8. Schedule and conduct a TRR prior to the scheduled start of testing.

2.7.8.1. Conduct the TRR with sufficient lead time to correct and verify deficiencies prior to scheduled start of testing.

2.7.8.2. Select TRR members based on the CTF Director's direction. Provide the TRR chairman, board members, or other designated individuals with TRR charts prior to commencement of review.

2.7.8.3. The results of the TRR shall be documented on the AEDC Form 905, *Test Operational Readiness Review Record*, and attached to the project in the AEDC IMS.

2.7.9. Actively coordinate test execution.

- 2.7.9.1. Request the CTF RA load the required resources, as specified in the SOC, into the AEDC IMS.
- 2.7.9.2. Track the execution of each activity identified in the SOC.
 - 2.7.9.2.1. For cases where the customer provides incremental funding of a project, ensure funding increments are received in a manner that will prevent work delays.
 - 2.7.9.2.2. Document any funding delays in an email or memo, attach it to the electronic project file in the AEDC IMS, and send a copy to the CTF Director.
- 2.7.9.3. Coordinate communication of technical requirements between AEDC organizations and with the customer.
 - 2.7.9.3.1. Ensure that the work performed is consistent with the project SOC.
 - 2.7.9.3.2. If customer requirements change, coordinate the proposed change with the applicable AEDC organizations and complete a PCA/PDN, as appropriate.
 - 2.7.9.3.3. Discuss photography requirements with the customer. As appropriate, discuss public releasability with the customer.
- 2.7.9.4. Continually assess project cost, schedule, and technical performance.
 - 2.7.9.4.1. Review programmatic and technical status with the CTF Director and customer, as necessary.
 - 2.7.9.4.2. Immediately report any potential cost increases/decreases that warrant revising the SOC.
 - 2.7.9.4.3. Be prepared to discuss any cost, schedule or scope changes with the CTF Director at the monthly TMR.
- 2.7.10. Solicit frequent, detailed feedback from the customer.
 - 2.7.10.1. Discuss the method for obtaining and documenting project issues concerning test support (formal/informal) with the customer as a part of SOC development.
 - 2.7.10.2. After the acceptance of the SOC, but prior to test start, provide the customer with an AEDC Form 801, *Customer Satisfaction Survey*, to be returned to the CTF Director.
 - 2.7.10.3. During lengthy tests, request interim critiques from the customer at regular intervals or as issues arise to assure continuous awareness of project issues.
 - 2.7.10.4. Upon test completion, have the customer complete a final AEDC Form 801.
 - 2.7.10.5. At the post-test meeting, review all feedback with the customer and the applicable AEDC organizations to ensure documented items are accurate.
 - 2.7.10.6. If the AEDC Form 801 is not completed and returned after the post-test meeting, contact the customer and encourage its prompt return.
 - 2.7.10.7. Forward all completed AEDC Forms 801 to the CTF Director for Award Fee input.

2.7.11. Maintain an electronic project folder for all test projects in the AEDC IMS. The project folder will contain all documentation requirements listed in this instruction: test inquiry, ROM, SOC, PCA, PDN, TRB, SRB, TRR, TMR, applicable funding document(s), and AEDC Form(s) 801.

2.7.12. Ensure the project is properly closed out.

2.7.12.1. For commercial projects, notify the CO that the project is complete, provide determination on contract status (close or remain open) and, if applicable, provide the amount of funds available to return.

2.7.12.2. Ensure technical results are out-briefed to a group of technical peers and that the AEDC Commander, Executive Director, Test Operations Division Chief, Test Operations Division Technical Director, CTF Director, and CTF Technical Director are invited.

2.7.12.3. Convene a TMR at the completion of each test. Engage the assistance of personnel from all appropriate organizations to determine action items, due dates, and OPR.

2.7.12.4. Document in the AEDC IMS "Lessons Learned" database any information that is deemed potentially beneficial historical data.

2.8. The Test Engineer (TE) shall:

2.8.1. Work with the CTF Technical Director to characterize project technical objectives, predictions (expectations) of the system under test, and associated experimental success criteria.

2.8.2. Work with the CTF Technical Director and the assigned Test Analyst to determine the analysis products and associated delivery schedule for communicating required information necessary for customer decisions and AEDC document archival.

2.8.3. Coordinate with the CTF Technical Director to define the Technical Reporting deliverables and associated schedule required to satisfy customer needs.

2.8.3.1. Coordinate with the Test Operations Division Technical Director on any SOCs that do not include a TR with detailed experimental analysis.

2.8.4. Support test plan development by writing, reviewing, and participating in the Test Plan Working Group as required.

2.8.4.1. Maximize the use of statistical methods during test planning and risk assessment. Document the statistical approach in the test plan. If a statistically defensible methodology was not utilized, explain the basis for this decision in the test plan.

2.8.4.2. Prepare necessary documentation to comply with safety, security, and environmental regulations during preparation, delivery, and post-delivery activities necessary to meet the requirements of the SOC.

2.8.4.3. Ensure the test plan approval is coordinated with the CTF Technical Director and the customer.

2.8.5. Coordinate with the CTF Technical Director to ensure that the technical objectives defined in the TRB are being met during the course of testing and that any significant issues related to the facility or system under test are being resolved.

2.8.6.1. Review, assess, and report significant test anomalies IAW AEDCOI 21-2 in order to prevent damage to or failure of the system under test or the test facility.

2.8.6.2. Immediately communicate any anomalies related to the system under test, such as component and/or system failures, to the customer or government sponsor for deficiency reporting/watch item list consideration.

2.9. The Test Analyst (TA) shall:

2.9.1. Assist the TM and the TE with developing the ROM and the SOC including determination and translation of the customers' requirements into test requirements that require government and contractor estimates by test project phase. The TA supports the TE to make recommendations, based on the available information, concerning the technical risks and potential risk reduction.

2.9.1.1. Work with the TE, CTF Technical Director and the Technology, Analysis & Evaluation Branch Chief to make recommendations on the analysis approach based on the customer requirements and goals.

2.9.1.2. Support the TE and TM with the development of the test objectives and figures of merit to quantify the success in meeting the objectives.

2.9.1.3. Coordinate with the test customer and TE on overall test goals and objectives and suggest modeling & simulation and historical data, where appropriate, to support the proposed test.

2.9.1.4. Coordinate with the test customer and TE on overall test goals and objectives and ensure that the proposed test meets the goals of the customer.

2.9.1.5. Participate with the TE and TM in technical meetings with the customer.

2.9.1.6. Coordinate with the test customer and TE on test matrix requirements and provide inputs of potential matrix modifications.

2.9.2. Coordinate the technical requirements with the Technology, Analysis & Evaluation Branch and the test support contractor to form the analysis and evaluation team.

2.9.2.1. Lead the analysis and evaluation team to generate analysis products IAW AEDCI 99-10.

2.10. The CTF Resource Advisor (RA) shall:

2.10.1. Notify the TM of customer funds availability so the TM can initiate work authorization.

2.10.2. Establish a project in the IMS based on the input of the TM. Transmit received funding documents to AEDC/FM.2.10.2.1. Establish a project JON, receive the funding document, forward the funding document to AEDC/FM for acceptance and entry into the IMS, and record the project authorization when directed by the CTF Director.

2.10.2.1. If appropriate, ensure that the charges for preparation of the ROM are transferred from the planning JON to the test project JON, IAW AEDCI 65-105.

2.10.2.2. Process materiel requisitions for government-furnished equipment, as directed by the TM.

2.10.3. Verify receipt and acceptance of funding and authorize the expenditure of funds to the level specified by the TM for the project in the IMS. The RA cannot authorize expenditures in excess of funds received.

2.11. The Contracting Officer (CO) shall:

2.11.1. Prepare, administer, and close out AEDC test contracts IAW AEDCI 64-200.

2.11.2. Serve as the primary AEDC interface for all commercial customers.

2.11.3. Receive any customer checks submitted to fund an AEDC test contract, including any subsequent modifications. (If the commercial customer pays via electronic funds transfer, funds are received at DFAS and funds receipt is coordinated between DFAS and AEDC.)

3. Records. The following records shall be maintained or created IAW the requirements of this instruction:

Table 4. Required Records

Required Quality Record	Custodian
Customer Inquiries	CTF Director
C/PAR Database	AEDC/CC
ROM	CTF Director
SOC	CTF Director
Project Change Agreement	CTF Director
Electronic Project Folders	CTF Director

RAYMOND G. TOTH, Colonel, USAF
Commander

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

AFI 91-202_AFMCSUP, *The US Air Force Mishap Prevention Program*, 9 July 2013

AFI 99-103, *Capabilities Based Test and Evaluation*, 26 February 2008

AFMCI 99-103, *Test Management*, 22 November 2004

AFTCI 91-203, *AFTC Test Safety Review Policy*, 30 April 2014

AEDCOI 21-2, *Hold and Impoundment*

AEDCI 21-205, *Tactical Integration Group*

AEDCI 64-200, *Test Contracts*

AEDCI 65-105, *Financial Management*

AEDCI 99-10, *Technical Reporting*

AEDC SH&E Standard A4, *System Safety*

AEDC SH&E Standard A8, *Environmental Impact Analysis Process*

Prescribed Forms

AEDC 801, *AEDC Performance Report*

AEDC 905, *Test/Operational Readiness Review Record*

Terms

Corrective/Preventive Action Request (C/PAR) database -The Complex's central database for managing non-conforming discrepancies.

Commercial Contract—Any corporate entity requiring an AEDC test contract to obtain AEDC test services.

Project Change Agreement (PCA) - A document used to process changes in scope to an approved Statement of Capability.

Project Deviation Notice (PDN) - A document used to process changes in project cost to an approved Statement of Capability that were not driven by a change in test scope.

Rough Order of Magnitude (ROM) - A document that provides an initial cost estimate, usually based on limited information.

Statement of Capability (SOC) - A binding agreement between AEDC and another US Government organization that delineates delineating scope, technical performance, and detailed cost and schedule estimates.

Safety Review Board (SRB) - A formal meeting of an independent group of subject— knowledgeable individuals convened to review the safety plan to ensure known hazards are

identified, eliminated, minimized, or controlled to an acceptable level and to establish the overall risk level.

Test Execution Authority (TEA)—The final approval authority for commencement of test operations on a given test project. The TEA accepts any residual risks prior to test execution.

Test Management Review (TMR)—Convened at the completion of each test to review and discuss planning and execution of the test and document pertinent information for reference purposes in the “Lessons Learned” section of the IMS. While not required, conducting this review with the customer personnel, either in person or via telecom, is highly encouraged.

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 shall be a formal document approved by all the participants and is not to be deviated from without prior approval.

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. The TRB will also ensure that Environmental Impact Analysis Process (EIAP) has been completed IAW the AEDC SH&E Standard A8, *Environmental Impact Analysis Process*.

Test Readiness Review (TRR)—A review conducted before commencement of test operations for new starts and system upgrades, test milestones (e.g., first flight/launch, etc.) or after an extended break in test activity (e.g., transition in acquisition program phase, mishap investigation, etc.). The TRR will ensure all preparations for initiating a test have been completed and known anomalies have not compromised the execution of the test. This review addresses impacts to safety/environment, test schedules, project milestones, or potential damage to AEDC assets or project test hardware. All reasonable efforts to minimize risk must be made.

Test Strategy Panel (TSP) - A panel to recommend the strategy to be used in discussions with the customer at the pre-test conference. The TSP will convene for all test projects exceeding \$10M in value.