

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



**ARNOLD ENGINEERING DEVELOPMENT
COMPLEX INSTRUCTION 99-103**

24 AUGUST 2012
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Test and Evaluation

**ARNOLD AIR FORCE BASE CAPABILITIES
BASED TEST AND EVALUATION**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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(Colonel Michael T. Panarisi)

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This instruction defines the duties of and organizational responsibilities related to AEDC Test Representatives (TESTREPs) and Program Test and Evaluation Experts (PTEs) in supporting Capabilities Based Test and Evaluation (T&E), as required by AFI 99-103, *Capabilities Based Test and Evaluation*, and AFMCI 99-103, *Test Management*. Collaboration and early tester involvement are the cornerstones to achieving Capabilities Based T&E. Integrated test teams (ITTs) are key mechanisms to achieve collaboration and early involvement. Through ITTs, AEDC TESTREPs and PTEs will assist Center Test Authorities (CTAs) and Program Managers (PMs) in determining the levels and types of testing required and understanding the T&E capabilities of AEDC. Additionally, AEDC TESTREPs and PTEs will be knowledgeable of capability gaps or requirements and science and technology initiatives that may require T&E investments and ensure appropriate inputs are provided in AEDC's strategic planning and resource allocation processes.

Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 36-363, *Management of Records*, and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located at <https://www.my.af.mil/afrims/afrims/afrims/rims.cfm> This instruction applies to all AEDC government personnel providing T&E services. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF IMT847, *Recommendation for Changes of Publication*; route AF IMT 847 through the appropriate functional chain of command.

This instruction applies to all T&E projects provided by AEDC to a reimbursable program.

1. Roles and Responsibilities:

1.1. AEDC Director of Plans and Programs (AEDC/XP) shall:

1.1.1. Lead AEDC processes to determine future requirements for T&E services to programs in product and logistics centers and R&D agencies.

1.1.2. Develop AEDC's strategic plan to shape AEDC capabilities -- comprising workforce, test facilities, and infrastructure, for conducting T&E.

1.1.3. Lead the AEDC process for strategic prioritization of capabilities, capability gaps, and associated initiatives.

1.1.4. Lead AEDC's Capability Analysis and Risk Assessment (CARA) process (described in AEDCI 90-700, *Capability Analysis and Risk Assessment*) for near-term resource allocation; development of inputs to AFMC Planning, Programming, Budgeting, and Execution (PPBE) processes; and prioritization of unfunded requirements.

1.1.5. Develop and advocate plans, proposals, and resources for investments for future T&E capabilities and capability improvements, responsible for investment program content and requirements/configuration control through the development of the systems requirements document, at which point execution of investment projects transitions to the Test Systems Division.

1.2. AEDC Test Division Chief shall:

1.2.1. Function as capability owner for T&E capabilities, responsible for planning and executing all activities necessary to provide T&E services to test customers.

1.2.2. Participate in the strategic planning process to develop an optimal capability portfolio to support T&E customers through the near, mid, and long terms.

1.2.3. Act as the Responsible Test Organization (RTO) when so designated.

1.2.4. Provide PTEs to selected programs.

1.3. AEDC Capabilities Integration Branch (AEDC/XPR) Chief shall:

1.3.1. Provide TESTREPs to sponsoring product and logistics centers, R&D agencies, and other test organizations.

1.3.2. Coordinate efforts of TESTREPs to prevent duplication of effort, ensure consistency with AEDC strategic and operational plans, and ensure adherence to AEDC processes.

1.4. Early TESTREP shall:

1.4.1. Act as AEDC liaison to a product or logistics center or R&D agency to define T&E customer requirements for AEDC capability owners.

1.4.2. Coordinate with customer programs on T&E planning and execution.

1.4.3. Develop TESTREP MOA with sponsoring product and logistics centers, R&D agencies, and other test organizations as required.

1.5. Early PTE shall:

- 1.5.1. Act as the working-level liaison to a product or logistics center or R&D agency for a specific program or development effort.
- 1.5.2. Support ITT activities for assigned programs, as described in AFI 99-103.
- 1.5.3. Support development and review of requirements documents when required to support AF/A5R HPTs

2. Description of Activities

2.1. AEDC/XP Director shall:

- 2.1.1. Identify and prioritize capability resource requirements to support future T&E activities in accordance with AFI 99-109.
- 2.1.2. Through the CARA and PPBE processes, allocate resources necessary to meet the T&E mission, and prepare for future T&E customer requirements.
- 2.1.3. Recommend TESTREP assignments to AEDC/CC.
- 2.1.4. Review and coordinate TESTREP MOA through pertinent groups and directorates to AEDC/CC.

2.2. AEDC Test Division Chief, as RTO Lead, shall:

- 2.2.1. Coordinate with Participating Test Organizations (PTOs) to ensure necessary expertise and capabilities are employed to plan and execute customer T&E programs.
- 2.2.2. Ensure T&E plans are coordinated with appropriate test agencies, PTOs, and other stakeholders.
- 2.2.3. Participate in technical review boards, safety review boards, test readiness reviews, configuration control boards, product improvement working groups, and test management councils as required.
- 2.2.4. Ensure that all T&E activities, whether conducted by the RTO or assigned for execution to a PTO, are conducted in accordance with approved test and safety plans and instructions.
- 2.2.5. Ensure that safety concerns, deficiencies, and watch items are tracked and reported in accordance with Technical Order (TO) 00-35D-54, *USAF Deficiency Reporting, Investigation and Resolution*.
- 2.2.6. Provide support to programs for required certifications and milestone decisions.

2.3. AEDC/XPR Chief shall:

- 2.3.1. Assist TESTREPs with identifying programs requiring T&E support.
- 2.3.2. Maintain projected future capability requirements and investment records in the appropriate Center planning database.
- 2.3.3. Recommend TESTREP assignments to AEDC/XP.
- 2.3.4. Review TESTREP products, including draft MOA and process inputs, to ensure consistency with AEDC strategic and operational plans and ensure adherence to AEDC processes.

2.4. Early TESTREP shall:

2.4.1. Coordinate activities with Product Center XRs, CTAs, and/or R&D PMs as required.

2.4.2. Coordinate with AEDC Test Division to identify qualified PTEs for customer programs.

2.4.3. With assistance from the PTE, develop program-specific TESTREP MOAs between AEDC and product and logistics centers, R&D agencies, and other test organizations. Early MOA will address responsibilities in support of specific programs and should be based on MOA templates in AFMCI 99-103.

2.4.4. TESTREPs will support programs and development planning activities as experts in test and not as representatives of any particular test organization. The overarching objective is to make the program successful, not attract/direct work to the parent organization. The TESTREP must be aware of and predisposed to call upon any and all sources of test capabilities to ensure programmatic and technical questions are supported with sufficient and objective test results.

2.4.5. Participate with CTAs and specific programs in activities related to development of Test Strategy, Test and Evaluation Master Plans, T&E requirements identification, and test plan execution.

2.4.6. Advise AEDC leadership, capability owners, and project managers on issues related to near- and long-term support of program customers, AEDC capabilities, capability gaps, and investments necessary for new capabilities and capability improvements.

2.4.7. Provide inputs to the AEDC strategic planning process so that capability gaps and the associated resource requirements are adequately defined.

2.4.8. In coordination with AEDC/XP, AEDC Test Division (TST), 7AEDC Test Systems Division (TTS), and AEDC Maintenance Division (TMN), develop candidate AEDC inputs to the Test Investment Planning and Programming (TIPP) process and Central Test and Evaluation Investment Program (CTEIP) for future test capabilities and capability improvements and advocate these inputs to the respective governing bodies at AFMC and the Office of the Secretary of Defense.

2.4.9. Support capability owners in providing inputs to the CARA process for near-term resource allocation, development of PPBE process submissions, and prioritization of unfunded requirements.

2.5. Early PTE shall:

2.5.1. Assist the TESTREPs in developing TESTREP MOAs.

2.5.2. Advise the TESTREPs on issues related to test resource requirements, including workforce, test facilities, infrastructure, and data processing and management tools.

2.5.3. Participate in T&E customer program activities in which emerging test requirements may be identified and coordinate future requirements with TST, TTS, TMN and AEDC/XPR (through TESTREPs).

2.5.4. For program T&E efforts assist the ITTs with technical, safety, and test readiness reviews, as required. ITT responsibilities are defined in AFI 99103.

2.5.5. Assist the ITTs with program-level technical oversight, including participation in ground and flight testing and recommendations on data processing and management tools and modeling and simulation requirements.

2.5.6. Assist the TESTREPs with development of TIPP and CTEIP inputs.

3. Metrics: Attachment 2 illustrates the top-level Capability Based T&E support process. The adequacy of AEDC's Capability Based T&E support to product and logistics centers and R&D agencies is assessed by formal and informal customer feedback addressing the adequacy of T&E planning and execution, in accordance with AEDCI 99-100, *Test Project Management*.

4. Records: The following records shall be maintained or created in accordance with the requirements of this instruction.

Required Record	Custodian
AEDC Investment Needs	AEDC/XPR (Appropriate Database)

Michael T. Panarisi, Colonel, USAF
Commander

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

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

AFI 99-109, *Test Resource Planning*, 17 May 2006

AFI 63-131, *Modification Program Management*, 6 Nov 2009

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

AEDCI 99-100, *Test Project Management*, 16 Aug 2012

AEDCI 90-700, *Capability Analysis and Risk Assessment* 10 Jul 2012

TO 00-35D-54, *USAF Deficiency Reporting, Investigation and Resolution*, 1 Nov 2011

Adopted Forms

AF847, *Recommendation for Changes of Publication*

Acronyms and Abbreviations

TMN—AEDC Maintenance Division

TTS—AEDC Test Systems Division

TST—AEDC Test Division

AEDC/CC—AEDC Commander

AEDC/XP—Plans and Programs Division

AEDC/XPR—Capabilities Integration Branch

CTA—Center Test Authority

CTEIP—Central Test and Evaluation Investment Program

ITT—Integrated Test Team

MOA—Memorandum/Memoranda of Agreement

PM—Program Manager

PTE—Program Test and Evaluation Expert

PTO—Participating Test Organization

R&D—Research and Development

RTO—Responsible Test Organization

T&E—Test and Evaluation

TESTREP—Test Representative

TIPP—Test Investment Planning and Programming

Attachment 2

CAPABILITIES BASED T&E SUPPORT PROCESS

Figure A2.1. Capabilities Based T & E Support Process

