DEPARTMENT OF THE NAVY
NAVAL AIR SYSTEMS COMMAND
NAVAL AIR SYSTEMS COMMAND HEADQUARTERS
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IN REPLY REFER TO

NAVAIRINST 4720.7
AIR-417
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NAVAIR INSTRUCTION 4720.7

From: Commander, Naval Air Systems Command

Subj: IN-SERVICE ENGINEERING PROGRAM FOR AUTOMATIC TEST EQUIPMENT TEST PROGRAMS SETS

Ref: (a) OPNAVINST 4790.2E
(b) OPNAVINST 5200.28
(c) NAVAIRINST 5400.14C
(d) NAVAIRINST 5420.35A
(e) NAVAIRINST 5400.120A
(f) NAVAIRINST 4130.1B
(g) DOD-STD-480B
(h) MIL-D-81992A(AS)
(i) AR-41
(j) NAVAIRINST 13650.1C

Encl: (1) Responsibilities for Managing and Executing Engineering Changes to Automatic Test Equipment Test Program Sets and Test Program Related Documentation During the Contractor Support Phase
(2) Responsibilities for Managing and Executing Engineering Changes to Automatic Test Equipment Test Program Set and Test Program Related Documentation During Transition
(3) Glossary

1. Purpose. To define policy, assign responsibilities, establish requirements, and publish procedures for the Naval Air Systems Command Headquarters (NAVAIRHQ) In-Service Engineering (ISE) Program for automatic test equipment (ATE) test programs sets (TPS) per references (a) through (j).

2. Background. ATE is required to support present and future complex aircraft weapon systems. The development of Navy organic capability to support these weapon systems includes the requirement to support the required ATE TPS. A test program set consists of hardware (interface device, cables, holding fixtures, etc.) and software (test programs - disk, tapes, cassettes, Test Program Instructions, Master Test Program Set Index, Supplemental data - diagnostic flow charts, source language program listings, etc.). Functionally, the TPS computer program operates within an ATE system and is connected to a unit under test (UUT) in such a manner to fault detect and fault isolate the UUT to its defective part(s). Such TPS support includes management, generation, maintenance, analysis, correction, modification, updating, and replenishment of test programs and test program related documentation. Successful establishment of organic support capability will minimize future costs while providing a vehicle for timely response to fleet requirements. The role of the Naval

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Aviation Maintenance Program, in support of weapon systems, is defined in reference (a). Computer Resources Life Cycle Management Plan (CRLCMP) is defined in reference (b). Enclosure (1) represents the related contractor support phase and enclosure (2) addresses the transition from contractor support to organic Navy support. Enclosure (3) provides a glossary of terms used.

3. Scope. This instruction

a. guides the implementation of the NAVAIR program for weapon system related ATE TPS and test program related documentation within various Navy activities;

b. is applicable to the requirements of reference (c) during the ATE TPS transition phase;

c. applies to all phases of the life cycle of the ATE TPS to include contractor support, transition period and organic support phase;

d. encompasses all ATE TPS used in common by intermediate/depot level maintenance activities in support of designated airborne weapon systems, or support equipment (SE), and all depot level only ATE test program sets funded and developed by NAVAIR and used in support of items for the cognizant field activity (CFA) and participating field activity (PFA);

e. includes common ATE system software and the Digital Automated Test Program Generator (DATPG) program as assigned to the Naval Air Warfare Center Aircraft Division Lakehurst (NAVAIRWARCENACDIVLKE) by NAVAIRHQ (AIR-552); and

f. includes the ATE TPS acceptance training and certification program to train and certify Test Program Acceptance Representatives (TPAR). Certified TPARs will accept for the government all ATE test programs developed by Navy in-house organizations and private industry prior to delivery to the Navy.

g. excludes

(1) TPS software for the Naval Aviation Depot (NAVAVNDEPOT) general purpose ATE;

(2) TPS software in support of non-CFA ATE used only at depot level activities;

(3) training software;

(4) tactical software; and

(5) SE which does not work with or is not controlled by computer software.

4. Policy. The responsibility for ISE of SE including ATE TPS has and will continue to be assigned to CFA following references (c) and (d). Wherever possible a CFA will be designated to assume complete ISE support for these TPSs as they are introduced to the Navy inventory. The CFA may assign part of the effort to another Navy field activity, acting as PFA, or to a commercial contractor, when necessary. However, the overall ATE TPS ISE responsibility

resides with the CFA. NAVAIRHQ (AIR-419), as required by reference (d), is responsible for management of all CFA/PCFA assignments to the NAVAVNDEPOT, the Naval Aviation Depot Operations Center (NAVAVNDEPOTOPSCEN), and the technical field activities. AIR-419 will coordinate the CFA/PCFA assignments with AIR-552 and AIR-417 during the very early life cycle of the applicable weapon system and support equipment. The planning and implementation process for transition of ATE TPS is as required by reference (e).

5. Responsibilities

a. NAVAIRHQ

(1) The Support Systems and Logistics Management Division (AIR-417) will

(a) manage and act as the overall Program Manager for the ISE Program for ATE TPS;

(b) act as the NAVAIR budget coordinator and focal point for ATE TPS that have been transitioned to a CFA;

(c) review and approve, in coordination with AIR-552, CFA developed management procedures for generating, processing, and approving software change proposals (SCPs) or developing new test programs and related documentation;

(d) review and approve, in coordination with AIR-552, CFA developed management procedures for implementing approved changes to existing or new ATE TPS and related documentation;

(e) review weapon system/SE related engineering change proposals (ECPs) for SE logistics impact prior to presentation to the appropriate NAVAIRHQ Change Control Board (CCB). Upon CCB approval assign Technical Directive (TD) Numbers (Support Equipment Change (SEC), Software Support Change) to Engineering Change Proposals (ECP) and Software Change Proposals (SCP), respectively;

(f) provide the NAVAIRHQ Product Support Director (AIR-419) with total program requirements including personnel, funding, and workload;

(g) manage the NAVAIR ATE TPS hardware/software configuration status accounting program;

(h) manage the ATE TPS maintenance engineering program;

(i) coordinate and monitor the activities of the CFAs and commercial contractors during the operation of the program for ATE test programs; and

(j) conduct analysis of maintenance concepts implemented by CFAs and develop recommendations for adjustments and improvements.

(2) The Support Equipment Division (AIR-552) will:

(a) manage the NAVAIR ATE TPS basic design engineering and production support programs;

(b) manage the NAVAIR ATE TPS configuration identification and configuration control programs;

(c) review and approve, in coordination with AIR-417, CFA developed management procedures for generating, processing, and approving SCPs or development of new test programs and related documentation;

(d) review all NAVAIR ECPs to determine complete SE impact (coordinate logistics requirements with AIR-417). When an SE engineering change is required, coordinate the development of the appropriate documentation (e.g., ECP, Master Test Program Set Index (MTPSI), etc.) and sponsor the change at the appropriate NAVAIR CCB per reference (c);

(e) budget for and fund SCPs that exceed the NAVAIRHQ established dollar limit, except for those changes subject to the Operational Safety Improvement Program;

(f) issue, in coordination with AIR-417, implementing direction for procurements authorized under the appropriate Aircraft Procurement Navy (APN) programs to develop initial capabilities within the CFA;

(g) maintain current list of ATE, both in-service and under development, and identify those ATE TPS subject to this program;

(h) review and approve budget requirements submitted by field activities for inclusion in the budget for engineering cognizance programs;

(i) manage NAVAIR ATE TPS offload programs; and

(j) manage the TPS acceptance training and certification program for TPAR.

b. <u>CFAs</u> will

(1) develop internal management procedures for the generation, review and processing of SCPs or development of new TPS and related documentation;

(2) develop internal management procedures for implementating approved changes or new ATE TPS and test program related documentation;

(3) ensure that all internal management procedures relative to the operation of the ISE Program are consistent with the requirements of references (b) through (j) and related SE and configuration management policy;

(4) comply with all applicable management procedures;

(5) implement configuration control procedures following reference (g) and related SE and TPS configuration management manuals;

(6) submit timely requests to NAVAIRHQ (AIR-417) for information systems services, facilities, or equipment;

(7) prepare budgetary and funding requirements for the ATE TPS and forward to NAVAIRHQ (AIR-417)/(AIR-552); maintain complete and accurate funding records;

(8) develop working agreements with other CFAs, assigned PFAs, weapon systems software support activities, and contractors as necessary;

(9) utilize the services of assigned PFA for ISE and maintenance of ATE related system software, peripheral equipment, and test program development aids for which the CFA is responsible and are used by the CFA to discharge the ATE TPS ISE responsibilities;

(10) perform or contract for ISE and maintenance of peculiar ATE related system software, operating systems, peripheral equipment, and test program development aids for which the CFA is responsible;

(11) perform acceptance test and serve as TPAR for ATE test programs developed by non-CFA sources, when required by NAVAIRHQ (AIR-552);

(12) analyze the impact that each proposed ATE TPS change has on test program set elements (hardware/software) and associated engineering and logistics data documentation and advise the cognizant NAVAIR field activities;

(13) analyze ECPs for ATE supported hardware and provide data to NAVAIRHQ (AIR-552) describing the nature, extent, costs and other impacts these ECPs will have on operational test program set elements, TPS related documentation, and associated hardware;

(14) review, analyze, investigate, and answer quality deficiency reports, technical publication deficiency reports, or other field reports relating to deficiencies or problems encountered with ATE TPS;

(15) review, analyze, investigate, and answer other reported faults or problems with ATE TPS and conduct engineering investigations as required by reference (a);

(16) design corrections to ATE test programs;

(17) develop new test programs or add new tests to existing test programs;

(18) update ATE TPS to maintain compatibility with modified ATE or airborne avionics;

(19) perform ATE test program reprogramming, debugging, reproduction, distribution, and replenishment;

(20) submit recommended SCP to NAVAIRHQ (AIR-417) for approval and assignment of TD SSC number;

(21) prepare, sign, and distribute TDs for software changes and kits per references (f), (h), and (i) for modifying test programs and related documentation;

(22) identify all impacts to technical data and documentation caused by ATE TPS changes and provide to Naval Air Technical Services Facility (NAVAIRTECHSERVFAC) or other cognizant activities the source information required to update the impacted documentation;

(23) ensure that all authorized TDs, including those applying to test programs and hardware are incorporated and documented to maintain configuration identification;

(24) ensure that NAVAIRHQ (AIR-417) is cognizant of all problem areas; that is, funding, management, schedule, etc.;

(25) submit annual budget requirements, monthly status of required actions, and quarterly listing of transitioned and planned transitioning of TPSs when required by NAVAIRHQ, Fleet Support and Programs Branch (AIR-4171); and

(26) perform TPAR duties using test program set professionals trained under the ATE TPS acceptance training and certification program.

c. PFAs (when designated by AIR-04 via AIR-419) will

(1) negotiate and implement working agreements with CFAs;

(2) perform the functions assigned in the working agreements; and

(3) provide CFAs with technical and logistic assistance for orderly planning and execution of ATE test program transition.

d. NAVAIRTECHSERVFAC will

(1) revise applicable paper technical documentation and data as required by changes to ATE TPS, or

(2) provide digital data revisions per NAVAIR Computer-aided Acquisition and Logistics Support (CALS) program; and

(3) provide bulk printing and distribution of TDs.

e. NAVAIRWARCENACDIVLKE will

(1) maintain, update, change, and provide life cycle support as PFA/CFA for designated ATE System Software.

(2) acquire, maintain, update, and provide life cycle support, as CFA, for the Hierarchial Integrated Test Simulator program (a Digital Automated Test Program Generator (DATPG) Program);

(3) act in the capacity of central site coordinator for multiple sites to acquire commercially licensed DATPGs; and

(4) serve as the focal point for naval activities between the contractor and the Navy for all efforts necessary to maintain, update, change and provide life cycle support for commercially licensed DATPGs (LASAR, etc.).

6. Procedures. Prior to or soon after service introduction of specific ATE and/or peculiar support equipment used with ATE, a prospective cognizant field activity (PCFA) will be designated by NAVAIRHQ (AIR-419) in coordination with AIR-552 and AIR-417 to perform ATE TPS ISE. Actual implementation of the CFA functions (basic design engineering, logistics management, maintenance engineering, and production support) will be accomplished by Product Support Transition Plan. This plan will be prepared by the PCFA for the Assistant Program Manager for Systems and Engineering for SE and the Assistant Program Manager for Logistics for SE. The Product Support Transition Plan will be approved by NAVAIRHQ (AIR-419) subsequent to PCFA acquisition of the required resources and capabilities to provide life cycle management. Resources will include requirements for ATE/software tools, etc. submitted via reference (b). Normally, the weapon system CFA will also be the CFA for the related ATE test programs per reference (b). When ATE TPS sets support two or more weapon systems, one CFA will be specifically designated as the CFA for those TPSs.

Donald V. Boecker

DONALD V. BOECKER
Vice Commander

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RESPONSIBILITIES FOR MANAGING AND EXECUTING ENGINEERING CHANGES TO ATE TPS AND TEST PROGRAM RELATED DOCUMENTATION DURING THE CONTRACTOR SUPPORT PHASE

1. Background. The responsibilities for managing and executing all engineering changes are described in references (f) and (g). The purpose of this enclosure is to highlight those responsibilities relevant to managing and executing engineering changes to ATE TPS and test program related documentation during the contractor support phase. AIR-419 manages the selection of the PCFA/CFA assignment during this phase per reference (d). Field activity management, then, begins per reference (c).

2. Responsibilities

a. NAVAIRHQ

(1) AIR-417 will

(a) furnish necessary procurement request requirements for integrated logistic support (ILS) elements;

(b) submit ILS and equipment budget requirements to AIR-552;

(c) issue planning tasks to the PCFA for the indoctrination of personnel to acquire the knowledge and expertise to perform ATE TPS ISE;

(d) collaborate with AIR-419 as lead organization and AIR-552 in the designation of the PCFA;

(e) collaborate with the NAVAVNDEPOTOPSCEN, NAVAIRWARCENACDIVLKE, AIR-552 and the Program Manager Air, Aviation Training Systems Program Office (PMA205) in planning, developing, and providing policy guidance for the PCFA to obtain facilities and training;

(f) collaborate with AIR-419, AIR-552 and PCFA following reference (c) in establishing criteria for transitioning cognizance of specific TPSs to the CFA;

(g) review ECPs with AIR-552 prior to presentation to the appropriate CCB; and

(h) assist in the preparation of the CRLCMP per reference (b).

(2) AIR-552 will

(a) collaborate with AIR-419 as lead organization and AIR-417 in the determination of the PCFA;

(b) review all NAVAIR ECPs to determine complete SE impact (coordinate logistics requirements with AIR-417). When an SE engineering change is required, coordinate the development of the appropriate documentation (e.g., SEC, SSC, logistics documentation, engineering documentation, budget/funding, NAVAIR 2C or replacements, etc.) and sponsor the change at the appropriate NAVAIR CCB per reference (f);

(c) procure the technical documentation required by the PCFA to establish weapon system(s) ATE TPS ISE capability;

(d) acquire the equipment, computer aids, and computer programs required by the PCFA to establish ATE TPS ISE capability;

(e) submit budget requirements, via the appropriate budgetary chain, to the cognizant program manager(s) to procure equipment, documentation, and cognizant ILS elements;

(f) budget for and fund, in coordination with AIR-417, the acquisition of common ATE related equipment (including hardware/software), manpower, training, and documentation required by PCFA to establish ATE TPS ISE;

(g) maintain a current list of ATE, both in-service and under development, and identify those ATE TPS subject to this program; and

(h) prepare the SE CRLCMP per reference (b) and submit to the Avionics and Computer Resources Division (AIR-546) for review and approval.

(3) Designated Program Managers, Air (PMAs) for Acquisition will

(a) review and approve, in coordination with AIR-417 and AIR-552, the PCFAs plan for acquisition, lease, or transfer of ATE TPS ISE equipment, computer aids, and computer programs required by the PCFA to perform the designated ATE TPS ISE tasks;

(b) budget for, and fund in coordination with AIR-417 and AIR-552, acquisition of necessary peculiar ATE related equipments, (including hardware/software), manpower, training, and documentation required by the PCFA to establish ATE TPS ISE capability as established in the approved transition plan; and

(c) review and coordinate CRLCMP submitted per reference (b).

b. PCFAs will

(1) establish the capability (technical documentation, facilities, trained manpower, etc.) to perform the functions required for the TPS ISE task;

(2) advise NAVAIRHQ (AIR-417) of the progress of the development of ATE TPS ISE capability;

(3) advise NAVAIRHQ (AIR-417) of any problems (technical data, facilities, manpower, etc.) that may delay the establishment of the required capability;

(4) develop internal management procedures for generating, processing, and approving SCPs;

(5) develop internal management procedures for the implementation of approved changes to ATE TPS and test-program-related documentation;

(6) develop interface working agreements with contractors, NAVAIRTECHSERVFAC, NAVAIRWARCENACDIVLKE, other PCFAs, and other field activities;

(7) develop working agreements with contractors for assistance after transition, as required;

(8) participate in ILS management team meetings, acquisition team meetings, transition meetings, program reviews, carrier aviation maintenance site activation plans, support equipment shore site activation plans, and other necessary meetings for initial planning in order to define requirements to NAVAIRHQ (AIR-417) for ATE equipment, TPS, technical documentation, and training for the above; and

(9) provide budgetary requirements to NAVAIRHQ (AIR-552) for ATE TPS, equipment, technical documentation, training, and contract/material requirements.

c. NAVAIRWARCENACDIVLKE will

(1) prepare and maintain a data file of technical application for in-use asset information for all ATE test programs and related configuration items (CIs) per reference (j);

(2) prepare and distribute system software/DATPG listings, other aids, and distribute VAST Master Test Program Set Index (MTPSI) cards for self test, etc., as required by NAVAIRHQ (AIR-5522/AIR-417), PCFAs, or fleet activities for management purposes under reference (j);

(3) maintain designated system software and digital automated test program generators including recommended actions on proposed changes by CFAs;

(4) recommend terminals, terminal networks, and host computers, and demonstrate system software;

(5) submit budgetary requirements to NAVAIRHQ (AIR-417) for the NAVAIRWARCENACDIVLKE responsibilities of this instruction;

(6) provide NAVAIR approved TDs for ATE system software derived from approved SCPs for inclusion in kits;

(7) provide signed reproducible copies of TDs for ATE system software to NAVAIRTECHSERVFAC for bulk printing and distribution; and

(8) provide planning for resources necessary for ATE test program, ATE System Software, and DATPG transition; and

(9) develop training materials and provide training to CFA and Technical Field Activities for DATPG and ATE System Software.

d. NAVAIRTECHSERVFAC will

(1) revise applicable paper technical documentation and data as required by changes to ATE test programs; or

(2) provide digital data revisions per NAVAIR CALS program, and

(3) provide bulk printing and distribution of TDs.

RESPONSIBILITIES FOR MANAGING AND EXECUTING ENGINEERING CHANGES TO ATE TPS AND TEST PROGRAM RELATED DOCUMENTATION DURING TRANSITION

1. Background. AIR-419 manages the transition of weapon system equipments and software including ATE TPSs per reference (e). The transition of ATE TPS ISE responsibilities from the contractor to the CFA requires the assignment of tasks to various functional groups in order to implement the ISE Program for TPS in the designated CFA. Reference (e) describes the planning procedures and implementation process for transition of equipment and software from NAVAIR to field activities. During this phase the designated PCFA becomes the CFA and accepts transitioned ATE/TPS workload.

2. Responsibilities

a. NAVAIRHQ

(1) AIR-417 will

(a) serve as the focal point within NAVAIRHQ for overall management of ATE TPSs during transition with the CFAs at the Product Support Directorates (PSD) and Technical Field Activities;

(b) collaborate with AIR-552 in the review and approval of internal procedures to be used within the CFA for managing the test program change process;

(c) coordinate with the applicable NAVAIRHQ program manager, AIR-552, and NAVAIRWARCENACDIVLKE in the review and approval of the CFAs/PCFAs plans for acquiring equipment, computers, and computer programs to attain ATE TPS ISE capability within the CFAs/PCFAs;

(d) budget and fund Operation and Maintenance, Navy (O&MN) requirements for operation of the ATE TPS upon transition; and

(e) allocate apportioned funds in conjunction with the applicable PMA and AIR-552 during transition.

(2) AIR-552 will

(a) coordinate with AIR-417 in the review and approval of internal procedures to be used within the CFA for managing the test program change process;

(b) coordinate with AIR-417, NAVAIRWARCENACDIVLKE, and the cognizant PMA, if appropriate, in the review and approval of the CFA/PCFAs plans for acquiring ISE capability within the CFA/PCFA;

(c) coordinate requirements with AIR-417 and the cognizant PMA, if appropriate, in the budgeting and funding of ATE TPS requirements necessary to transfer TPS to CFA cognizance; and

(d) coordinate with AIR-417 in maintaining a continuous review of all ATE and associated equipment, and accomplishing timely and expeditious transfer of ISE cognizance of ATE TPS to a CFA.

(3) PMAs will

(a) coordinate with AIR-417 and AIR-552 in the review and approval of the PCFAs plans for acquiring equipment, computers, and computer programs to attain ATE TPS ISE capability within the PCFA;

(b) budget for and fund, in coordination with AIR-417 and AIR-552, the acquisition of compilers, equipment, training, and technical documentation required to attain ATE TPS ISE capability within the PCFA.

b. PCFAs/CFAs will

(1) advise NAVAIRHQ (AIR-417) of any problems (technical data, facilities, manpower, etc.) that may cause delay in the performance of the assigned tasks;

(2) develop management procedures for the generation, processing approval, and implementation of SCPs;

(3) develop interface working agreements with NAVAIRTECHSERVFAC, NAVAIRWARCENACDIVLKE, PFAs, and other field activities;

(4) develop working agreements with prime contractors for assistance after transition;

(5) advise NAVAIRHQ (AIR-417) regarding the progress for the development of capability to support ISE for ATE TPS;

(6) perform documentation audits and establish configuration baselines;

(7) inform NAVAIRHQ (AIR-417) when ATE TPS ISE capability has been established;

(8) provide any additional budget requirements to NAVAIRHQ (AIR-417);

(9) receive, track, monitor, and report on TPS related problems submitted under reference (a); and

(10) perform the Maintenance Engineering tasks per reference (c).

c. PFAs will perform required ATE TPS functions consistent with reference (c) and by direction of cognizant CFA.

d. NAVAIRWARCENACDIVLKE will

(1) maintain a data file of technical application and in-use asset information for all ATE TPS and related CIs per reference (j);

(2) prepare and distribute ATE system software/DATPG listings, and distribute Versatile Avionics Shop Test MTPSI cards as required by NAVAIRHQ (AIR-552), (AIR-417), CFAs, or fleet activities for management purposes per reference (j);

(3) maintain designated ATE system SE software and DATPG;

(4) recommend terminals, terminal networks, host computers and demonstrate the use of Abbreviated Test Language for All Systems compilers;

(5) provide CFAs with technical and logistic assistance with software tools and for orderly planning and execution of ATE test program transition; and

(6) develop training materials and provide training to CFA and Technical Field Activities for DATPG and ATE System Software.

e. NAVAIRTECHSERVFAC will

(1) revise applicable paper technical documentation and data as required by changes to ATE TPS; or

(2) provide digital data revisions per NAVAIR CALS program; and

(3) provide bulk printing and distribution of TDs.

GLOSSARY

1. Ancillary Support Equipment (SE). SE, normally common (CSE), that may be required in addition to the Operational Test Program Set (OTPS) and holding fixtures to complete testing.

2. Automatic Test Equipment (ATE). A subset of SE, either peculiar (PSE) or CSE, which normally operates under control of a computer (other control devices may be used) to test a unit under test (UUT). ATE consists of electronic devices capable of automatically or semiautomatically generating and independently furnishing programmed stimuli measuring selected parameters of an electronic, mechanical, or electromechanical item being tested making a comparison to accept or reject the measured values following predetermined limits. ATE may also include independently configured automatic or semiautomatic devices that are capable of detecting, measuring, and evaluating electrical, electronic, or electromechanical characteristics of systems or equipment. ATE normally operates by use of previously prepared test programs recorded on punched tape, card decks, magnetic tapes, discs, or other storage media.

3. ATE Test Program. A computer program that operates the ATE in such a manner as to test the UUT with a Test Program Set as the interface medium. The test program may be in the form of a magnetic tape, punched tape, disk, or other suitable vehicle. The test program is written in computer language and contains performance verification and fault diagnostics for one specific UUT.

4. ATE Test Program-In-Service Engineering (ISE). An aggregate of functions which defines and evolves technical requirements and documents to be applied to operating systems/equipments. This encompasses all efforts to support and maintain the intended mission capability; to maintain inherent design capabilities of the system/equipment at the minimum expenditure of resources; to preserve the planned operational life; and to achieve readiness goals. This effort is accomplished through the application of design, maintenance, and logistics principles. The basic functions of In-Service Engineering/Support include:

a. Establish and adjust maintenance tasks/intervals, analyze system/equipment, and data to determine fleet support improvement opportunities, project repair requirements, and develop maintenance specifications.

b. Develop, manage, and control design modifications within the operating envelope as defined by the operational requirement and specifications, to gain advantages in maintenance, readiness, or cost.

c. Establish, monitor, and adjust the logistics requirements including configuration management, technical information, training, parts, and support equipment.

d. Provide technical support, feedback, and supportability analysis for application to new or upgraded weapons systems/equipments.

e. Respond to technical questions from operating and maintenance personnel and develop technical solutions to operating maintenance problems.

f. Serve as the liaison with other aviation technical communities for in-service technical problems.

g. Ensure safety and prudent operations through technical assessment of problems requiring aircraft grounding and/or restricted operations, and the development of solutions to those problems.

h. Analyze and recommend adjustments to the specified service life for aircraft and equipment.

i. Maintain operating cost data on assigned systems/equipments.

j. Manage the in-service warranty program.

k. Recommend changes to Naval Air Training and Operating Procedures (NATOPS) flight manuals.

l. Develop a systematic plan for accomplishing modifications of assigned systems/equipments.

5. ATE Test Program Related Documentation. Documentation consisting of, but not limited to, diagnostic flow charts, diagrams, source language program listing, manuals, drawings, and the master test program set index that may be required in addition to the OTPS and holding fixtures to complete testing of the UUT.

6. Baseline. A configuration identification document or a set of such documents formally designated and fixed at a specific time during a CIs life cycle. Baselines, plus approved changes from those baselines, constitute the current configuration identification. For test programs, the baseline should consist of at least the test program, test program instruction, source language program listing, diagnostic flow chart, and test diagram or suitable substitutes. For configuration management, there are three baselines, as follows:

a. Functional Baseline. The initial, approved functional configuration identification. The preparatory functional baseline is an original statement of the Chief of Naval Operations operational requirements and characteristics that, when invoked, influences the development of the functional specification and functional design to satisfy the operational requirements. The functional baseline is established very early in an equipment's life cycle and relates to the functional specification and functional design to satisfy the operational requirements. The design agent is given wide latitude in design as long as the proposed design will meet the operational requirements. Control by ECP is exerted only if the proposed design change impacts the ability to satisfy operational requirements.

b. Allocated Baseline. (Not normally applicable to SE.) For software, the initial approved allocated configuration identification. The allocated baseline is established later in the life cycle of the equipment and ECP

control is exerted when a proposed change impacts the performance of the CI even though operational characteristics may not be affected. This baseline includes the current approved performance-oriented specification governing the development of sublevel CIs that are part of a higher level CI. Each specification

(1) defines the functional characteristics consisting of quantitative performance, operating and logistic parameters, and their respective tolerances, including all pertinent performance parameters such as range, speed, reliability, maintainability, safety etc.;

(2) establishes the tests required to demonstrate achievement of the functional characteristics stated in paragraph 6b(1) above, allocated to each of these sublevel CIs;

(3) delineates necessary requirements for interface with other CIs; and

(4) establishes design constraints, if any, such as component standardization, use of inventory items, and integrated logistic support requirements.

c. Product Baseline. The initial approved or conditionally approved product configuration identification consisting of the technical documentation that defines the configuration of a CI during the production, operation, maintenance, and logistic support phases of the CIs life cycle. Of the three baselines, the product baseline is established last in the CIs life cycle and is the baseline over which the most rigorous ECP control is exerted. The product baseline prescribes

(1) all necessary physical or form, fit and function characteristics of a CI;

(2) the selected functional characteristics designated for production acceptance testing; and

(3) the production acceptance test.

7. CALS. CALS is a Department of Defense strategy for electronically receiving, storing, and distributing all technical information for weapon system acquisition, design, manufacturing, and support. It requires the integration of this information, both text and graphics, into electronic databases so that it can be archived and accessed for multiple purposes.

8. Configuration. The functional and/or physical characteristics of hardware and software as in technical documentation and achieved in a product.

9. Configuration Identification. The current approved or conditionally approved technical documentation for a configuration item as in specifications, drawings and associated lists, and documents referenced therein.

10. CI. An item subject to the disciplines of configuration management. ATE TPS and related documentation are CIs.

11. Configuration Management. The discipline of applying technical and administrative direction and surveillance to:

a. identify and document the functional characteristics of a CI;

b. control changes to those characteristics; and

c. record and report the progress of implementing those changes.

12. Configuration Status Accounting. The recording and reporting of the information that is needed to manage configuration effectively, including a listing of the configuration identification, the status of proposed changes to configuration, and the status of implementation of approved changes.

13. DFC. A detailed, dynamic, UUT-test-oriented document logically and completely defining all processes, variables, decisions, branches, parallel operations, exits, entries, routines, and subroutines within the test program for a particular UUT.

14. Holding Fixture. Hardware that may be required to hold the UUT in position during testing.

15. Interface Device (ID). Active or passive hardware that provides mechanical and electrical connection between the UUT and the ATE.

16. MTPSI. An index of UUTs that are to be tested on ATE. The MTPSI contains an entry for each UUT for which test capability has been developed. The entry lists all of the OTPS elements, ATE elements, ancillary SE, holding fixtures, and pertinent documentation needed to conduct the programmed test of the UUT on the ATE. Because of the dynamic nature of test program set configuration, the MTPSI will not be incorporated into NAVSUP publication 2002.

17. NAVAIR Program for ATE Test Programs. The Naval Aviation program that encompasses the policies, procedures, requirements, plans, and responsibilities for the application of ATE TPS ISE principles to all ATE test programs used by intermediate level aviation maintenance activities in support of specified weapon systems, avionics, or SE. This program excludes

a. TPS/software for NAVAVNDEPOT general purpose ATE;

b. software for non-CFA ATE used only at depot level activities;

c. training software;

d. tactical and airborne built-in test software; and

e. SE which does not work with or is not controlled by computer software.

18. Operational Test Program. The group identification of the OTPSs elements required to test a group of related UUTs on ATE.

19. Operational Test Program Instruction. A compilation, usually on software, the UUT or the ID; and microfilm, of the TPIs for one or more related UUTs.

20. OTPS. The group identification of all of the OTPS elements required to test a group of related UUTs on ATE.

21. SCP. The vehicle for proposing a change to operational software and support software and related documentation. The change must

a. have no impact on the configuration of the ATE, the UUT, or the ID; and

b. have recurring and nonrecurring costs less than or equal to a specific dollar amount established by NAVAIRHQ.

22. Source Language Program Listing. A high-level program listing in the language of the ATE test system annotated sufficiently to allow analysis and cross-reference to related data elements.

23. Supplementary Data. The group identification of source language program listings, test diagrams, and DFCs.

24. Test Diagram. A document defining the explicit active electrical interface among the ATE, ID, and UUT identifying the entire electrical path through each connector and connector pin.

25. Test Program. See ATE test program paragraph 3 of this enclosure.

26. TPAR. A certified Test Program Set professional who performs acceptance testing of test program sets for approval prior to delivery to the Navy.

27. Test Program Instruction (TPI). An instruction for one specific UUT providing all of the information that is normally required to prepare the UUT for test, connect the UUT to the ATE, accomplish the programmed test, make any required on-line adjustments or alignments, and disconnect the UUT from the ATE.

28. TPS. The group identification of all the TPS elements required to test one specific UUT on the ATE. The TPS consists of the ID, TPI, and test program.

29. Test Program Tape. Limited term now being superseded by the more general term, Test Program Medium, since ATE test programs may be provided on media other than tape.

30. Unit Under Test (UUT). The assembly or subassembly that is being tested on the ATE.