

CHANGE REQUEST COVER SHEET

Change Request Number: 09-12

Date Received: 3/23/2009

Title: T&E Policy

Name: David Woodson

Phone: 202-267-7601

Policy OR Guidance: Policy

Section/Text Location Affected: 2.1.7, 2.4, 4.4, 4.4.2, 4.6, appendix a, appendix c

Summary of Change: Establishes validation and verification in AMS policy

Reason for Change: V&V is a weakness that needs correction

Development, Review, and/or Concurrence: Approved by ASAG

Target Audience: FAA workforce

Potential Links within FAST for the Change: none

Briefing Planned: No

ASAG Responsibilities: Review and Comment

Potential Links within FAST for the Change: none

Links for New/Modified Forms (or) Documents (LINK 1)

Links for New/Modified Forms (or) Documents (LINK 2)

Links for New/Modified Forms (or) Documents (LINK 3)

SECTIONS ADDED:

Acquisition Management Policy:

Section 2.1.7 : Verification and Validation [\[New Content\]](#)

SECTIONS EDITED:

Acquisition Management Policy:

Section 2.4 : Investment Analysis [\[Old Content\]](#)[\[New Content\]](#) [\[RedLine Content\]](#)

Acquisition Management Policy:

Section 4.4 : Test and Evaluation [\[Old Content\]](#)[\[New Content\]](#) [\[RedLine Content\]](#)

Acquisition Management Policy:

Section 4.4.2 : Solution Implementation [\[Old Content\]](#)[\[New Content\]](#) [\[RedLine Content\]](#)

Acquisition Management Policy:

Section 4.6 : Deployment Planning [\[Old Content\]](#)[\[New Content\]](#) [\[RedLine Content\]](#)

SECTIONS ADDED:

Acquisition Management Policy:

Section 2.1.7 : Verification and Validation

The FAA employs verification and validation throughout the acquisition management lifecycle to support investment decisions and approvals. Validation ensures the right product is built (fulfills its intended use). Verification ensures a product is built right (according to specifications). Verification and validation are performed early and incrementally throughout the lifecycle management process on select work products, product components, and products. Products are intended for delivery to a customer or end user. Product components are lower-level configuration items of the product. Work products represent, define, or direct product development. The following are sample work products, work components, and products subject to verification and validation:

- Operational concept or procedures
- Planning documents
- Requirement and specification documents
- Procurement and contractual documents
- Models, prototypes, and simulations
- Design documents
- Products and product components

SECTIONS EDITED:

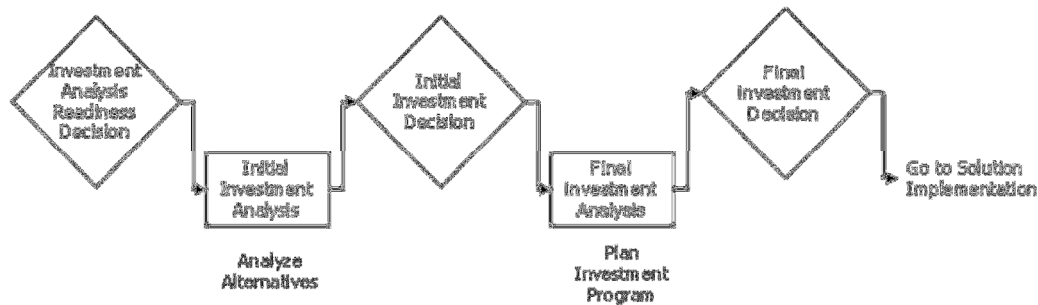
Section 2.4 : Investment Analysis

Old Content: Acquisition Management Policy:

Section 2.4 : Investment Analysis

Figure 2.4-1 illustrates the phases and decision points of investment analysis, which is conducted to ensure FAA's critical needs are satisfied by practical and affordable solutions. Initial investment analysis evaluates alternative solutions to mission need and provides realistic options to the Joint Resources Council that satisfy FAA strategic and performance goals and achieve best overall value for the FAA and its customers. Final investment analysis develops detailed plans and final requirements for a proposed investment opportunity.

Figure 2.4-1 The Phases and Decision Points of Investment Analysis



Investment analysis is a flexible process that is tailored for the specific analysis to be performed. Tailoring actions are approved by the acquisition executive or the Joint Resources Council and recorded in the appropriate plan and JRC record of decision for initial or final investment analysis.

Investment analysis teams conduct major, complex investment analyses. These teams have representatives from the service organization with the mission need, the operating service organization, the ATO Operations Planning organization, the ATO business case analysis organization, and necessary key subject-matter experts from such disciplines as system safety, information security, human factors, and integrated logistics. In all cases, organizations conducting investment analysis apply the standard processes and guidelines located in the investment analysis section of the FAST toolset.

Investment analysis is conducted within context of all planned or in-place FAA assets, capabilities, and resources described in the enterprise architecture. Recommendations are consistent with and support FAA strategic and performance goals and the enterprise architecture.

NAS and non-NAS roadmaps in the enterprise architecture establish when an operational capability must be in place. This, in turn, determines when investment analysis should be complete to allow sufficient time to acquire and deploy a suitable solution. The key is to balance the timeliness of the analysis with the rigorous development of quantitative data needed by the Joint Resources Council to make an informed investment decision.

Cost-effective, operationally suitable commercial or non-developmental solutions are preferred over developmental alternatives when performance and lifecycle support costs are acceptable.

Investment programs are structured into manageable phases approved incrementally by the Joint Resources Council. Each phase is normally five years or less, and may be divided into technology development or demonstration followed by production and deployment. Production and deployment may also be divided into useful segments to reflect agency funding and operational priorities. Cost, schedule, performance, and benefit projections for each phase must always be deemed beneficial to the FAA and its customers. When additional phases are required

to fully implement an investment program, the service organization conducts final investment analysis and brings each sequential phase to the Joint Resources Council for approval.

If a nonmaterial solution emerges during investment analysis that satisfies the need, can be achieved within approved budgets, and is operationally acceptable to the user, it may be implemented without proceeding further in the lifecycle management process. This determination is made by the Vice President or Director of the service organization with the mission need with the concurrence of the appropriate enterprise architecture control board.

Affordability and accurate cost and schedule estimates are key factors in the decision to approve a new investment program. During initial investment analysis, the capital investment team assesses the budget impact and relative contribution to agency goals of each alternative solution to mission need against other ongoing and proposed investment programs in the FAA's financial baseline. During final investment analysis, they assess the budget impact of the proposed investment program. Results are reported to the Joint Resources Council and included in the business case analysis report. Appendix A contains the membership of the capital investment team.

The FAA standard lifecycle work breakdown structure shall be used when developing cost and schedule estimates. When available, cost estimates must be based on actual or historical data.

Stakeholder participation is important throughout investment analysis. Stakeholder support for the solution approved at the initial investment decision is key to program success. Coordination with stakeholders is the responsibility of the service organization.

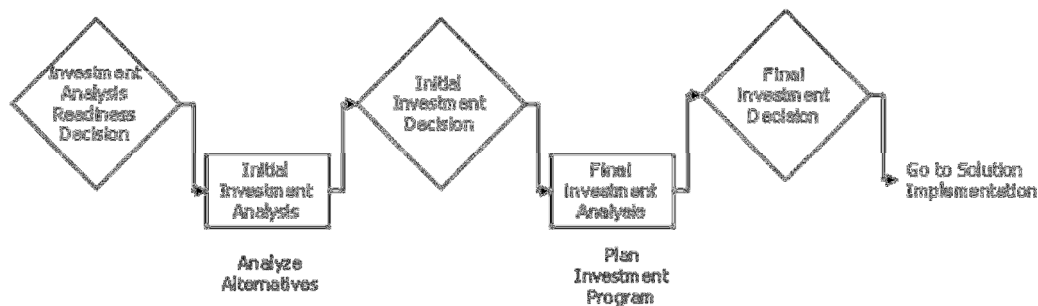
Investment analysis processes conform to external authorities such as those detailed in Appendix E. These authorities include, but are not limited to, the Federal laws, regulations, and guidelines shown. In particular, the information required by OMB Circular A-11, *Preparation, Submission, and Execution of the Budget* is generated, the requirements of OMB Circular A-76, *Performance of Commercial Activities* are considered, and the guidance of OMB Circular A-94, *Guidelines and Discount Rates for Benefit Cost Analysis of Federal Programs* (as annually updated) is followed. OMB Circular A-11 contains Federal policy for planning, budgeting, and managing capital assets. OMB Circular A-94 provides guidelines and values for use in conducting federal investment analyses, including the appropriate selection of analytical technique and decision criterion. It also prescribes the treatment of inflation and discounting. OMB Circular A-76 contains established government policy that requires consideration of commercial sources to supply the products and services the government needs, and performance of inherently governmental activities by government personnel. This includes consideration of government sources as an alternative. The FAA follows the policies of these circulars to the extent that they are consistent with FAA's statutory authority.

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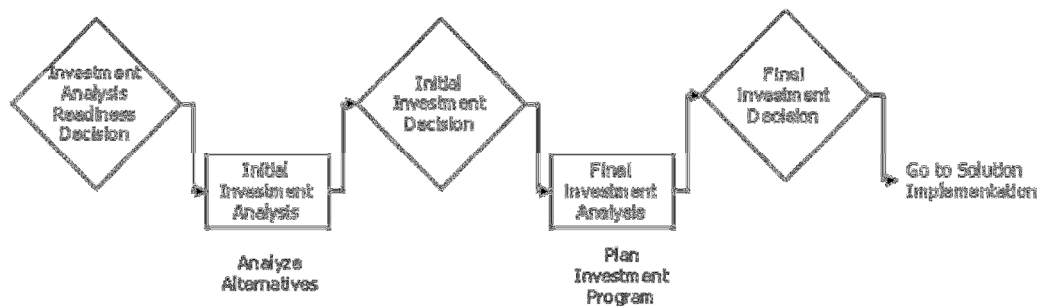
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Section 4.4 : Test and Evaluation

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Test & Evaluation is conducted in accordance with the AMS Test and Evaluation Process Guidelines found on FAST. The objectives are to:

- Provide essential information in support of decision-making;
- Provide essential information for assessing technical and investment risks;
- Verify the attainment of technical performance specifications and objectives; and
- Verify that investment products are operationally effective and suitable for intended use.

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 - Verify **and validate** that investment products are operationally effective and suitable for **the** intended use.
-

Section 4.4.2 : Solution Implementation

Old Content: Acquisition Management Policy:
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All system/software and facility investment programs follow a structured, disciplined T&E process appropriate to the product or facility being tested. Initially, test and evaluation in solution implementation assesses and suggests ways to mitigate potential operational risks. Later it verifies operational readiness and supplies data to decision-makers in support of the production and in-service decisions.

A typical T&E program consists of system test, field familiarization testing, as well as independent operational test and evaluation for designated programs (see Section 4.5). System test usually includes development, operational, production, and site acceptance testing. Test and Evaluation of commercial and non-developmental items is tailored to account for test results already available from vendors. For example, an operational capability demonstration may reduce system test requirements. As part of field familiarization testing, all systems/software products normally require site operational testing and information security testing to verify operational readiness. Test and evaluation for facility investment programs is conducted according to regional test procedures and disciplines.

New Content: Acquisition Management Policy:
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All system/software and facility investment programs follow a structured, disciplined T&E process appropriate to the product or facility being tested. Initially, test and evaluation in solution implementation assesses potential operational, safety, and security risks and identifies opportunities for risk mitigation. Later it examines operational readiness and supplies data to decision-makers in support of the production and in-service decisions.

A typical T&E program consists of developmental test, operational test, site acceptance testing, and field familiarization testing, as well as independent operational test and evaluation for designated programs (see Section 4.5). Test and Evaluation of commercial and non-developmental items is tailored to account for test results already available from vendors. For example, an operational capability demonstration may reduce system test requirements. As part of field familiarization testing, all systems/software products normally require site operational testing and information security testing to support the site operational readiness decision.

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Section 4.6 : Deployment Planning

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Deployment planning prepares for and assesses the readiness of a solution to be implemented into the National Airspace System. Deployment planning is part of a continuous in-service review process that begins early in the lifecycle management process, usually during the development of requirements. All programs undergo some degree of deployment planning to ensure key aspects of fielding a new capability are planned and implemented, as well as to ensure the deployment does not create a critical deficiency in the National Airspace System. The level of authority for deployment readiness assessment and in-service decision (ISD) may vary from the service organization leader to the Joint Resources Council, chaired by the head of the sponsoring line of business.

The conduct of deployment planning involves coordination among and participation by many critical functional disciplines. Trade-offs among cost, schedule, performance, and benefits relative to these functional disciplines must also include the impact of deployment and implementation considerations. Deployment planning tools (such as a tailored in-service review checklist) must be used to assist in identifying, documenting, and resolving deployment and implementation issues. Methods and techniques include, but are not limited to, a tailored application of generic tools, the integration of checklist issues with other emerging issues (such as problem test reports from program tests and evaluation), development of action plans for resolution of checklist and other items, and documentation of the results of issue resolution and mitigation. Consistent deployment planning must be visible in contractor "statement of work" and associated efforts. The status of deployment planning (and issue resolution) activities are briefed periodically (e.g. at service-level reviews), presented at the ISD meeting, summarized in the ISD memorandum, and audited during the post implementation review. The implementing service organization is responsible for the successful completion of deployment planning activities. The operating service organization provides guidance and technical expertise related to ISR issues or other factors that may affect the ability to deploy and support the intended service, product, or requirement. All lines of business will resolve and close their respective ISR issues.

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