

## IOT&E Operations Manual

### CHANGE HISTORY

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ATQ-GEN-OM01-11-F

## **IOT&E MISSION STATEMENT**

### **Office of IOT&E Mission Statement**

The Office of IOT&E fulfills the agency's commitment to field systems that are operationally ready by conducting Independent Operational Test & Evaluation (IOT&E) prior to the in-service management phase.

Staffed with a pro-active team of diverse technical, operational, and administrative experts, the Office of IOT&E accomplishes this mission by:

- working with Acquisition Teams to facilitate System Test strategies that verify operational requirements and mitigate operational risks,
- monitoring system acquisition activities to identify and communicate potential operational risks to Acquisition Teams and other stakeholders,
- leading IOT&E Teams in operational assessments of designated systems, and
- providing decision makers with the IOT&E Teams' independent determinations of operational readiness in support of acquisition and in-service decisions.

## **OFFICE OF IOT&E VISION STATEMENT**

### **OFFICE OF IOT&E VISION**

As an innovative center-of-excellence in the operational assessment of new National Airspace System (NAS) systems, the Office of IOT&E will be recognized as a leader in the FAA's commitment to efficiently acquire and deploy Operationally Ready NAS systems.

ATQ-GEN-OM01-11-F

## 1.0 INTRODUCTION

An Independent Operational Test and Evaluation (IOT&E) is a full system-level evaluation conducted in an operational environment to confirm the operational readiness of a system before it is incorporated into the National Airspace System (NAS). IOT&E is conducted on Federal Aviation Administration (FAA) systems that have been designated by the Chief Operating Officer (COO) of the Air Traffic Organization (ATO). The Vice President of Safety Services directs the commencement of IOT&E following acceptance of an IOT&E Readiness Declaration (IOTRD) by the Vice President of the affected Service. An IOTRD declares a system's readiness for operational use and IOT&E, and addresses the availability of resources required to conduct IOT&E. IOT&E Teams, led by IOT&E Program Managers (PMs) from the Office of IOT&E, with members from Air Traffic (AT) and Airway Facilities (AF), assess, document, and brief the operational readiness of designated systems. IOT&E Assessments are reported to the Vice President of Safety Services, the ATO Executive Council and the In-Service Decision (ISD) authority, and are used in support of ISDs and in some cases, acquisition decisions.

To meet the needs of the agency for operational assessments of systems at different program phases, the Office of IOT&E and the IOT&E Team perform three general types of IOT&E Assessments:

- IOT&E Early Operational Assessment (EOA) – An IOT&E EOA is performed on prototype or early versions of a system that are not intended to have a deployment decision. In this type of assessment, there may or may not be an IOTRD, and the intent is to identify potential operational issues.
- Early IOT&E – An Early IOT&E is performed when there will be a partial/limited/phased deployment decision for a system. A full IOT&E will always follow. There is always an IOTRD, and the intent is to provide the decision maker(s) with an Operational Readiness assessment of the early version of the system at the designated site(s). Early IOT&E may also include an outlook of potential operational issues with the subsequent national deployment.
- IOT&E – An IOT&E is conducted on a system that will have a standard/national ISD. There is an IOTRD, and a Follow-up Assessment is required.

IOT&E processes are further discussed in Section 2.4 of this document.

### 1.1 PURPOSE AND SCOPE

The Office of IOT&E's staff of administrative and technical experts ensures that the activities necessary to implement IOT&E are successfully completed and the resulting IOT&E process is of a high quality. This manual provides policies and standard operating procedures that IOT&E staff members are expected to follow in the conduct of IOT&E and related processes. These processes are enforced by the Office of IOT&E's overall quality assurance process, which includes program management, peer reviews, and quality audits. The body of this manual primarily addresses IOT&E, while the appendices provide guidance and direction on supporting processes.

## **1.2 UPDATE CYCLE, REVIEWS, AND CONFIGURATION MANAGEMENT**

This Operations Manual contains IOT&E's policies and standard operating procedures; therefore, it is important that it reflect current FAA Test Policy, Test and Evaluation (T&E) Guidance, and IOT&E Lessons Learned. The Operations Manual updates, reviews, and revisions are managed by the IOT&E Specialist. The Operations Manual is updated at least two times in a 12-month period and includes all changes/revisions agreed to by the IOT&E staff from the following activities: Lessons Learned briefs, offsite discussions, daily staff telcons, email discussions, reviews by Point of Contact (POC) for various activities/processes, changes in process improvement metrics, and any other changes that are agreed to within the staff. The IOT&E Specialist maintains an ongoing list of changes and develops a red-lined version that is sent to all Office of IOT&E and SENTEL staff for a two-week review. The IOT&E Specialist adjudicates the comments and involves staff in discussions on any suggested changes that require staff input. The Operations Manual is finalized after the review and copies are provided to all staff.

### **1.2.1 Configuration Management**

The IOT&E Policy regarding Configuration Management (CM) is as follows: All Office of IOT&E-produced documents for external distribution referenced in the matrices must be under CM as described in the CM guides. (The CM Process is defined in the CM Plan, which is available on the IOT&E Management Information System (MIS).)

### **1.2.2 Additional Guidance**

In addition to the guidance contained within this document and its appendices, sample documentation, templates, and lessons learned are available on the IOT&E MIS. The content of the MIS is discussed in Section 3.5.2 of this document.

## 2.0 OPERATING GUIDELINES

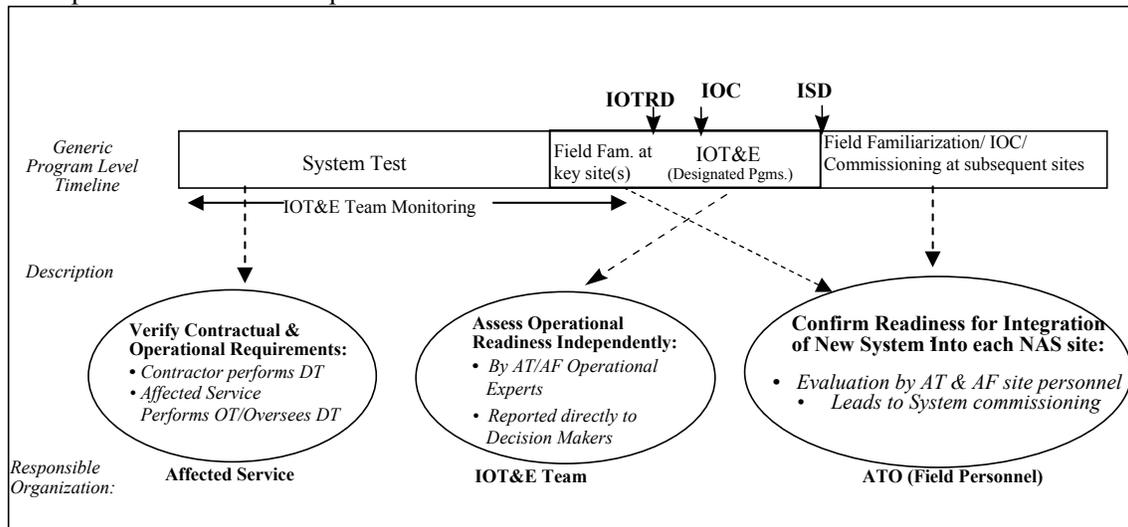
To successfully implement IOT&E, the staff

- a) Actively participates in the ongoing revision and development of agency policy and guidelines;
- b) Follows a set of agreed-upon internal procedures to ensure that the implementation of IOT&E is consistent and that it conforms to overall agency policy;
- c) Requests feedback from stakeholders and implements improvement to the IOT&E and related processes based on this feedback;
- d) Seeks to continually improve processes;
- e) Measures the impact of process improvement efforts via metrics (see Appendix G);
- f) Formulates, reviews, and updates (as necessary) a Strategic Plan. (**Note:** *Due to changes expected as a result of the ATO and activity value analysis, the Strategic Planning activity is currently on hold awaiting direction from ATO management.*) (See Appendix C);
- g) Supports and maintains a model work environment (MWE).

The following sections describe the IOT&E process from program designation through closeout.

### 2.1 AGENCY POLICY

When FAA documents are revised to reflect the evolving policies and guidelines of the Agency, IOT&E's role in early program monitoring and IOT&E activities must be incorporated. Figure 2-1 depicts the FAA's T&E process.



**FIGURE 2-1. FAA TEST & EVALUATION PROCESS**

To ensure that the FAA's IOT&E policy is properly formulated and documented, the Office of IOT&E will:

- a) Actively participate in committees that are formed to develop and implement policy that affects IOT&E, such as the Acquisition Management System (AMS) System Advisory Group (ASAG);
- b) Actively participate on strategic planning teams to ensure that IOT&E's role is properly understood; and
- c) Ensure that IOT&E is consistent with the strategies and objectives defined in the FAA and ATO planning documents.

## **2.2 IOT&E INITIATION AND COORDINATION**

### **2.2.1 IOT&E Designation Process**

Programs are designated for IOT&E by the Chief Operating Officer (COO) based on recommendations from the IOT&E Designation Board and the Vice President of the Office of Safety Services. The Board consists of the Directors of En Route and Oceanic Safety and Operational Support, Terminal Safety and Operational Support, Flight Services Safety and Operational Support, Technical Operations Support, Systems Operations and Safety, and the Office of IOT&E. Prior to convening the Designation Board, representatives from each of the above directorates meet to discuss the programs and recommendations. The IOT&E Designation Process is conducted at least once a year and is scheduled to support the FAA and Office of IOT&E budget development. Figure 2-2 depicts the IOT&E Designation Board Process. Key elements of the designation process include the following:

- The Office of IOT&E's Designation Lead is responsible for managing the designation process using the IOT&E Designation Process Guidance and Checklist on the MIS.
- The Office of IOT&E conducts a review of new and existing acquisition programs, gaining information from sources such as Mission Needs Statements (MNS), Requirements Documents (RDs), and Acquisition Program Baselines (APBs).
- The Office of IOT&E staff prepares Program Information Sheets that include designation recommendations based on the program review.
- In this same timeframe, the staff is required to update all existing Program Management Plans (PMPs) (at a minimum, the resource section). The Designation Lead and an IOT&E Director designee will analyze the resource estimates in the updated PMPs against the projected activities associated with anticipated program designation and IOT&E strategies, and, as necessary, develop resource mitigation strategies.
- Representatives from the Board's member organizations review the information package and develop recommendations for the Board to review.
- The IOT&E Designation Board reviews the program information and makes recommendations to the Vice President of Safety Services concerning IOT&E program designation and designated program priorities. The Vice President of Safety Services will make the final recommendations to the COO and Executive Council.
- The Board prioritizes recommendations based on potential operational impact, complexity, criticality, acquisition cost, and risk so that the Vice President of Safety Services can make decisions on IOT&E Designation relative to Office of IOT&E staffing and funding levels.

- The COO and Executive Council commit to providing sufficient resources to support the program designations.
- The COO sends a decision memorandum to the Executive Council, with a copy to the Associate Administrator for Regulation and Certification (AVR-1), which identifies all programs designated for IOT&E. (The ISD authority is no longer included, since the ISD authority level will be handled by the Joint Resources Council (JRC) secretariat.)
- Program-designation decisions will be reviewed at key program milestones. A decision to increase or decrease the level of IOT&E activity can be made at that time.
- If the COO removes a program from IOT&E Designation, the Office of IOT&E will prepare a decision memorandum to the Executive Council, for release by the Vice President of Safety Services.
- The Office of IOT&E will coordinate with the other Services to ensure that the requirements for IOT&E are documented in program RDs, and the ISD authority is reflected in appropriate documentation.

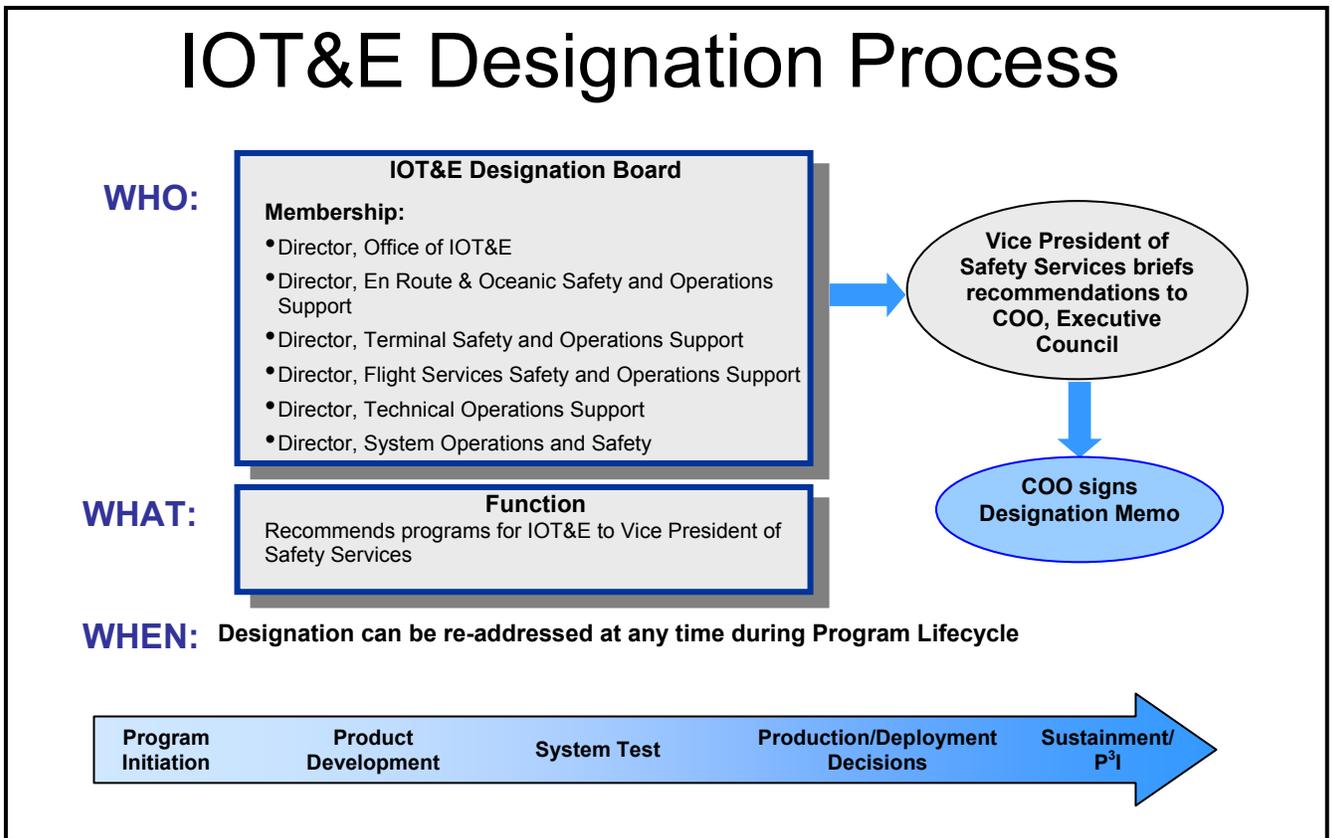


FIGURE 2-2. IOT&E DESIGNATION BOARD PROCESS

### 2.2.2 Assignment of IOT&E PM

Once a program has been designated for IOT&E, the Director of the Office of IOT&E will name the IOT&E PM for the designated program (see box below). The PM will then contact the appropriate lead for that program.

**Reminder:** After reviewing currently assigned programs/tasks, analyzing the level of effort, and considering the staff skill set, the Director of IOT&E assigns an IOT&E PM to lead a newly designated program. The PM then has 45 days to conduct an initial strategy session, and 60 days from that to produce a PMP. It is the responsibility of the PM to inform the acquisition team lead of the IOT&E designation and schedule an initial briefing on the IOT&E strategy.

If a program is designated after it is well into its Solution Implementation Phase (e.g., Operational Test (OT) has begun), it must be made clear to the designator and the affected Service team that the current program schedule may be impacted. The Office of IOT&E will need to work with the affected Service team to determine the impact and possible mitigation.

 **Program Transition Process**

Due to a variety of circumstances (i.e., staff changes or schedule slips), it is sometimes necessary to make a transition from one IOT&E PM as lead to another. In order to facilitate a smooth transition and ensure that the PM who takes on the program has all the information and documentation necessary to go forward, the following process should be used:

- Ongoing Program Management:
  - Incumbent PMs should keep their MIS program folder and associated subfolders (e.g., RD, ASP, IPP, System Test Plans, ISR checklist, and various IOT&E documents) current.
  - Email communications with affected Service team, IOT&E Team, and staff on program issues and document reviews should be saved.
  - Any hardcopies of Quality Assurance (QA) matrix documents should be kept in labeled folders along with supporting items (e.g., Comment Resolution Matrices, review comments/feedback, etc.)
- When the IOT&E PMs make the transition:
  - Incumbent PM and SENTEL lead are required to meet with new PM to:
    - discuss program status (using Status Review, if available)
    - review the MIS program folder, indicating what is available
    - transmit saved email messages
    - transfer the hardcopy folders
    - identify short term activities that require the new PM's immediate attention
    - review IOT&E Team membership and key Service team members, indicating expertise/responsibility areas and any necessary background information
  - after the transition meeting has been held, the new PM is required to email the Director (with a courtesy copy to the incumbent PM) stating that the transition has been successfully completed or that it has been completed with the following outstanding actions.
  - the incumbent PM should send an email to the Service team lead, the Service team Test Director, key stakeholders, and the IOT&E Team with a courtesy copy to the new PM and the Program Analyst to inform them that a new PM is assuming the lead on the IOT&E program. For persons who are frequent program contacts (such as Service team lead), a personal introduction may be desirable, if possible.

### 2.2.3 Level of Effort According to Program Phase

Once a program has been designated, the Office of IOT&E's involvement and level of resource expenditure depend on the program phase and type(s) of assessment(s) to be conducted: IOT&E EOA, Early IOT&E, and/or IOT&E. The IOT&E process has five general levels of effort, determined by the following activities: 1) Requirements Development; 2) Investment Decision; 3) Commencement of System Test; 4) IOT&E; and 5) Post-IOT&E.

- 1) Requirements Development - IOT&E's initial involvement focuses on supporting the development of the Requirements Document (RD) by facilitating development of the T&E section, including the Critical Operational Issues (COIs) and ensuring the testability of operational requirements. This is usually accomplished by IOT&E personnel participating as ATO T&E subject matter experts on Integrated Requirements Teams (IRTs). For the Initial Requirements Document (IRD), there is a standard section that describes the T&E phases. (Depending on the program, this section may need to be tailored.) The Office of IOT&E has a standard response for use on the IRD/Requirements Document (RD) clearance record. Resource expenditures are strictly internal (i.e., Office of IOT&E and SENTEL) and the level of expenditure is expected to be minimal. The Office of IOT&E may also support these initial activities for programs not designated for IOT&E.

Reminder: To remain independent, limit the scope of your involvement to supporting COI development, testability of requirements, and the test methods. Stay away from actually developing requirements.

- 2) Investment Decisions (ID) - Involvement focuses on development of the testing sections of the Acquisition Strategy Paper (ASP), the Integrated Program Plan (IPP), the final Requirements Document, and the preparation of the Program Management Plan. Subsequent to the ID, the Office of IOT&E refines the strategy and reviews the System Test planning documentation. Resource expenditures are still internal but will rise.
- 3) Commencement of System Test - The Office of IOT&E will be actively involved in monitoring the System Test program, including the review of the OT Plans, and, if resources are available, the DT/SAT Plans, forming the IOT&E Team, and developing the IOT&E Plan. The OT is always monitored, but DT/SAT monitoring is tailored to obtain information that cannot be obtained in any later testing. Resource expenditures will be expanded to include external resources (IOT&E Team, et al.).

Reminder: If a program is designated for IOT&E after the Investment Decision has been made, and close to the start of System Test, expect the initial level of resource expenditure to be high in order to prepare quickly for System Test and conduct IOT&E planning activities.

- 4) IOT&E Assessments - Beginning approximately five months before an IOT&E EOA, Early IOT&E, or IOT&E conduct, resources and activities will be at their highest levels. IOT&E Support and the IOT&E Team will be completing the Procedures document, making final preparations for the assessment, supporting the Service team in the development of the IOTRD (if required), conducting the evaluation, writing the Report, and briefing the assessment.

- 5) Post-IOT&E - Following the completion of the IOT&E Report, the IOT&E PM and Support Lead will be preparing the Lessons Learned brief, writing Letters of Appreciation, planning the Follow-up Evaluation, tracking the ISD Action Plan (AP) status, and conducting the Follow-up Evaluation. The standard level of effort will be approximately 10% of the PM's and Support Lead's time over five to six months.

## **2.2.4 Information Gathering and Sharing**

### **2.2.4.1 Information Gathering**

Once a program has been designated, the Office of IOT&E will quickly begin gathering information about the program. Information should be obtained from the affected Service team. Other sources of information include operational documents such as the MNS and RD, and most importantly, the operators and users. The program schedule, ASP, and IPP are also important sources of information that should be obtained early to support IOT&E planning and scheduling. Additional information can be obtained by discussing System Test philosophy and obtaining existing test documentation from the appropriate Service test organization. As part of the IOT&E information gathering and planning process, the IOT&E PM should be aware of the documents listed in Matrix 2 of the Quality Assurance Plan (Appendix B). Listed in this matrix are documents that the IOT&E PM and support should either be knowledgeable about or must review. The matrix specifies the proper action.

☞ In setting up and maintaining the files for a program's IOT&E, each PM should have, as a minimum, files for each document and process listed in Matrices 1 and 2 of Appendix B. This will facilitate a smooth transition if the IOT&E PM changes.

### **2.2.4.2 Information Briefings**

The IOT&E PM can anticipate presenting a series of briefings to the affected Service team, the Test Working Groups (TWGs), the Regional 400/500 offices where IOT&E will be conducted, and ATO organizations, on subjects such as an IOT&E overview, lessons learned from previous IOT&Es, and a program-specific IOT&E strategy. If more than one IOT&E activity is planned, ensure this is understood, along with the possible need for more than one ISD. The Office of IOT&E has developed a generic briefing package to facilitate these presentations. The IOT&E PM should use the most recent version of the brief from the MIS BEST\_INFO folder. Briefs should be tailored by adding back-up slides or deleting slides to meet the audiences' needs. Information on the existing slides should not be changed. When initially briefing the Service team, PMs should include briefing slides such as "Trends in IOT&E" and "Results of Previous IOT&Es" from the Generic Brief to inform them of the types of operational issues found in previous IOT&Es. The PM should discuss the schedule with the affected Service team to ensure it allows time for IOT&E activities (typically seven weeks) between Initial Operating Capability (IOC) and ISD. The affected Service team should be made aware of the need to prepare an early shipment request if they plan to ship systems to sites other than the key site prior to the ISD.

The IOT&E PM should brief the 400/500 Managers from the Region(s) where IOT&E will be conducted when firm schedule information is available. In some cases, an earlier Region brief may be necessary if we are requesting resources that are limited. In other cases, the IOT&E PM may want to wait and combine the briefing with a site visit. It is up to the IOT&E PM to

understand the needs of that Region as they relate to timing of the coordination for the IOT&E program. After each regional or field briefing, the PM should document the names of the attendees and send this info to the Stakeholder Briefings POC (see Section 3.2.3).

Reminder: Field/Regional Managers are concerned about: 1) who is the Office of IOT&E? 2) what are my responsibilities as Manager? 3) how will IOT&E benefit my facility? 4) how are IOT&E activities funded (i.e., travel)?, and 5) what resources are needed (e.g., IOT&E Team members)?

In some instances, the IOT&E PM may need to provide program information to the Administrator. The Office of the Administrator has developed a template that all FAA organizations should use for all memorandums sent to the Administrator. The template is to be used for all information or decision material the IOT&E PM sends to the Administrator. That includes briefing material for the Administrator’s meeting and events—both internal and external—as well as information memos and alerts. All memos from the Office of IOT&E must be initialed by the Vice President of Safety Services. A copy of the template and guidelines is on the MIS at BEST\_INFO/AOA\_Briefing\_instructions/.

**2.2.4.3 Information/Document Requests**

When organizations external to the FAA (GAO, DOT IG, etc.) request to meet with IOT&E PMs or request copies of IOT&E documents or reports, the PM should consult Figure 2-3 and do the following:

- Make sure Director is aware of the request to meet or the request for documents;
- If a meeting is planned/conducted,
  1. ask for their questions in advance
  2. consider having the Service team lead in attendance (dependent on topic)
  3. prepare a “note to file” to document the highlights of the meeting (email is fine).
- If the organization requests IOT&E documents, ask that the request be put in writing, noting what specific items are being sought; and
- If the request is for a hard copy, and in agreement with Figure 2-3, provide the requested information via a memorandum signed by the Director.

<b>Document Requested</b>	<b>Internal FAA Request Honored</b>	<b>External to FAA Request Honored</b>	<b>Provide via Hard Copy</b>	<b>Provide via Soft Copy (PDF Only)</b>
<b>White/Issue Paper</b>	<i>YES</i>	<i>NO</i>	<i>OK</i>	<i>NO</i>
<b>IOT&amp;E Plans</b>	<i>YES</i>	<i>YES</i>	<i>OK</i>	<i>OK</i>
<b>IOT&amp;E Procedures</b>	<i>NO</i>	<i>NO</i>	--	--
<b>IOT&amp;E Reports</b>	<i>YES, after stakeholder brief</i>	<i>YES, after ISD</i>	<i>OK</i>	<i>OK with cover memo attached *</i>
<b>Follow-up Report</b>	<i>YES, after Stakeholder brief</i>	<i>Yes, after Brief/Distribution</i>	<i>OK</i>	<i>OK with cover memo attached *</i>

\*-- Internal or External Request: Ask why the requester wants a soft copy, and make sure the reason is consistent with IOT&E processes. If it is not, check with the Director.

**FIGURE 2-3. DISTRIBUTION AND METHOD FOR REQUESTED IOT&E DOCUMENTS**

### 2.2.5 Program Monitoring

The Office of IOT&E will monitor designated programs for potential risks to operational readiness from program inception through the end of System Test and/or Field Familiarization. Some monitoring may occur prior to establishing an IOT&E Team and will focus on identifying operational risks, facilitating the development of COIs with the stakeholder and test organizations, gaining program knowledge, and developing a working relationship with the affected Service as an extended non-decision making member. The following activities are accomplished to gather information and identify issues:

- Service team meetings are attended, notes are taken, and issues are raised.
- The Office of IOT&E is placed on the document distribution list; program and contractor documents are reviewed, focusing on test and operational documents; and comments are made as appropriate.
- Contractor presentations, reviews, demonstrations, Technical Interchange Meetings (TIMs), and prototype evaluations are observed as appropriate to obtain information.
- Positive work relationship between Service team and IOT&E Team.

During early involvement in a designated program, the IOT&E PM needs to ensure that the In-Service Review (ISR) process, IOT&E milestones (including the timing of IOT&E relative to IOC), and the ISD date have been incorporated by the affected Service team into the program's planning and schedules. The representative from the In-Service Management Division of the NAS Support Office is the POC for the ISR/ISD.

☞ While monitoring a program, the IOT&E PM should pay attention to the following Service team activities. They are indicators of a successful program.

- Early involvement by user groups
- Risk Management program established
- Focus on testing
- Frequent communication with stakeholders (especially key site)
- Positive work relationship between Service team and IOT&E

#### 2.2.5.1 Issue Communication

Program monitoring may identify potential operational risks, or a risk that operational issues may not be identified in System Test due to the approach/structure/conduct of the tests. These risks should be documented and sent by the IOT&E PM to the Director and/or to external organizations, via formal or informal methods. Examples of the following categories of communication are contained in the IOT&E MIS Best Info directory.

##### 2.2.5.1.1 Internal IOT&E Director Communication

In order to assure clear understanding and set expectations relative to changes in program strategy and approach, it is essential that there be consistent and clear communication between the IOT&E PMs and the Director. In addition to using the communication processes described below, IOT&E PMs and management should informally discuss program strategy and status.

- **Bi-monthly Activity Report:** Each IOT&E PM is required to provide a status report to the Director and the staff that covers the significant activities and issues related to the PM's programs

and other duties as assigned on the 1<sup>st</sup> and 15<sup>th</sup> of each month (if the 1<sup>st</sup> or 15<sup>th</sup> falls on a holiday or weekend, the status is due on the preceding work day). The report should be sent via email.

• **MIS Program Status Folder:** Each IOT&E-designated program has a status folder on the MIS that contains three documents that are important in internal communication with the Director: the Top Five Issues, the IOT&E Integrated Program Schedule, and the Program Fact Sheet. Each is required to be updated monthly and is briefly described below:

- 1) **Top Five Issues:** Used to document the current operational and/or programmatic issues that the Director should be aware of (each issue should have an origin date, and the header on the sheet should be updated monthly). As the commencement of IOT&E nears, the issues should migrate from programmatic issues to operational issues. This sheet does not need to list exactly five issues (it could have more or less). However, it should be a clear, succinct, and prioritized list so that the reader is able to easily understand the major operational and programmatic issues that are affecting the designated IOT&E program. Any scheduled milestones identified in these issues should be included in the IOT&E integrated schedule described below.
  
- 2) **IOT&E Integrated Program Schedule:** Used to indicate major programmatic and IOT&E events and milestones. In addition to a one-page graphical schedule, IOT&E programmatic information and resource tables are also updated by the IOT&E PM each month. This information includes the status of a program's IOT&E Strategy Session, IOT&E Plan, IOT&E Follow-up Evaluation, etc., as well as Office of IOT&E and SENTEL level of effort by quarter, travel estimates for the Office of IOT&E, SENTEL, and IOT&E Team, and Backfill Overtime (BFOT) resource requirements. This information is compiled for all programs in the IOT&E Program Information sheets. If there are significant changes in the schedule between MIS updates (the 15<sup>th</sup> of each month), the IOT&E PM is to:
  - Update the integrated schedule
  - Email the schedule to the Director (cc: to the ACY and the DC secretaries) with an explanation of the change
  
- 3) **Program Fact Sheet:** The Fact Sheet should contain a technical description of the program, a brief acquisition history, and any programmatic issues not listed in the Top Five issues area. It should be reviewed monthly and updated in preparation of JRCs and Acquisition Reviews (ARs). In addition, if there are significant programmatic changes, the Fact Sheet should be modified.

• **JRC and Acquisition Review (AR) Pre-briefs to the Director:** (**Note:** *The JRC and AR process is under revision due to the ATO transition.*) The IOT&E PMs are expected to pre-brief the Director, who will forward the briefing to the Vice President of Safety Services. These steps should be followed:

- 1) The pre-brief should be scheduled on the Director's calendar to occur two days prior to the AR/JRC. (If, two days before the AR/JRC, the briefing materials are not available from the affected Service team, the briefing should be scheduled as soon as possible after the materials are received.) If there is more than one IOT&E program covered by an AR/JRC, the PMs should coordinate their briefs. The briefs don't have to be done concurrently, but each should be aware of what the other has planned.
- 2) The pre-brief should last 30-45 minutes (max) per IOT&E program. The support lead should attend the pre-brief, at least by telcon.

- 3) These products should be used in the briefing:
  - a) MIS Program Status Folder Products
  - b) A copy of the draft AR/JRC package that the affected Service team plans to brief, with redlines for areas of concern or questions for the Vice President of Safety Services to raise

- **Other Communication:** The IOT&E PMs may be required by the Director to provide additional information on operational or test issues from the MIS Program Status folder, from the IOT&E Information System (IIS), or from monitoring System Test.

#### 2.2.5.1.2 External Communication

- **Informal communication** includes both Issue Papers (which may consist of a note distributed via email) and verbal communications to the affected Service team. Final versions of all Issue Papers should be dated and have their distribution documented (either via a note to file or via the email that sent the paper). In addition, the PM should document with whom the Issue Paper was discussed within the ATO. Issue Papers should be coordinated with the working level in the affected Service team and the NAS Support Office in the Technical Operations Service prior to delivery. There are two types of Issue Papers that a PM would develop: General and Pre-IOT&E Operational Issues. All Issue Papers are required to have a footer that reads “Working Draft” and are sent as an attachment to an email (in PDF format only). The email serves as a “cover memo.” Internal versions, which go to the ACY and DC Permanent file (along with the cover email), should have CM numbers and Document History page. The version that is sent out has the Document History Page and CM numbers removed, is marked “Working Draft,” and includes the date it was sent.

- 1) General: Issue Papers will be developed throughout the program lifecycle as issues arise that warrant this level of communication.
- 2) Pre-IOT&E Operational Issue Paper: Closely following the conclusion of OT (or a phase of OT) (and prior to the IOTRD), the PM shall develop an Issue Paper that lists a summary of the significant\* potential operational issues carried in the IIS, along with any new issues from monitoring OT conduct. (There is no intent to send the “raw” data or issues from the IIS.) In addition, if after OT conduct there are still areas of concern or uncertainty with the system that were not fully explored, the ineffective elements or limitations to the testing and the potential operational impact should be captured along with the descriptions of the potential operational issues. The paper must be sent to, and reviewed with, the PM’s working-level counterparts in the affected Service and the NAS Support Office in the Technical Operations Service, and be emailed to the appropriate Directors of the affected Services and the Directors of Technical Operations Field Services and Technical Operations Support; the paper should also be briefed as warranted. The paper is always marked as “Working Draft.” The email to the Service team should state that the purpose of this paper is to inform our stakeholders and the affected Service team of issues that are present when entering into IOT&E, and that a formal response is not required. If there is an extended period between the end of OT and the IOTRD, or there are subsequent OTs, the paper will be updated prior to the IOTRD or after each OT. A Pre-IOT&E Issue Paper may also be required for an Early IOT&E. This should be addressed during the strategy discussion with the Director. (Issues from the Pre-IOT&E Issue Paper should be addressed in the Early IOT&E/IOT&E Report, noting which have been closed and which are still open as IOT&E issues.)

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\* see definition on page J-4

- **Formal communication** consists of white papers from the Director of IOT&E to the appropriate Directors of the affected Service teams and the Directors of Technical Operations Field Services and Technical Operations Support. These white papers are marked as “Working Draft.” The IOT&E PM works with the appropriate working level within the affected Service team and Technical Operations Field and Support Services during development of the white paper and prior to discussions between the appropriate Directors.

### **2.2.5.2 Facilitating Critical Operational Issue Development**

Critical Operational Issues (COIs) play an important role in System Tests and operational assessments, and problems are often created by inadequate COIs. IOT&E PMs are encouraged to assist the affected Service and their test organization in developing a complete set of measurable COIs that address the system’s operational effectiveness and operational suitability (see Appendix J). COIs should reflect high-level operational requirements and avoid inclusion of “issues of the day.” COIs used in later test planning by both the affected Service Test Lead and the IOT&E PM must be a direct lift from the RD. To ensure continuity, IOT&E PMs should refer to the FAA’s T&E Process Guidance document listed in the FAA Acquisition System Toolset (FAST) when describing COIs to other testers or users.

Reminder: IOT&E PM Involvement in the initial RD development is important to ensure the COIs are sufficient for evaluation purposes. Once the COIs are approved as part of the RD, they are baselined in the Acquisition Program Baseline (APB).

#### **2.2.5.2.1 Changes to COIs/RD**

If there is a need to change the COIs after they have been baselined, the Office of IOT&E and the IOT&E Team will assess the impact to system performance and the development effort.

*(Note: The changes to the COIs/RD will follow the re-baselining process as defined in AMS Policy and Guidance.)*

### **2.2.6 Test Working Groups (TWGs)**

IOT&E PMs are encouraged to participate on TWGs. This participation facilitates a full understanding by the Office of IOT&E of the Service team’s test strategy, and a full understanding by them of the IOT&E strategy, particularly as it applies to COI assessment and multiple IOT&E activities. Participation in the TWG allows the PM to share lessons learned from previous IOT&Es and to be involved in the review of documents produced by the TWG members. Participation also ensures that IOT&E resource requirements are explained.

### **2.2.7 Human Factors, CHI, or Other AT/AF Work Groups**

Many Service teams sponsor user groups that refine or develop operational requirements. These groups go by various names, most commonly CHI Teams, Human Factors Work Group or simply {program name} Work Group. In order to more fully understand the system under evaluation, IOT&E has an interest in obtaining minutes from the teams/work groups meetings and, if seen as beneficial by the IOT&E PM, monitoring user demonstrations that they may hold. The IOT&E PM should request the minutes through the affected Service. If there is any problem in obtaining the minutes, the issue should be raised through the Director.

There is no need for IOT&E to be a member of these groups, nor to attend all meetings (although occasionally there may be a meeting where the IOT&E PM determines it would be beneficial). IOT&E's independence from the requirements development process is of highest concern. A briefing to the workgroup on IOT&E along with the affected Service's test organization presenting a briefing on their role, may be helpful in their understanding the differences in testing between IOT&E and the affected Service.

### **2.2.8 Relationship with DoD on Joint Programs**

IOT&E PMs assigned to programs that are being jointly acquired by the FAA and the Department of Defense (DoD) have the responsibility to coordinate with the DoD to understand the roles of the two organizations relative to IOT&E on the program, and to come to a consensus on how and when the results/assessments will be shared and delivered to make key program decisions. A Joint Master Test Plan (JMTP) is the vehicle for these discussions and others that need to take place for DoD IOT&E and FAA IOT&E to have a productive relationship. The IOT&E PM should ensure that the FAA IOT&E results are available to DoD as soon as they are distributed within the FAA, as DoD IOT&E affects DoD acquisition milestones.

### **2.2.9 Operational Capabilities Tests and Demonstrations (OCTs/OCDs)**

With the increase of Commercial Off-the-Shelf/Non-Development Item (COTS/NDI) acquisition, there will be more frequent OCTs/OCDs and more system evaluation conducted prior to Contract Award. To maintain independence, IOT&E will not directly participate in OCTs/OCDs of designated programs, but will monitor these events to identify potential operational risks and areas of improvement in the evaluation process. Monitoring activities should also include reviewing plans for pre-contract evaluations and providing feedback on testing activities.

Specifically, during the conduct of OCTs/OCDs, IOT&E personnel and SENTEL will be present as observers, but will not have any role on the Technical Evaluation Teams nor partake in the Source Selection process. They can inform the Service team of any observed operational and/or testing issues. However, if the possibility exists that the IOT&E staff feedback could affect the outcome of the source selection, IOT&E should inform the Service team lead that the IOT&E participation must be included in the program's evaluation plans and the Screening Information Request's (SIR's) Evaluation criteria.

Further, if SENTEL employees are involved, the offerors must be informed that an employee(s) of the SENTEL will be observing the OCT/OCD, and all observers will have signed appropriate non-disclosure and non-conflict-of-interest forms.

## **2.3 IOT&E TEAM**

IOT&E Teams are composed of representatives from the organizations that will operate, maintain, or otherwise be operationally affected by the implementation of a new system, and a Lead from the Office of IOT&E. IOT&E Teams will include representatives from FAA management and Subject Matter Experts (SMEs) from the field. AT and AF headquarters members should be included to provide a national level perspective\* to the Team while the AT and AF field members provide a first-level operational perspective. There should be AT and AF members from the IOT&E site(s) on the IOT&E Team. If a second or additional IOT&E site is added at a later date, the IOT&E PM should, if at all possible, add AT and/or AF representatives from that site to the IOT&E Team. Additional Team members may include system users from such organizations as the DoD, airlines, National Weather Service, and general aviation.

Members representing the FAA or other government agencies must be federal employees. (There may be other personnel who serve as advisors during IOT&E but are not designated as Team members and do not participate in the caucus.) In addition, the Back-up IOT&E PM and SENTEL employees are not considered IOT&E Team members. IOT&E Team members participate in all activities for the duration of the IOT&E effort and should be maintained as a cohesive Team from kick-off through the Follow-up Evaluation and reporting. A commitment to attend the caucus should be obtained from each member and their managers.

\*It may be necessary to remind the Headquarters representatives throughout the IOT&E period of the importance of their national perspective to the system's assessment. In addition, second-level support representatives need to be reminded of their independence and role as IOT&E Team members versus their role in the system development.

### **2.3.1 IOT&E Team Formation**

The IOT&E PM serves as the IOT&E Team Lead and is responsible for defining the IOT&E Team membership based on the intended operational use of the system to be evaluated. IOT&E Teams are typically made up of five to twelve field and headquarters personnel. Disciplines often include Air Traffic Control Specialists, Air Traffic Supervisors, Airway Facilities System Specialists, Airway Facilities Management, Second-Level Support Specialists, Computer Operators, Air Traffic and Airway Facilities Headquarters personnel. (For an IOT&E EOA, a partial IOT&E Team is sufficient.) The lead is also responsible for coordinating resources; communicating roles and responsibilities; planning travel and meetings; conducting meetings; facilitating the Team's assessment, conclusions, and recommendations; and following operational issue resolution. The IOT&E Team formation should be completed approximately one month prior to OT, but no more than three to four months before IOT&E. (OT monitoring by selected IOT&E Team members can be conducted prior to kick-off.)

#### **2.3.1.1 Defining IOT&E Team Requirements**

As a first step in formulating a full IOT&E Team, the IOT&E PM should define the required composition of the Team for the IOT&E AT or AF POC. For programs that have multiple phases, the IOT&E PM should consider including members from the additional key sites or replacing original key site members with members from subsequent key sites. In order to avoid conflicts of interest, members of the HF or other work teams that have been involved in system design/development should not be team members. The request should be clear on the requirement for all Team members to attend IOT&E at the key site and the caucus.

#### **AF Team Member Request Information**

- REQUEST #1.n (See AF POC for #)
- Program Name:
- IOT&E PM:
- Date Request Prepared:
- Purpose/Event:
- Location(s):
- IOT&E Start Date:
- IOT&E End Date:
- Type of SME Needed:
- # of SME Needed:
- Need SME By:

- Professional Background:

There are examples of AF Team Member requests on the MIS under Best\_Info/IOT&E Team\_INFO.

### **AT Team Member Request Information**

- the number of AT field personnel required;
- the operational criteria for the personnel (location, experience with the system, longevity in the position); and
- an estimate of the time the personnel will need to dedicate to IOT&E, both while at their duty station and any required travel (IOT&E conduct, data collection, and data analysis may each require a percentage of a site person's time)

☞ To more accurately reflect their role, IOT&E Team members who belong to unions should be referred to as SMEs instead of union representatives.

#### **2.3.1.2 Coordination to Obtain IOT&E Team Members**

To ensure that the IOT&E Team is representative of the AT/AF workforce, the IOT&E PM should discuss the team's composition as part of the PMP and strategy sessions and discuss it with the IOT&E AT POC and AF POC. The IOT&E PM should ensure that the organizations providing the IOT&E Team members are aware that IOT&E Team members need to be independent of the development process and, if possible, not part of OT. IOT&E PMs use the following process to obtain IOT&E Team personnel. When coordinating for IOT&E Team members, either in formal memoranda or in speaking with person's manager or representative, the IOT&E PM should make clear the requirement of all IOT&E Team members to attend IOT&E events, especially the caucus, and that this attendance will require long-distance travel.

Reminder: Experience shows that forming an IOT&E Team can be a time consuming task. Begin the process early. Ninety days before the planned kick-off should be allowed for coordination with ATO Workforce Services, Operational Labor Relations, regional offices, field facilities, and labor unions. Communicate your needs to POCs regularly. If things appear to be lagging, be persistent.

The IOT&E PMs should coordinate with the test organization of the affected Service to avoid pursuing the same field personnel for your teams.

#### Obtaining AT Representatives:

- **Bargaining Unit Field Personnel** (*Air Traffic Control Specialists (ATCS) and Flight Service Station (FSS) Specialists*) – (**Note:** *This process is currently under revision.*) In order to obtain a prospective IOT&E Team member affiliated with a bargaining unit (e.g., National Air Traffic Controllers Association (NATCA), National Association of Air Traffic Specialists (NAATS), the National Association of Government Employees (NAGE)), a formal request must be submitted via memorandum from ATO, Acquisition and Business Services, Workforce Services, Operational Labor Relations through the IOT&E AT POC to the union President. The IOT&E

AT POC coordinates our requirements with ATO Workforce Services, Operational Labor Relations. The IOT&E PMs should provide to the IOT&E AT POC a draft memorandum via email, for ATO Workforce Services, Operational Labor Relations that includes operational criteria for the prospective team member, an estimate of the length of time the team member will be required, and approximate date, per Section 2.3.1.1. Prior to this, the PM should provide an email to the IOT&E AT POC specifying their request and requirements. The IOT&E AT POC will forward this email to ATO, Acquisition and Business Services, Workforce Services, Operational Labor Relations and NATCA as an advance notification. Sample memos and emails to assist the PM are found on the MIS at BEST\_INFO/LETTERS/REQUESTS.

- ***Non-Bargaining Unit Field Personnel*** (*Supervisory Air Traffic Control Specialists (SATCS), Supervisory Committee (SUPCOM) members, staff specialists*) – PMs should coordinate requests for non-bargaining unit field personnel with the IOT&E AT POC. The IOT&E AT POC will coordinate directly with SUPCOM. Once the SUPCOM representative is named, the AT POC will forward the information to ATO, Acquisition and Business Services, Workforce Services, Operational Labor Relations.
- ***Headquarters Personnel*** – The PM should coordinate requests with the appropriate IOT&E AT POC. The IOT&E AT POC will coordinate with the appropriate Service to obtain a representative. IOT&E PMs should describe clearly the selection criteria for the AT Headquarters Team member.

Obtaining AF Representatives:

- ***AF Personnel:*** The IOT&E PM should submit request(s) (via email) for AF IOT&E Team member(s) to the IOT&E AF POC. The IOT&E AF POC will submit the request(s) to the Technical Operations Support, NAS Support Office via their online tool. A schedule of IOT&E events and an estimate of the travel requirements for the request personnel will be required, per Section 2.3.1.1.

Obtaining members from other FAA Organizations:

- The PM is responsible for coordination with other FAA organizations (e.g., AVR). Along with requesting a Team member, the PM should also arrange to brief the member's manager on the IOT&E process.

Obtaining non-FAA Representatives:

For outside organizations, it may be necessary for the Director to be involved in the request for participation. Each PM is responsible for the necessary coordination.

- ***National Weather Service:*** Coordinate through the Manager of Communications, Flight Services, and Weather Engineering Office in the Technical Operations Service. A memo should be sent to the NWS headquarters in Washington, DC, as well as the member's local supervisor and Facility manager.
- ***Airline Pilots:*** Coordinate through pilot union representatives (e.g., Airline Pilots Association, Allied Pilots Association). A memo should be sent to the member's supervisor and/or union officer.

### **2.3.2 Coordination with Members**

Once the IOT&E Team members have been named, the IOT&E PM must call each member's manager and follow up with a memorandum/email (unless requested otherwise by the manager) to each IOT&E Team member (with a copy to the person's AT Supervisor and Facility Manager or AF Supervisor or Facility Manager, and Systems Management Office (SMO) Manager, and Headquarters manager for non-field member) that acknowledges his or her membership on the

IOT&E Team, who selected them, details on the kick-off meeting, the expected travel, funding mechanisms for IOT&E Team travel, administrative processes, and POCs within the Office of IOT&E (see the MIS for an example). The AT POC will forward the union selectee letter to the associated region's requirements branch and resource management branch, including information on the timeline of the IOT&E event. The memo/email should be very clear in making the member and the member's immediate supervisor aware of the requirement to be available in person at IOT&E and the caucus week. If there are any concerns about travel/attendance at these events, the PM needs to deal with it immediately. Inform the managers of each travel requirement with as much advance notice as possible. It may be necessary to replace a team member prior to completing IOT&E. If new, additional, or replacement members are required, the full coordination process described in 2.3.1.2 is required.

**Weekend Travel:**

1. There is not a written agreement between the Office of IOT&E and AF or AT to pay overtime to travel on Sunday for the Caucus. If the PM wants that to occur, the topic should be brought up during the facility, Systems Management Office (SMO), and regional briefings; the PM should coordinate with the IOT&E Team member's region to pay for overtime or change the member's schedule to allow for Sunday travel. If the AF member is above a GS-12 or Core Comp H-band, the region does not have to (or probably will not) pay overtime. Changing the Caucus schedule and trying to get the team released Thursday evening is one alternative; another is starting the Caucus on Monday afternoon. Even if the specialist is a GS-12 (H-band) or below, it is up to the region to approve the overtime, though the region is not required to do so. It is in the PM's best interest to coordinate all details as early as possible.
2. The PM should make sure to emphasize the mandatory Caucus travel at the briefing and ensure the managers' agreement. Emphasize the one possible Sunday travel for the Caucus when developing requests for team members.
3. The Office of IOT&E does not have funds to pay overtime to either AF or AT field personnel. If possible, the PM should avoid scheduling them for traveling to or from events on weekends.

**2.3.2.1 Ongoing Coordination**

In order to maintain communication with the IOT&E Team, the IOT&E PM should hold telcons and/or send emails to keep the Team updated on the status of IOT&E. Minutes of the IOT&E Team telcons should be kept and disseminated to the team shortly after the telcon. This can be especially important when there are significant schedule slips. In addition, as IOT&E gets closer, communication with the IOT&E Team is important to facilitate review/approval of the procedures, to coordinate travel, and to plan coverage during IOT&E conduct.

**2.3.2.2 IOT&E Team Meeting and Caucus Location**

The decision on where the IOT&E Teams meet (for both kick-offs and caucuses) is made by the IOT&E Program Manager based on a list of cities approved by the Director. This list of several centrally located, cost-efficient options will be regularly updated based on:

- Ease of travel to/from locations from throughout the United States
- Airline ticket cost and per diem rates

- Hotel/conference facilities that will enter into a cost-efficient long-term relationship with the Office of IOT&E due to repeat business
- Rental car rates (rental cars will be shared by a minimum of two to three people)
- Will the location pass the “*Washington Post* Test?” (e.g., places like Las Vegas and New Orleans are not acceptable)

Experiences by IOT&E Team will be taken into account (e.g., how the logistics work) when updating the list. Approval of waivers to use other cities will be made by the Director on a case-by-case basis and will be based on sound business decisions (ability to monitor T&E activities at a key site in conjunction with kick-off, etc.).

### **2.3.3 IOT&E Team Travel Funding and Backfill Overtime**

The Office of IOT&E provides funds to support travel (TDY) for all IOT&E Team members except for second-level support members (formerly known as AOS) and the representative from the NAS Support Office of IOT&E, who are requested to travel on their organizations’ funds, and BFOT for members who are operational field personnel except AF. The Office of IOT&E does not normally provide BFOT for AF IOT&E Team members. AF Facility Managers should request BFOT from the Regional 400, and the money is provided from the operational budget. The specific requirements for each of the areas are defined below.

#### **2.3.3.1 Procedures for Travel**

ATO provides travel funds to allow IOT&E Team members to support IOT&E (with exceptions noted above). The following are the procedures for IOT&E Team travel that is paid by IOT&E.

- Coordinate AF travel with the member for each individual trip, AF Facility Manager/SMO Manager, and Region 400.
- Formal coordination for field AT members is accomplished through the Virtual Filing Cabinet (VFC). Simultaneously, the PM should email the person’s manager/supervisor and the Region 510/540 to give them advance notice.
- IOT&E Team member information is entered into the Test Team Travel System (T<sup>3</sup>S): The SENTEL Lead populates the IIS with the IOT&E Team’s complete information (must include name and fax number for the IOT&E Team member’s travel point of contact and supervisor information); prints an IIS report for the PM’s verification and approval (PM initials the report); notifies the T<sup>3</sup>S Administrator where the IIS data is on the MIS so the information will be added to the T<sup>3</sup>S, and the Travel Coordinator will be notified of completion.

**Note:** *Any change to the IOT&E Team information is sent directly to the Travel Coordinator.*

- Create a Travel Matrix:  
A Travel Matrix must indicate the type of IOT&E Team traveler (AT/AF Field, AT/AF Local, DoD, etc.) because Travel Requests will be cut in accordance with these assumptions:
  - IOT&E does not pay for:  
Second-level Support (formerly AOS) from Headquarters, OKC or ACY  
NAS Support Office from Headquarters (formerly AOP)  
DoD
  - IOT&E pays for:  
AT Local (BFOT/Local Travel Costs)  
AT/AF Field

AT representatives from the affected Service (formerly ATP)  
AF Local (Local Travel Costs)  
NAS Support Office representative selected from the field  
Second-level Support from the field

**Note:** *Any exceptions to the Pay/No-Pay assumptions MUST be clearly identified on the Travel Matrix.*

- Coordinate Travel Request:
  1. The SENTEL Lead sends a Travel Matrix to the Travel Coordinator with any special instructions \* (i.e., when to cut Travel Requests, rental car needed/approved, etc.). The dates of travel and the event name should be included in the travel matrix and the email (if applicable).
  2. The Travel Coordinator will create a Travel Request in the T<sup>3</sup>S for each traveler and send/give it to the PM. The PM will review the request, notify the Travel Coordinator of any corrections, and approve the final request (PM initials off).
  3. The Travel Coordinator will obtain approval signatures for the PM-approved Travel Request(s) from the Program Analyst, who will assign the appropriation code to use on each travel order/voucher, and the Travel POC.
  4. The Travel Coordinator faxes the final Travel Request to each IOT&E Team member; gives a copy to the PM, Program Analyst, and SENTEL Lead; and retains a file copy.

\* **Note:** *PASS members from Alaska traveling to any Eastern Time Zone require two days to travel, due to the number of time zones.*

- Virtual Filing Cabinet (VFC):

After receiving a Travel Request from the Travel Coordinator, the Program Analyst will log the information into the VFC, if applicable\*. In the absence of the Program Analyst, the ACY Secretary will assign the appropriation code, and the Travel Coordinator will log them into the VFC. If changes to the VFC are required, refer to the note(\*) at the end of this subsection.
- If travel plans change:

The SENTEL Lead will email the Travel Coordinator explicit instruction regarding the changes (i.e., revised Travel Matrix, hotel reservation changes, instructions to cut new or revise Travel Requests, etc.) and will telephone the Travel Coordinator to ensure complete coordination. The Travel Coordinator will fax a copy of the revised IOT&E Team travel form to the traveler and provide copies to the PM, Program Analyst, and SENTEL Lead.

The Program Analyst will change the dates in the VFC system. The Program Analyst can make changes in the VFC for the following items: location, travel codes, event cancellation, and participant cancellation. The PMs should contact Howard Burnette at (202) 267-9090 to make all other changes.
- Travel Orders and Vouchers:

The travelers' offices will prepare the travel order/voucher, and their management will sign as the approving official. The PMs will provide the Program Analyst with a copy of the travel order prior to the trip. Vouchers must be submitted **No Later Than 10**

**Working Days** after the trip's end date. (The Program Analyst will remind PMs if they are past due.)

- Each month, the PMs will provide the Program Analyst with an updated estimate of travel costs for their programs. The Program Analyst will provide actual travel costs to the PMs every month.

\* When there is no travel involved and only local mileage, there should not be any "travel" entries in the VFC. Sites make those entries for local activities themselves. They only need advance notice by email or the employee or phone or fax that the meeting is occurring. Once the meeting/activity is completed, the sites make their VFC/BFOT entries. The sites can report/track/view the BFOT used in the VFC, just as on the travel side. The only difference here is that for onsite/local activities, there is no pre-approval/denial of the BFOT the site uses. In such cases, BFOT would be coordinated with the site outside the VFC process.

### ***2.3.3.2 Procedures for BFOT***

BFOT funds are provided by the ATO to the appropriate Regions to allow non-Headquarters IOT&E Team members to support IOT&E. Before the beginning of each fiscal year (FY), the Program Analyst (PA) coordinates BFOT requirements with Headquarters. The following procedures apply to IOT&E Team BFOT.

For AT BFOT:

- At least eight weeks prior to the need for travel, the IOT&E PM will provide the PA with the VFC travel request for AT and contact the field facility manager to request the support of an IOT&E Team member.
- The IOT&E PM confirms with the field facility manager the availability of the IOT&E Team member and requests an estimate if BFOT is needed (check the VFC to see the estimate entered for each activity).
- The Regions will be reimbursed for the actual amount at the beginning of the first quarter after the BFOT is used.
- If the IOT&E PM has not received confirmation from the field facility within two weeks after the request for support of an IOT&E Team member, the IOT&E PM should call the field facility manager and check on the status or check the VFC for AT (non-Headquarters) IOT&E Team members.
- The PM will provide the PA with the actual BFOT information (name, Region, facility, hours, dollar amount, number of employees, and pay period(s)).

For AF BFOT:

- The IOT&E PM informs the PA of the field facility manager's BFOT requirement. (The PA needs the IOT&E Team member's name, Region, facility, hours, approximate dollar amount, and pay period(s).)
- The field facility manager calls the Region 420 (AF) specialist to request BFOT funding.
- The Region 420 specialist provides the funding or if the Region 420 specialist is unable to meet this BFOT requirement, the PA will request the funding from Headquarters on a case-by-case basis.
- The field facility manager should verify with the IOT&E PM that the BFOT funding has been approved. If the IOT&E PM hasn't received confirmation from the field facility within two weeks after the request for support of a Test Team member, the IOT&E PM should call the field facility manager and check on the status.

- The PM will provide the PA with the actual BFOT information (name, Region, facility, hours, dollar amount, number of employees, and pay period(s)).

☞ BFOT posted more than 45 days before the need date may be denied, since it is assumed there is time for the facility to coordinate coverage. During prime time leave periods you may have to resubmit after 45 days.

Ongoing Actions:

- IOT&E PMs are responsible for including all IOT&E Team travel (except for IOT&E staff), and BFOT requirements in the T&E section of the IPP.
- IOT&E PMs should use the following formulas\* to determine BFOT and TDY funding estimates:
  - Continental United States (CONUS) Travel - \$1,500/week
  - Other Travel - \$2,500/week
  - BFOT - \$70.00 per hour times 1/4 of the hours the Test Team member is on travel
- IOT&E PMs will provide the PA with actual IOT&E Team BFOT and TDY costs as they occur– or within 10 working days after the travel ends.
- The PA will provide feedback to the IOT&E PMs on estimated versus actual BFOT and TDY costs each month. The Travel POC and the PA will continually manage overall BFOT and TDY requirements/expenditures, and along with the Director request appropriate funding.
- IOT&E PMs will submit their projected IOT&E staff travel to the PA every July for the remainder of the year and the next three FYs. The PA will provide the PM's projected versus actual spending, quarterly.

\*These numbers are based on averages. The PM should adjust their estimates as they gain experience so that the estimates more accurately reflect program costs. Unusual costs for very high-cost (Alaska) or very low cost travel locations should be considered.

### 2.3.4 IOT&E Team Responsibility

The IOT&E Team is responsible for conducting independent operational assessments of designated programs. IOT&E Team assessments and recommendations will be based solely on the IOT&E Team's analysis of operational performance and capabilities during an IOT&E EOA, Early IOT&E, or IOT&E, and of data collected during earlier test phases. IOT&E Team conclusions and recommendations will not be subject to control from external sources, including members' line management.

#### 2.3.4.1 IOT&E Team Kick-off

Prior to the Team's participation in IOT&E activities, it is important that the IOT&E PM bring the individual members together as a Team for a kick-off meeting, to understand the IOT&E process, and to promote a sense of ownership and empowerment. To minimize travel, the IOT&E PM should try to schedule this meeting in conjunction with training or other IOT&E activities that require the IOT&E Team's presence and about three to four months prior to IOT&E or just prior to OT. To help the IOT&E Team better understand the acquisition/development of the system under IOT&E and to more clearly make the distinction between IOT&E's role and the affected Service's role, it can be very beneficial to have a representative from the affected Service

address the IOT&E Team for two-three hours of the kick-off, but the representatives should only be present for that part of the kick-off.

At a minimum, the following should be addressed during the kick-off:

- Standard IOT&E Team expectations (see MIS/BEST\_INFO/WALLCHARTS)
- Operational Facility Protocol (Figure 2-8.)
- Travel, travel procedures (e.g., need to fax front page of voucher to the Office of IOT&E), and training requirements
- Refinement of the IOT&E strategy
- Objectives of IOT&E
- Clarification that IOT&E evaluates the system NOT the facility, nor its personnel
- Roles of each member (Headquarters = national perspective, Field = local perspective)
- System overview
- Use and meaning of the operational issue risk ratings and resultant system readiness assessment; in particular, the importance of following the definitions closely and using them consistently needs to be emphasized
- The need to stay with the Team and participate throughout the IOT&E process. (If a member can't be there for the caucus meeting, the Team needs to decide if a replacement should be named (if early enough) or the assessment can take place without the member)
- Consensus decision-making will be used by the Team. (Describe the process and get buy-in early.)

☞ If any CBI material or demonstration software for the subject system is available at the time of the kick-off, it can be viewed as a group, using the PC projection equipment. This can give the Team an initial familiarization with the system and stimulate thinking about MOEs/MOSs.

#### **2.3.4.2 Office of IOT&E Role**

The Office of IOT&E leads and provides full administrative support to the IOT&E Team during IOT&E Assessments. The Office of IOT&E facilitates the final IOT&E Team system assessment by ensuring proper collection, analysis, and reporting of results. The IOT&E Team Lead, with IOT&E Team members in attendance, presents the operational assessment of the evaluated system to the ISD authority. The Director represents independent testing within the FAA.

#### **2.3.5 IOT&E Team Training**

Training requirements for the AT and AF IOT&E Team members should be identified in the ASP/IPP and reiterated to the Service team's training lead. For some programs, the only training available will be a system overview/orientation at the William J. Hughes Technical Center (WJHTC) or the contractor's facility. When IOT&E occurs at a key site, the IOT&E Team members who are operational field personnel should receive the same training as key site operational personnel. Early coordination with the affected Service's training lead and the IOT&E Team members' Regional offices and site/SMO management is required when the course is official Academy training so the enrollee can be properly entered into the training system.

## **2.4 IOT&E PROCESS**

Prior to an IOT&E Assessment, the Office of IOT&E will have developed an IOT&E strategy and determined resource requirements, which are documented in the PMP, ASP, and the IPP. The IOT&E PM will form an IOT&E Team that will be responsible for finalizing plans and procedures. The IOT&E Team will then monitor System Test—focusing on the operational portion— conduct the IOT&E EOA, Early IOT&E, or IOT&E, produce IOT&E Assessment(s), brief the assessment, and support the Follow-up Evaluation. Figure 2-4 provides a visual description of the IOT&E Process; Figure 2-5 provides a more detailed look at the characteristics of each assessment type.

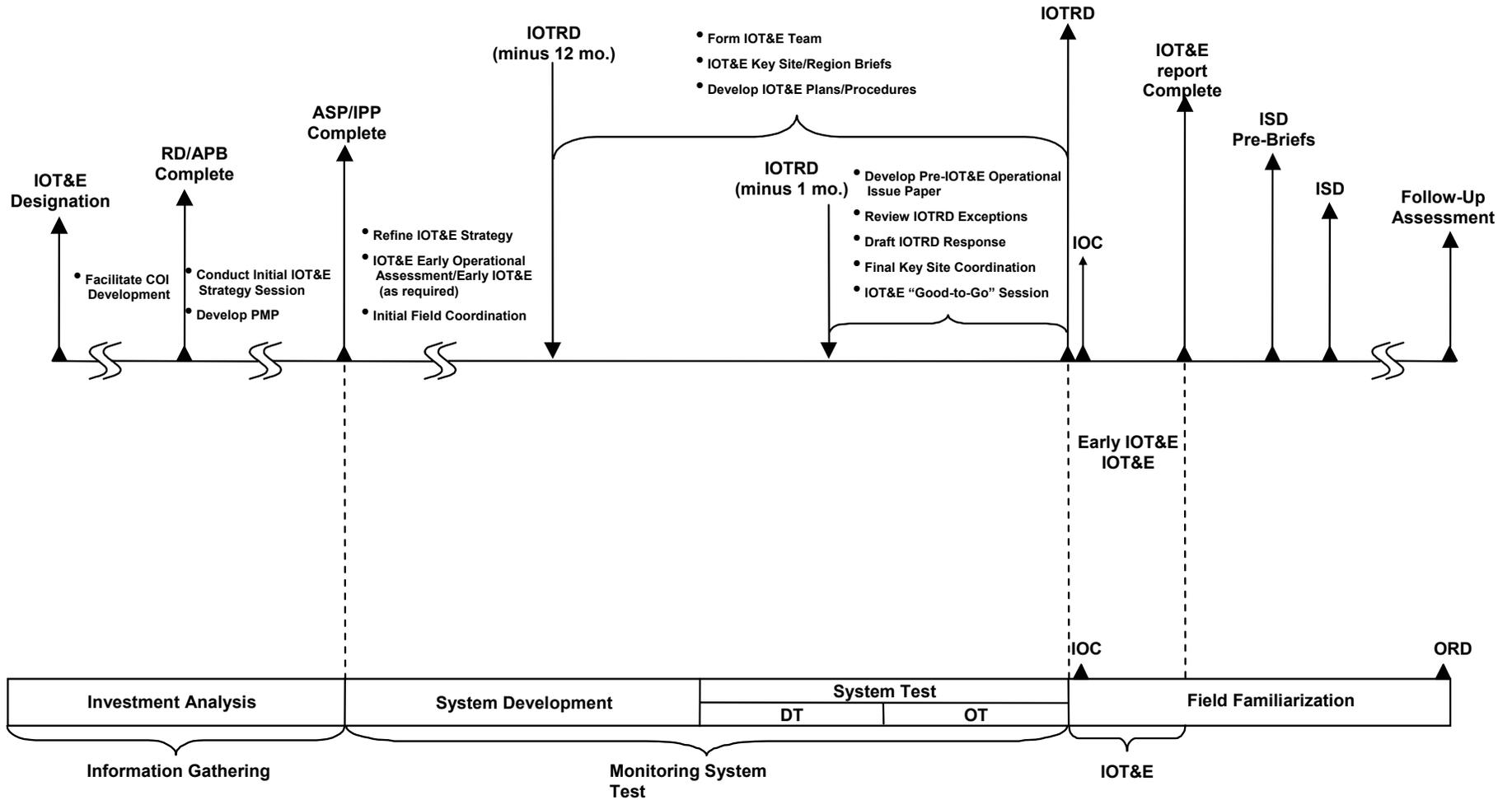


FIGURE 2-4. IOT&E GENERIC TIMELINE

<b>CHARACTERISTICS</b>	<b>IOT&amp;E EOA</b>	<b>EARLY IOT&amp;E</b>	<b>IOT&amp;E</b>
Deployment Decision?	NO	Phased/Limited/ Partial	ISD/National
Assessment of Operational Readiness?	NO	YES	YES
Will be used operationally?	MAYBE*	YES	YES
Identify Operational Issues?	MAYBE*	YES	YES
Identify Potential Operational Issues?	YES	YES	NO
IOTRD?	MAYBE	YES	YES
IOT&E Plan?	YES	YES	YES
IOT&E Procedures?	MAYBE*	YES	YES
Conducted by an IOT&E Team?	YES (partial team)	YES	YES
Planned in the ASP/IPP?	YES (if known)	YES	YES
Pre-IOT&E Operational Issue Paper required?	NO	MAYBE*	YES
Follow-up Report required?*	NO	MAYBE*	YES
Good-to-Go needed?	YES	YES	YES
Brief out?	Tailored	Full	Full
Resources for IOT&E?	Tailored	Full	Full

\*Discuss at strategy session with the Director.

**FIGURE 2-5. IOT&E ASSESSMENTS**

### 2.4.1 IOT&E Strategy

Each IOT&E PM must formulate an initial strategy for the designated project. The Initial Strategy Session should be conducted within 45 days of a program being assigned to a PM. Resources required to complete the IOT&E Assessment(s), the IOT&E schedule, and the IOT&E Team composition will be derived from this strategy. It is important to involve the Headquarters AT and AF IOT&E Team members, if assigned, in defining the initial IOT&E strategy to ensure operational considerations are fully captured. Initial sessions should include the Backup IOT&E PM and SENTEL. Once the initial strategy is established, the IOT&E PM should schedule a peer review session that includes the Director, IOT&E staff, and the appropriate SENTEL employees to gain staff input and management's approval and commitment to the strategy. The IOT&E PM should document the agreed-to strategy and any action items from the peer strategy review in an email message to the Director. The strategy will be detailed in the PMP and the IOT&E sections of the ASP and the IPP. The IOT&E strategy should be refined based on new information (e.g., change in acquisition strategy).

Using existing documentation (COIs, RD, APB, etc.) and the experience and knowledge of the group, these strategy sessions should address the various aspects of how to do IOT&E on the system in question. Some of the areas to address include:

- The need for an IOT&E EOA and/or Early IOT&E – if proposing an EOA or Early IOT&E in addition to an IOT&E, provide resource estimates for producing a White Paper versus conducting an event.
- System Test/IOT&E schedules, including timing of IOT&E related to IOC.
- The number and qualifications for field IOT&E Team members.
- The location and limitations of IOT&E site(s), including the need to change or add a key site.
- The necessity for supplemental evaluation sites and WJHTC testing.
- The strategy for working with DoD if it is a joint program.
- The types of data or analysis needed or most appropriate to assess each COI.
- Operational effectiveness and operational suitability of the system.
- Determining if it is likely that all COIs will be assessed directly during IOT&E, or whether System Test results may be required for supplemental data.
- Type of training needed for IOT&E Team members, and the Office of IOT&E.
- The amount of travel and BFOT required.
- Other resources required (special test equipment or test tools, facilities, Service test organization/Prime Contractor support).
- Contingencies for starting the IOT&E Assessment(s).
- Entry criteria if an EOA.
- Monitoring strategy.
- The decision IOT&E will affect.

#### ***2.4.1.1 IOT&E Review and Input to the ASP and IPP T&E Sections***

The IOT&E PM reviews and comments on the affected Service team's T&E strategy proposed in the ASP. The Office of IOT&E also provides the IOT&E strategy section for the ASP, which should include the areas the IOTRD should address (see paragraph 2.4.9 IOTRD). Any limitations to scope that might prevent the full assessment of COIs should be identified in this section. For the IPP T&E section, the IOT&E PM documents the IOT&E activities and required resources (excluding the Office of IOT&E and SENTEL costs), and repeats the IOT&E Strategy from the ASP. If the IOT&E strategy session has not yet been held on a designated program, generic input may be required. The input should clearly state that we will do an IOT&E, but if the acquisition strategy changes to include phases, etc., our strategy will change accordingly. If generic or specific language in an ASP/IPP becomes out of date because we have changed our strategy (e.g., from IOT&E to EOA plus IOT&E), it is the responsibility of the IOT&E PM to prepare revised IOT&E sections for the ASP and IPP and forward them to the affected Service. This documents the new strategy and informs the affected Service of our plans. The Office of IOT&E co-approves the T&E section of the IPP. The format and content for the IOT&E sections of the ASP and IPP can be found in the FAST in the ASP and IPP templates. The paragraphs below (2.4.1.1.1 through 2.4.1.1.6) describe specific information that should be included in ASP/IPPs.

☞ If there has been a significant delay between the initial strategy session and development of the ASP/IPP input, the IOT&E PM should schedule an internal IOT&E review meeting prior to these sections being submitted to the affected Service. All input to ASP/IPPs should be reviewed by the IOT&E Specialist.

#### **2.4.1.1.1 IOT&E Assessments**

The IOT&E section of the ASP/IPP should provide information on which type(s) of assessments are planned for the system: IOT&E EOA, Early IOT&E, and IOT&E. All subsequent information in the IOT&E section (evaluation facility, evaluation article, training, test equipment, and additional resources) should take into account the planned assessment(s), if applicable.

#### **2.4.1.1.2 Evaluation Facilities**

The majority of IOT&E will be conducted at operational field facilities. These facilities are generally the key site(s) that is/are/will be identified by the affected Service in the ASP. If the identified key site(s) is/are not suitable for IOT&E, the PM must work the issue with the affected Service. If the site(s) has/have not been selected, it is extremely important that the Office of IOT&E detail the criteria for IOT&E site selection in the ASP. The IOT&E site(s) is/are key to obtaining the needed information to make an assessment for an ISD. It may be necessary for the IOT&E PM to move and/or add sites later in the program if it becomes obvious that sufficient data cannot be collected at the planned site(s) or if the key site is or has been used as a system development site. In cases where unique non-operational test facilities (such as WJHTC) are required, IOT&E will define these requirements to the acquisition team and to acquisition test organization, and document the requirements in the T&E section of the IPP and ASP. Resources associated with these facilities are to be provided by the affected Service.

#### **2.4.1.1.3 Evaluation Article**

The IOT&E requirements for evaluation articles and their availability are negotiated with the affected Service and specified in the T&E section of the IPP. The final IOT&E operational configuration should be representative of the production baseline and be formally defined by the affected Service to the Vice President of Safety via the IOTRD.

#### **2.4.1.1.4 Program Training**

Prior to an IOT&E all participants, or some minimum number that is agreed to by the site management, will have completed standard field training on the new system being evaluated. Specialized system training for the IOT&E Team may also be required and will be supported by the affected Service. All required training resources to support IOT&E will be defined in the T&E section of the IPP.

#### **2.4.1.1.5 Program-Specific Test Equipment**

On extremely rare occasions, specialized test equipment may be required for IOT&E. In the T&E section of the IPP, the IOT&E PM should include the need for any specialized test equipment to be provided by the affected Service. Other general test equipment may be available from WJHTC.

#### **2.4.1.1.6 Additional Resources**

Other resources that may be needed from the affected Service should be defined, including Prime Contractor support, affected Service test organization support, use of WJHTC labs, etc. These items should be included because if they are not available on a no-cost basis from the affected Service, then the program's Facilities and Equipment (F&E) funding requirements will be affected.

### **2.4.1.2 Review of ASP and IPPs**

To ensure that the Office of IOT&E is providing the proper ASP IPP proper input, the following should be done:

1. Follow the review process in Matrix 1 of the QA Plan.
2. Check to see that any input is in agreement with the IOT&E Operations Manual and the MIS BEST\_INFO.
3. Make sure the affected Service team's T&E strategy in the ASP does not conflict with the IOT&E strategy. If agreement cannot be reached, let the Director know so that the disagreement can be worked. The Office of IOT&E only has IPP T&E section co-approval, not ASP co-approval.
4. Ensure that the key site(s) detailed in the ASP is/are representative of the intended operational environment.
5. Review (and comment if necessary) on Sections 12.1, 12.2, 12.4, and related sections (resources and schedule) of the ASP.

### **2.4.1.3 ASP and IPP Approval Process**

Due to the requirement for independence, the Office of IOT&E is the sole approval authority for the IOT&E subsections of the ASP and IPP. The IOT&E PM and the affected Service Lead co-approve the T&E section of the ASP and IPP. It is important that the Service team and IOT&E work together to resolve any issues with the ASP and IPP T&E sections prior to signature. Some programs are still using TEMPs instead of IPPs and ASPs.

## **2.4.2 IOT&E Status/Planning Tools**

The IOT&E PM and the Director use three important tools (in addition to the strategy sessions and monthly updates on the MIS) to plan and track IOT&E progress. These tools are the Program Management Plan, the Good-to-Go Checklist/Brief, and the IOT&E Program Status Review.

### **2.4.2.1 Program Management Plan**

Once the COO has designated a program for IOT&E and the Director has assigned an IOT&E PM, work should begin on an IOT&E strategy that is briefed to the staff (see 2.4.1). Once there has been a peer review session/briefing for the strategy, it is documented in a PMP (see Appendix D for more information). The initial PMP for a program should be approved within 60 days of the conduct of the initial strategy session.

When a program is designated for IOT&E while still in the Investment Analysis phase, and prior to establishment of a clear deployment strategy or schedule, the PM may request a "waiver" (via email to The Director) from the requirement to develop a PMP. The PM should state in the waiver request that the program is in the IA phase, when JRC-2 is tentatively scheduled, that SENTEL resource expenditures will be 10% or less, that there will be very limited or no travel or other expenses associated with the program, and that a PMP will be developed once the program obtains JRC-2 approval.

☞ To support budgetary planning Draft PMPs may be developed prior to the strategy session, if a PMP waiver has been granted, or if the designation of a program is expected but not yet official (i.e., the designation memorandum has not been signed). Draft PMPs, at a minimum, should include program resource estimates.

The initial PMP will be developed in conjunction with the ASP and IPP inputs, and updated as required to reflect significant changes to schedule, resources, program strategy or management tracking that may be caused by evolution of the designated program or by evolution of IOT&E policies and practices. Examples of changes that would require a revision to a PMP include:

- schedule changes that cause resource estimates to shift to a different fiscal year
- significant increase or decrease ( $\approx 20\%$ ) in funding or estimated funding requirements in any fiscal year
- significant change in personnel resource requirements
- significant changes to IOT&E strategies such as the number/type of planned IOT&E events
- a change to IOT&E Program Management processes that will impact the planning basis

IOT&E PMs are required to review PMPs every six months to determine whether an update is required. PMPs must be updated once per year in support of the development of the resource impact portion of the final designation package (Reference Appendix A). Annual PMP updates aren't required for programs that will be closed out by the end of the fiscal year.

PMPs form the basis for managing an IOT&E program. They are used to define the strategy, resources, activities, products, schedules, management tools, status reporting, and coordination activities that will be used to manage the IOT&E program. Information in the ASP, IPP, and IOT&E Plan must be consistent with the resource estimates and strategy identified in the PMP.

PMPs are submitted by the PM, reviewed by the IOT&E Specialist and Program Management POC and approved by the Director. PMPs are developed according to the guidance provided in Appendix D. Additional guidance and structure are provided in a PMP template, which is located in the MIS.

#### **2.4.2.2 IOT&E Program Status Review**

The IOT&E PM will conduct periodic status reviews at scheduled offsites, as requested by the Director. The IOT&E Specialist, in consultation with the Director, will develop a schedule every six months for upcoming status reviews. The purpose of these reviews is to brief The Director and staff on the current status of the IOT&E and to benefit from peer review. The review will address the status based on the PMP and current phase of IOT&E.

#### **2.4.2.3 Good-to-Go**

There are two parts to the Good-to-Go process: The Good-to-Go Checklist and the Good-to-Go Briefing. The PMs prepare and start to populate the Good-to-Go Checklist as they start the detailed planning process for an IOT&E EOA, Early IOT&E, or IOT&E. The checklist includes the due date and POC for all activities associated with monitoring, forming an IOT&E Team, developing a Plan and Procedures, coordinating and conducting an IOT&E Assessment, planning the caucus week, briefing out, and follow-up activities. The checklist is updated weekly.

 In addition to the Good-to-Go Checklist, the IOT&E PM should consider maintaining a To-Do Action Item tracking list for action items identified during planning meetings, IOT&E Team telcons/meetings, or other events.

The IOT&E PM must hold a “Good-to-Go” session with the Director, and the full technical staff to review the final preparations approximately one month prior to the IOT&E EOA, Early IOT&E, or IOT&E. The PM prepares a short set of slides, based on the checklist, that provides management with insight into the Office of IOT&E’s readiness. The result of the briefing can be a “Good-to-Go” approval

or actions that the PM must undertake prior to management giving its approval. If the IOT&E Assessment start date moves out significantly after the Good-to-Go is conducted, it is advisable to conduct a second, shortened Good-to-Go so that The Director is aware of the current status. The IOT&E PM should set up a telcon with the Director to provide status or close out any open items from the Good-to-Go session(s).

### 2.4.3 IOT&E Plan

Each IOT&E PM is responsible for developing an IOT&E Plan for each IOT&E Assessment to be conducted: IOT&E EOA, Early IOT&E, and IOT&E. The IOT&E Plan should take the strategy defined in the ASP and the IOT&E events listed in the IPP to the next level of detail. The scope of the IOT&E should be addressed, along with any limitations to the defined scope. The plan should also identify any IOT&E activities that have occurred earlier or that are planned to occur later, but are outside the scope of the current plan.

The plan should ensure that the COI decomposition addresses the system's operational effectiveness and operational suitability. The plan should include a Requirements Correlation Matrix (RCM) appendix that shows traceability from RD requirements to COIs to Measures of Effectiveness (MOEs)/Measures of Suitability (MOSs). There may be RD requirements that are not evaluated during IOT&E, which should be noted in the matrix. The RCM should be updated to reflect any COI changes made to the RD. (A sample of an RCM can be found in the IOT&E Plan template on the IOT&E MIS at DATA/BEST\_INFO/PLANS.) Generally, there are no more than six or seven MOEs/MOSs per COI. The RCM should be shared and reviewed with the working level of the affected Service and the NAS Support Office representative. The Plan should include the IOT&E Team's plan for monitoring System Test, Field Familiarization, and other test activities, such as operational evaluations. The Plan should also address any limitations to the assessment, along with mitigation for the limitations. The OT Plan should be reviewed prior to finalizing the IOT&E Plan.

☞ The following generic MOS for security must be included under the most appropriate COI for each system, "Has the system had a Security Certification and Authorization Package (SCAP) approved by the Information System Security Manager (ISSM) from the Technical Operations Service?"

The plan should address issues relative to joint FAA/DoD programs. If the IOT&E strategy is to work closely or overlap with Field Familiarization, the plan should detail how procedures and data collected will be accomplished. The plan should also acknowledge a process for handling concerns that do not fit the pre-established COI structure. In addition, the plan should provide the areas to be addressed in the IOTRD and note the IOT&E exit criteria. Responsibilities for the IOT&E Back-up, all IOT&E Team members, support, and participants should be clearly defined and the resources should be reanalyzed from the PMP to ensure they are still accurate given the more refined strategy.

The ideal concept for the IOT&E Plan is a document with sufficient detail and background so that it could be picked up (inherited) by any IOT&E PM and used to guide the IOT&E program.

☞ The IOT&E PM should use the following IOT&E Exit Criteria language: IOT&E will be considered complete when the allotted number of days scheduled in the IOT&E Plan for IOT&E has expired. The duration of IOT&E can be extended only by direction of the Director.

The IOT&E Plan should be developed in stages that involve the support team, peers, The Director and later, the full IOT&E Team (see Appendix B, Matrix 1 of the QA Plan for the review process). The IOT&E EOA, Early IOT&E, or IOT&E Plan provides guidance for the development of IOT&E procedures. Meetings should be scheduled regularly to review the status and assign responsibilities for plan development. A draft version of the IOT&E EOA, Early IOT&E, or IOT&E Plan should be developed either six months prior to the assessment or prior to the start of OT, whichever comes first. The plan should be finalized and approved no later than three months prior to the scheduled IOT&E/IOT&E EOA start date.

☞ The IOT&E PM should work with the Service team test organization and the IOT&E Team to decompose the COIs into MOEs and MOSs. This should minimize surprises about what will be evaluated. Refer to the T&E Guidance document on the FAST for information on COI decomposition. Each RD requirement should be statused/verified prior to IOT&E. The PM should know if any have been deferred or deleted.

The IOT&E Plan is signed by the IOT&E PM once the IOT&E Team gives its approval. Reviews by other organizations are for information only as time permits and are not for concurrence. It is up to the discretion of the IOT&E Team to incorporate any comments received from outside organizations. The final version of the Plan shall be distributed formally via cover memo to all affected ATO organizations that the Office of IOT&E interacts with no later than 60 days before the assessment. Revisions (e.g., strategy change, change to IOT&E Assessment process) to the plan can be accomplished via change pages (see CM Process). Distribution with a cover memo should be made to those who received the earlier version. When changes are minor, the redistribution of the plan can be handled via email.

☞ The following example for IOT&E Plan distribution should be tailored for each program (“x” indicates need to change for appropriate organization)

Director of the Office of IOT&E  
 Director AT Safety Oversight, AOV-1  
 Director of Safety and Operational Support of the affected Service  
 Director of Program Operations of the affected Service  
 Director of Technical Operations Support  
 Working level within the affected Service (e.g., Manager of Terminal Automation, [Name of Service team Lead])  
 Axx-400/420/470 (Regions)  
 Axx-500/510/540 (Regions)  
 Key Site(s) Facility Managers (AT and AF)  
 SMO Manager(s) (or Operational Control Center (OCC) if applicable)  
 IOT&E Team Members  
 ACY and DC IOT&E Permanent Files

#### 2.4.4 IOT&E Procedures

Each IOT&E PM is responsible for leading the development of the IOT&E Procedures. Procedures are required for Early IOT&Es and IOT&Es, and are discretionary for IOT&E EOAs. The procedures should be developed by the support team and IOT&E Team, and are signed by the IOT&E Team Lead. The Procedures document should be reviewed in accordance with Matrix 1 of the QA Plan. The Procedures document should be in final form 30 days prior to IOT&E and is generally not disseminated outside of the Office of IOT&E and the IOT&E Team (include the ACY and DC IOT&E Permanent Files on the distribution). The procedures are the final refinement of the IOT&E strategy first defined in the ASP, detailed in the IPP, and later developed in the IOT&E Plan. The Procedures should identify and describe any deviations from the IOT&E Plan (such as a change in limitations) and clarify/confirm the existing limitations to the scope of IOT&E. The IOT&E Team should ensure that the established procedures cover all of the operational requirements from the RD. Finally, the IOT&E Procedures provide detailed instructions for conducting the evaluation, gathering the data, and analyzing the results. The RCM from the IOT&E Plan should be expanded to provide information on data collection and type, or the procedures should include a Data Collection Matrix (DCM) appendix that identifies where data will be obtained and the “type” of data to be collected, e.g., checklist, questionnaire, and facility logs, for each COI. The DCM should be updated to reflect any COI changes that are made to the RD. (A sample of a DCM can be found in the IOT&E Procedures template on the IOT&E MIS.) The IOT&E Team requires procedures or checklists to allow for consistent data collection and recording of events that naturally occur in the course of using a new system. The procedures for data collection should undergo a dry run at the IOT&E site(s).

##### 2.4.4.1 Data Collection Methods

The IOT&E PM and Back-up PM should schedule a support team data collection planning session with SENTEL personnel in preparation for IOT&E. During this session, the Team (IOT&E staff and SENTEL) may develop a Data Flow Diagram to ensure consistency in data collection, entry, and reporting. The Data Flow Diagram should include, at a minimum, what type of data will be collected and entered into the IIS, how the data will be entered, what IIS reports will be used during IOT&E Conduct, Data Reduction and Analysis (DR&A), and Caucus, and definitions of IIS-related terms as they pertain to a particular program. It is important to identify any unique sources of data (e.g., MDR logs, PTRs, FF, etc.) as well as the POCs for obtaining these data, define all status entries that will be used (e.g., Initial, Hold, Open-Verify, etc.), and determine the IIS Reports that will be used internally by the support team, as well as those that will be distributed to the IOT&E Team. Discussions should also include how and when Questionnaire Database information will be entered, reviewed, and presented to the IOT&E Team. The Data Flow Diagram should be used in IOT&E Procedures and discussed with the IOT&E Team during IOT&E Conduct.

An early dry-run/walk-through at the key site may be necessary to really understand what data items are available or practical. IOT&E Team members will have insight from their own workplaces, but interacting with key site personnel regarding what can be collected, and how often, will make these determinations more realistic. The interaction can also help ensure that there is support and commitment at the site to make this data available.

**Note:** *Unique sources and status entries can be added to the IIS at any point during IOT&E, but early identification will minimize confusion among team members.*

##### 2.4.4.1.1 Questionnaires

One key element of data collection is the questionnaire. Questionnaires are developed during the Procedures development and must be reviewed by the Questionnaire POCs from IOT&E staff and SENTEL, prior to being sent to the unions for review. The unions should be informed that comments are

welcome within 30 days. If there are no comments or responses after 30 days, distribution of the questionnaires can proceed. Questionnaires should be completed at least 60 days before the assessment is scheduled to start to ensure enough time for union review and comment. Union review of questionnaires is handled by the Office of IOT&E's AT and AF POCs. The final procedures document should contain the approved, final questionnaires. To assist in questionnaire development, the MIS contains a repository of questions that have been used in previous IOT&Es and a template to format the questionnaire.

AT and AF Questionnaire procedures are as follows:

- NATCA/NAATS Coordination

The PM should provide the Office of IOT&E's AT POC with a soft copy of a transmittal letter from ATO Workforce Services, Operational Labor Relations to NATCA/NAATS National for ATO Workforce Services, Operational Labor Relations signature (with the questionnaire attached). (A sample letter is on the MIS/BEST\_INFO/QUESTIONNAIRES.) ATO Workforce Services, Operational Labor Relations-500 will prepare the memorandum, then forward the letter with the attached questionnaire to NATCA/NAATS for review and comment. After 30 days, the questionnaire (modified or not) can be given to the union member(s) on the IOT&E Team for coordination with the union representative at the IOT&E site.

- Professional Airways Systems Specialists (PASS)

The IOT&E PM should provide the IOT&E AF POC with a soft copy of the questionnaire. The IOT&E AF POC will forward the questionnaire to the Office of ATO Workforce Services, Technical Operations Labor Relations. That Office will prepare and forward a transmittal letter with the attached questionnaire to PASS National for review and comment. The IOT&E PM and the AF SME on the IOT&E Team can take care of obtaining comments and reviews from the SMO PASS representative and the local and facility PASS representative.

Questionnaire respondents' identity must be kept strictly confidential. The Office of IOT&E and the unions have agreed to the following process regarding questionnaire confidentiality:

- The Office of IOT&E ensures confidentiality in the collection and reporting of questionnaire results. The original questionnaire responses are destroyed.
- The Office of IOT&E will make the summarized results of the questionnaires available. The results from the questionnaires are only one data element that goes into the system assessment and recommendations.

The IOT&E PM should meet with facility management and union representatives to determine the best method to obtain a high response rate at that particular facility.

 Questionnaires should have a header that reads "Your participation is strictly voluntary."
--

A successful method to obtain a higher questionnaire response rate is to have site personnel from the IOT&E Team brief the intent and the content of the questionnaire to all participants and distribute them the first week of the IOT&E Assessment. If the IOT&E PM must brief participants individually, a list of facility personnel should be obtained to ensure progress toward complete coverage. During the last week of IOT&E, meet with all participants and distribute the questionnaires again. Participants should be requested to complete them at that time (if they have not already) and return them to the IOT&E representative. The higher the percentage of questionnaire completion, the more valid the data will be.

All comments written on the questionnaires are to be recorded “as is” in the questionnaire database. The Technical Editor can assist with guidelines for documenting spelling errors, expletives, or missing words.

#### **2.4.4.1.2 Interviews**

Structured interviews must adhere to the same procedures that are used for questionnaires. If the IOT&E PM plans to use a standard set of questions (in lieu of or in addition to a basic questionnaire), the union must have an opportunity to review and comment on the questions and ensure participation is voluntary and informal. The local union representative should be made aware of the interviews. This process is not necessary for casual questions from the IOT&E Team members to site personnel.

#### **2.4.4.1.3 IRAT**

The IOT&E Reliability Analysis Tool (IRAT) was developed by the Office of IOT&E to assist the PMs in the assessment of Reliability, Maintainability and Availability (RMA). Because of the limited time of IOT&E, RMA cannot be determined with high statistical confidence. However, by understanding this limitation, the PM can work with the affected Services to use data collected during System Test (Development Testing (DT) and OT) to increase statistical confidence. The IRAT is used in both the planning stage (how much data can be collected and what its effect will be) and in the collection/analysis phase following evaluation activities.

### **2.4.5 Planning at the Operational Site**

Preparations for an IOT&E Assessment at the operational site should begin at least six months before actual IOT&E EOA, Early IOT&E, or IOT&E conduct or earlier, if possible. The IOT&E PM, together with the local IOT&E Team members, should provide the facility management and Region a courtesy briefing which serves as a general introduction to IOT&E, and the particular program to be evaluated. At that time, the IOT&E PM should discuss with site management any events or concerns that might impact IOT&E, such as moving to a new facility or other new equipment coming at the same time. The site must also be made aware of the relationship between IOC and IOT&E, and between ISD and commissioning.

☞ Early in the program, the IOT&E PMs should inform/remind the affected Service and work groups not to schedule activities at the key site during IOT&E. Reminders of this restriction should be repeated throughout the program’s phases.

The IOT&E PM should work with the Site Test Director to ensure that Field Familiarization procedures address IOT&E issues. The IOT&E PM should also ensure that required Field Familiarization test events are identified early and can be accomplished by IOT&E participants at the operational site in the normal course of work.

☞ IOT&E PMs should coordinate with the Regional 470/420 and 510 offices prior to site visits.

During the few months prior to an IOT&E Assessment, the IOT&E PM should become familiar with the operational site. (See Facility Protocol notes under 2.4.10 IOT&E Event) The IOT&E PM should visit the site(s) often to arrange for both internal and external needs, to fully understand the operational environment, to review with facility management the percentage of time required by the key-site IOT&E Team members (see 2.3.1.1), and to identify resource constraints. Examples of internal needs include security clearances, facility access badges/codes, conference rooms, administrative support, workspace(s), access to telephones, fax machines, and copiers. Examples of external needs include local hotels for IOT&E Team members, conference rooms, print shops, 24-hour restaurants, overnight express locations, hospitals, and other necessary facilities.

Reminder: Typically, to allow the key site to be used for testing purposes, the affected Service will develop and get approval of a Test NAS Change Proposal (NCP). This allows the equipment to be evaluated in an operational environment. IOT&E PMs should ensure that test NCPs are in place for the key site(s) where the IOT&E will be performed. Some facility managers will allow IOT&E/Field Familiarization to be performed with the IOTRD memo from the affected Service that states the system is ready to be used operationally, along with the letter from the Vice President of Safety Services accepting the IOTRD and directing the commencement of IOT&E. This may be a good discussion point when you brief the Region and the site on IOT&E.

☞ IOT&E PMs have the responsibility of gaining a full understanding of the emergency evacuation plan for any facilities where personnel supporting the IOT&E will be traveling. This information must be disseminated to all IOT&E Team and support contract personnel who will be onsite at that facility.

#### **2.4.5.1 IOT&E Participants**

The success of IOT&E is predicated on the availability and participation of an adequate number of users who will provide input during IOT&E. Extensive up-front coordination by the Office of IOT&E and the IOT&E Team with both facility management and local union representatives is required to ensure that all evaluation activities occur on a strictly non-interference basis. IOT&E participants' involvement in IOT&E Assessments will take place at their own operational sites while they perform their normal operational duties.

#### **2.4.6 Monitoring System Test**

The IOT&E Team will monitor System Test as described in the IOT&E strategy. Monitoring is conducted to: 1) identify operational risks – the emphasis in System Test monitoring should be on operational tests; 2) obtain data not available during IOT&E; 3) observe operational testing to determine the applicability of the test results; and 4) enable the IOT&E Team to become knowledgeable about the system. Monitoring by the IOT&E staff and/or SENTEL personnel should be documented via a trip/meeting report. Monitoring activities may be conducted by the Office of IOT&E and SENTEL for most test activities, with operational members of the IOT&E Team brought in to monitor significant operational tests. IOT&E staff and/or the IOT&E Team should document on IOT&E Data Collection Forms, any operational issues seen during System Test monitoring. This will assist in the tracking of operational issues during IOT&E. Planning for the monitoring by using the RCM appendix to the IOT&E Plan will enable the IOT&E Team to efficiently use personnel where and when it makes the most sense.

When the Office of IOT&E has been called in at the last minute to conduct IOT&E on a program, major portions of System Tests may already have been completed. In this case, the IOT&E PM needs to acquire the test data and reports and review them as part of the data collection analysis effort.

☞ The IOT&E PM should provide feedback to the Director and the ATO Stakeholders following OT conduct via the Pre-IOT&E Operational Issues Paper (see 2.2.4.1.2).

## 2.4.7 Early Assessments

There are certain situations where an early assessment of a designated system is either requested by the COO, the Vice President for Safety Services, the ATO Stakeholders, or is suggested by the IOT&E PM and approved by the Director. Such a situation could involve the conduct of either an IOT&E EOA or an Early IOT&E. (See Figure 2-5.)

### 2.4.7.1 IOT&E EOAs

IOT&E EOAs are typically done on designated programs to yield valuable early insight into potential operational issues of a prototype or early version of a new system that is not intended to be deployed beyond the “test” sites. (There are no ISDs or assessments of Operational Readiness associated with IOT&E EOAs.)

In proposing or responding to a request for an IOT&E EOA, the IOT&E PM should develop a strategy for the type of IOT&E EOA that takes into account length, scope, entry criteria, limitations, constraints, expected results, etc. IOT&E EOAs should have separate Plans from the IOT&E Plan. The IOT&E EOA Plan should clearly detail any tailoring that is planned to the IOT&E Assessment process guidelines. It should be noted that IOT&E EOAs do not normally require IOTRDs prior to commencing, but do require some type of entry criteria (e.g., use of a specific baseline stability test, training of a certain percentage of users). An IOT&E EOA may require only a partial IOT&E Team. If so, the team should have more than one AT and one AF representative so that coverage can be provided and issue discussions can be balanced.

Throughout the IOT&E EOA process, it should be made clear that the IOT&E EOA is not a substitution for an IOT&E (this should be stated in all plans, reports, briefs, etc.). However, the identification of potential issues can provide practical information and is invaluable in defining the later IOT&E strategy for the developed system.

☞ By their nature, IOT&E EOA strategies vary based on the program’s acquisition strategy. It is critical that the IOT&E PM’s IOT&E EOA strategy is fully understood and agreed to by the Director.

### 2.4.7.2 Early IOT&E

When a system will have early or multiple/phased versions deployed, the Office of IOT&E may decide to conduct an Early IOT&E to support Phased/Limited/Partial In-Service Decisions. The processes for an Early IOT&E are the same as those for an IOT&E, and are covered in the subsequent sections 2.4.8 – 2.5.5.1 (with one noted exception under 2.5.5.1). The references in these sections to “IOT&E” are meant to include both Early IOT&E and IOT&E.

## 2.4.8 Pre-ISD Shipments

In some cases, the Service team may be planning to ship equipment to non-key sites prior to the ISD. The IOT&E PM should ensure that the Service team has been granted authorization to do this from the ISD authority. The AMS ISD Policy and Guidance addresses the shipment of systems for purposes other than key-site testing. Specifically, section 2.9.3 of the AMS Policy states:

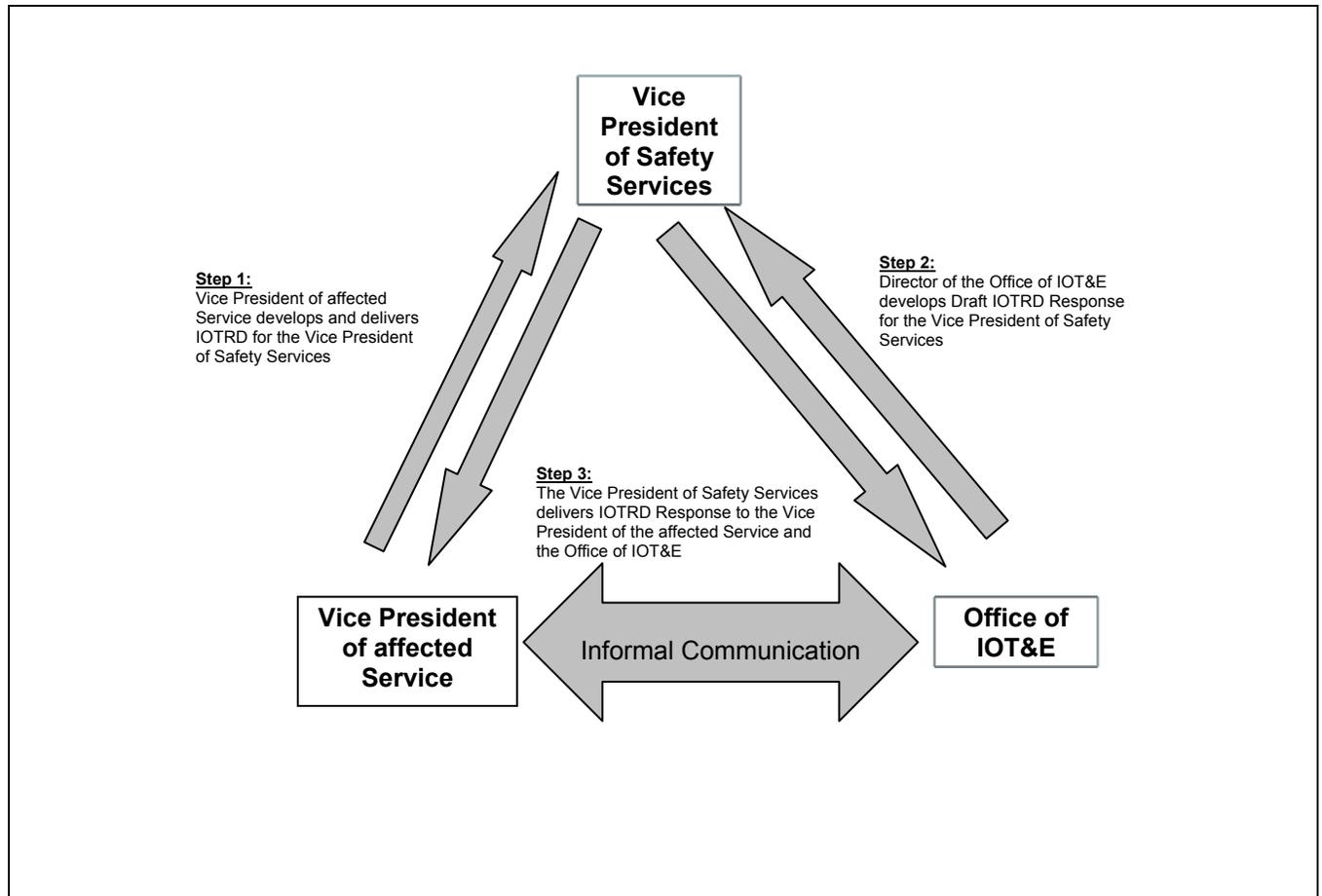
“In rare cases and with proper justification, a team may request the designated ISD authority to authorize shipment of required waterfall installations prior to an ISD. This authorization does not affect the regular ISR process or the ISD. The ISD is still required before a system can be placed into the in-service phase.”

The IOT&E PM should anticipate providing comments and a recommendation to the Director as input to the ISD authority prior to the acceptance of the formal request for early shipment. As part of the Office of IOT&E's comments or in assisting the Office of NAS Support in drafting a response to the request, the memo should address the ISD authority's position on operational use and IOC of those systems that are shipped pre-ISD. If available, the IOT&E Team Headquarters members should be used to assist the IOT&E PM with the recommendation.

#### **2.4.9 IOTRD**

When the affected Service determines that a system is ready to enter IOT&E, it must prepare an IOTRD for that Service's Vice President's signature. Figure 2-6 shows the IOTRD process. Through the IOTRD, the Vice President for the affected service declares in writing to the Vice President of Safety Services the system's readiness for IOT&E. The IOTRD addresses the readiness of the system for operational use and IOT&E, and the availability of resources required for IOT&E or IOT&E EOA. Several IOTRD examples can be found in the IOT&E MIS, and there is a template in the FAST. While the IOTRD format is not mandated, the minimum content that needs to be included in the IOTRD is defined by the IOT&E PM via the IOT&E section of the ASP. The IOTRD should address the following:

- Readiness of the system for operational use at the key site;
- Hardware/Software (HW/SW) Baseline: Release and installation of the hardware/software baseline that is intended for operational use and has been configuration-controlled (on those programs with complex site adaptation requirements, changes to the software adaptation may be necessary during IOT&E);
- Site Acceptance: Site acceptance by the FAA at the key site(s);
- Training: Required number of IOT&E participants' training is complete and representative of the national training;
- Manuals: Draft user and maintenance manuals are complete, available, and approved to be used at the key site;
- Key site IOC: Key site is ready to declare IOC for the system (see Section 2.4.9.3 for more information); and any other sites that will or have declared IOC prior to the ISD; and
- Outstanding Exceptions: The full description and plan for resolution of all outstanding issues for entry into IOT&E. (Attachments for each issue should be included.)



**FIGURE 2-6. IOTRD PROCESS FLOW**

### ***2.4.9.1 IOTRD Exceptions***

The IOT&E Team Lead should work with the Service team at least one month prior to the IOTRD to determine what possible exceptions to system readiness should be included in the IOTRD, and to ensure that any outstanding IOT&E Team issues are communicated to the acquisition team. Exceptions are defined as items or deficiencies that have potential operational impact and are open or unresolved at the time the IOTRD is delivered by the Vice President of the affected Service to the Vice President of Safety Services. Each exception should clearly define the problem and its potential operational impact, the temporary mitigation to the deficiency, and the long-term corrective action plan being taken by the Service team. The IOT&E PM and IOT&E Team should analyze the exceptions to determine the impact on IOT&E. In analyzing the readiness for IOT&E, some specific items that should be reviewed are:

- Has the Service team evaluated/CM'd/optimized the HW/SW baselines?
- Have users (AT and AF) evaluated the training?
- Have manuals and Technical Instruction Books (TIBs) been evaluated for thoroughness (certification/56-day update)?

### ***2.4.9.2 IOTRD Responses***

Upon receipt of the IOTRD, the IOT&E Team will review any identified exceptions and recommend one of the following Vice President of Safety Services responses:

- If all known operational deficiencies are identified by the affected Service in the IOTRD, the Vice President of Safety Services will--
  - Accept the IOTRD and direct the commencement of IOT&E; or
  - Reject the IOTRD because the identified exceptions are too risky to subject the system to an operational evaluation.
- If all known operational deficiencies are not identified by the affected Service in the IOTRD, the Vice President of Safety Services will--
  - Accept the IOTRD but inform the affected Service that, if after commencing IOT&E the unidentified exceptions are considered to cause serious operational impact, the system will be returned to the affected Service for further development; or
  - Reject the IOTRD pending delivery of an updated version that fully defines these deficiencies as exceptions.

The IOT&E Team Lead is responsible for developing a memo from the Vice President of Safety Services to the Vice President of the affected Service and the Office of IOT&E citing acceptance or rejection of the IOTRD and the commencement or non-commencement of IOT&E. The memo should have a distribution equivalent to the IOT&E Plan, including the IOT&E sites, Region offices for those sites and the Service team. The draft response should be coordinated with the Technical Operations Service and/or System Operations Service (as appropriate) prior to obtaining the signature of the Vice President of Safety Services. The IOT&E IOTRD Response Point of Contact can assist PMs with this process (see Section 3.2.3). The memo should be clear that the Vice President of Safety Services is accepting the IOTRD, not the system, and should direct the start of IOT&E.

The memo should identify any sites that will have IOC dates prior to the ISD and planned system configuration changes. Exceptions incorporated into the IOTRD should be addressed during IOT&E and included in the IOT&E Report (2.5.7.4).

☞ The IOT&E PM should work with the affected Service to schedule the delivery of the IOTRD to the Vice President of Safety Services. If the affected Service does not schedule an IOTRD or if it is delayed affecting IOT&E, the Director should elevate the issue to the Vice President of the affected Service. The PM or Backup PM should plan on being at FAA Headquarters on the IOTRD due date to coordinate its acceptance and must provide a copy of the IOTRD to both the ACY and DC secretaries for possible reference during IOT&E.

#### **2.4.9.3 IOTRD and its Linkage to IOC**

The IOTRD is defined as policy via the AMS. For most programs, the IOTRD should be issued prior to or at the same time as the key site IOC. There are some cases where post-IOC System Test activity is thought to be necessary by the Service team. In these cases, this activity must be defined in the ASP and the IPP and described in detail in the OT Plans and Procedures. The link between IOC and the IOTRD for each program should be clearly discussed and described by the IOT&E PMs in IOT&E Strategy Sessions and in the IOT&E Plan.

If additional System Test is required after IOC, the following is recommended:

- The IOT&E PM should ensure that the Service team updates and modifies the OT Plan (and Procedures) to describe the need for the post-IOC testing, content of the testing, duration, and potential effects on operational use at the site during post-IOC tests. In reviewing and working with the Service team on modifications to the OT&E Plan and Procedures, the IOT&E PM should consider the effects on IOT&E and brief them to the Director.

- The Service team should specify in writing to the ISD authority which sites, if any, are declaring IOC early and get confirmation of the early IOCs from the ISD authority.

☞ It may be less intrusive to the site if only local IOT&E Team members are on site for two-three days following a new system transition.

Reminder: Ensure that post-IOC System Test activities are limited to what is required to allow the affected Service to declare the system ready for IOT&E. This may require “give and take” negotiations between the IOT&E PM and the Service team test lead.

#### ***2.4.9.4 Changes to the Configuration of a System Undergoing IOT&E***

Due to maintenance philosophies, the need to correct known deficiencies and problems that arise, the system HW/SW configuration may be modified during IOT&E. It is the IOT&E PM’s task to be aware of the changes and their affects (if any) on IOT&E and the field. The IOT&E PM should address up front the potential for changes to the system and their possible effects with the acquisition team via the ASP and the IPP. The ASP and the IPP should state that the schedule and IOT&E planning is based on the assumption that changes made to the system configuration during IOT&E will be limited to “normal operational changes.” If changes beyond these are made, the IOT&E Team will need to assess the impact on the IOT&E schedule. As a reminder to the Service team, the response memorandum to the IOTRD should also address the configuration and its effects on IOT&E.

There are generally three reasons that the system configuration would be modified:

1. As part of the system’s maintenance philosophy, SW may be updated on an as-needed basis by second-level support to handle problems found or to update the adaptation. In this case, the IOT&E PM would want to evaluate how well this change process works in the operational environment. The method for evaluating the change process should be in the IOT&E Plan and the IOT&E Procedures.
2. To address a known problem, an exception may be declared in the IOTRD that also details the planned fix during IOT&E. In this case, the IOTRD would provide the rationale for the change, the timeframe for it, and its impact. The Office of IOT&E would be aware of the change prior to IOT&E, but not in time to affect the plan and/or procedures document. The IOT&E PM and IOT&E Team must decide the best way to evaluate the impact of the configuration change with the least effect on the IOT&E schedule. The ATO Stakeholders should be made aware that additional time may be necessary to properly evaluate the system with the change.
3. The third type of change is one that needs to be made due to a problem that is identified during the IOT&E period, and the operational impact of not making the change outweighs the IOT&E (or possibly deployment) schedule concerns. The IOT&E PM and IOT&E Team will need to decide if they can accommodate the evaluation of the change in their planned IOT&E schedule, or if an extension to IOT&E should be recommended to the Director of the Office of IOT&E. If the extension will affect the ISD, it should be coordinated with NAS Support Office and worked through the ISD authority. In the case of an EOA (thus no IOTRD), the Director will prepare a memo describing the reason for the extension and the probable new start date. This type of change provides the IOT&E Team with an opportunity to assess how system upgrades are accomplished and the effect on the operations.

### 2.4.10 IOT&E Event

A key ingredient for completing a successful IOT&E is preparation. The IOT&E PM provides leadership to the IOT&E Team, coordinates with the Team members and their managers, serves as a POC to the ATO Stakeholders, facilitates the IOT&E conduct by coordinating with the sites and Regions, and coordinates IOT&E participants, IOT&E Team members, and support personnel throughout the IOT&E process. Approximately two weeks prior to IOT&E, the PM should hold a meeting or telcon with the IOT&E Team and SENTEL to review the planned activities, facility protocol, roles and responsibilities, the schedule, and standard operating procedures. At this time, the IOT&E PM should ensure that the IOT&E Team members understand their respective roles during IOT&E. The IOT&E PM should also develop a “fall-back plan” to accommodate the possibility of an IOT&E Team member not being available during IOT&E. During IOT&E, the PM should keep the Director informed of the status. Calling during the Director’s regular commuting time is effective in keeping in contact.

A daily evaluation schedule should be constructed based on the IOT&E objectives and procedures with individual task sheets for each IOT&E Team member onsite. A complete listing of all MOEs/MOSs that can be checked off as evaluated may also be beneficial in assuring all operational requirements have been evaluated. Air Traffic IOT&E Team members should be encouraged to bring their headsets and plug in, if such action is appropriate for the program and agreed to by facility management. It is important that the IOT&E Team and SENTEL personnel provide complete coverage at the key site so that all data and events can be monitored. Also, time should be allocated to address any previous data collection shortcomings or inadequacies.

Reminder: Using a digital camera to capture anomalies on AT/AF screens or physical problems with equipment can be very helpful in documenting issues. A picture is worth a thousand words! Until the team caucus you won’t know which specific “pictures” are needed to support the issue, so capture as much video documentation as possible. Inserting the picture in the IOT&E Brief can be very beneficial in helping to explain the problem.

☞ The IOT&E PM needs to make sure that their IOT&E Team understands that files/data from the IIS are not to be shared outside the IOT&E Team. This information is considered a DRAFT working paper. If the IOT&E Team member receives a request (verbally or in writing) from anyone for this data, they should refer the inquiry to the IOT&E PM, who will handle it. In addition if during IOT&E the IOT&E Team members are asked to be interviewed or have a discussion about the system undergoing IOT&E they should inform the IOT&E PM, and work it through the PM, before making any comments or responses.

**FIGURE 2-7. OPERATIONAL FACILITY PROTOCOL FOR THE OFFICE OF IOT&E**

- On the first day at the site, the IOT&E PM should meet the AT and AF Managers and brief them on the conduct of the IOT&E. When the Back-up PM relieves the IOT&E PM, the IOT&E PM should introduce the Back-up PM to the facility managers, area/floor supervisors, AF Coordinators, and NAS Area Specialists/NAS Operations Managers (NAS/NOMs) before departing the facility.
- The IOT&E PM or Back-up PM should inform the front desk that the IOT&E Team and support personnel are on site. This will ensure that management knows how to locate or contact anyone on the Test Team. A list of all IOT&E Team and support personnel who will be at the facility should be provided to the manager.
- The IOT&E PM should ask the AT and AF Managers how often they would like a status brief. This will help with the IOT&E/facility management relationship.

**FIGURE 2-8. OPERATIONAL FACILITY PROTOCOL FOR IOT&E TEAM MEMBERS**

1. Turn cell phones to “Silent” or “Vibrate” prior to entering the operating areas. Phone communications must be carried out away from the operational area.
2. Use of laptops and PCs should not occur in operational areas.
3. Introduce yourself to the Air Traffic Watch Supervisor, Air Traffic Controller in Charge (CIC), and Airway Facilities NAS/NOM each time you enter the operational area.
4. Do **NOT** initiate conversations with the controllers. If the controllers are not busy, they will initiate a conversation.
5. Use discretion when initiating conversations with the NAS/NOMs. Make sure you are **NOT** interrupting operational activities.
6. If you have any questions, ask the Supervisor, CIC, or NAS/NOMs.
7. Do **NOT** perform any operational activities on the equipment/system, on-line or standby, without proper approval. Ask for proper approval **EACH TIME** you want to perform an operational activity on the equipment/system, on-line or standby.
8. If you wish to “plug in” and observe the operation, ask the controller to insert the headset jack.
9. When you get ready to disconnect, request to unplug the headset before removing it from the jack.
10. Avoid any conversation about your observations while in the operating areas. (The controller/specialist may think you are discussing **HIS/HER** performance and not the **SYSTEM’s** performance.)
11. If there is an emergency or unusual operation, leave the operational area if possible.
  - If you are required to stay, move where you are directed, and be non-intrusive.
12. Keep in mind that we are evaluating the system, not the facility or its people.
13. Thank the controller/specialist for his/her time, and inform the Supervisor/NAS/NOM if you wish to return to the operational area.
14. Do **NOT** share comments or opinions with anyone in the operational areas. These conversations should only be shared between the Office of IOT&E, IOT&E Team, and/or SENTEL in secured areas.

At the beginning of each day’s activities, a pre-briefing/telcon should be conducted. The pre-briefing/telcon should include evaluation objectives and what system operations will be observed, what data will be collected, and by whom. Include those IOT&E Team members who are not currently at the site in the telcon so that all members have the same information. Packets (e.g., questionnaires, data

collection forms) should be prepared prior to the day's pre-briefing. For IOT&Es that are of a short duration, it may be beneficial to have an "operations room" at the hotel where forms and information can be distributed, and data collection and analysis can be started.

☞ Data Collection Matrix wall charts in the IOT&E workroom can be used for IOT&E Team members to initial areas where they have observed relevant activity. This helps identify areas that may need extra attention in order to obtain sufficient data.

During the course of IOT&E, the ATO Stakeholders will most likely want to know how IOT&E is progressing. It is important that the Team understand the ramifications of information being disseminated prior to completing the IOT&E Assessment. Until the IOT&E report is complete, the IOT&E Team and IOT&E PM should not be providing assessments to anyone outside of the Team.

Similarly, facility management may request information about the course of IOT&E, and how it will affect site personnel and the facility's mission. The IOT&E PMs must use their best judgment regarding the extent of information to be shared in this case. The PMs should be prudent to balance the needs of the site against the sensitivity of the IOT&E Assessment yet to occur. The following steps should be taken to ensure good communication feedback with the facility management:

- Explain to site managers during the pre-IOT&E site visit that the information-sharing ground rules are:
  - Any information on an issue that might pose an immediate threat to safety will be communicated to facility management.
  - Facility management will be kept abreast of IOT&E activities and schedules.
  - Specific IOT&E results and recommendations will be in the IOT&E Report.
  - No conclusions are reached by the IOT&E Team until all on-site activity has concluded, the data have been organized and reviewed, and the team has discussed the data and come to consensus.
- Schedule courtesy inbriefs and outbriefs with all appropriate site managers.
- Inform managers that they will be among the first to hear the assessment during the Facilities Manager's/Region Telcon Brief.
- Ensure that the IOT&E Team understands that these ground rules have been established.

Reminder: The primary consideration for operational site evaluations is that the site "owns" the system. Unilateral inputs to, or control of, the system by the IOT&E Team will not be possible. The use of the system will be at the complete discretion of the site so that operations will not be adversely affected. Any special operating conditions or actions that the IOT&E Team needs to observe must be arranged through site management. Site management should be made aware of our data collection process, e.g., questionnaires, pictures of display, etc.

Reminder: Service team personnel may choose to observe IOT&E. They should be informed that they need to coordinate attendance with the IOT&E PM. The IOT&E PM needs to manage observers so that the IOT&E conduct is not compromised, and any impact to facility operations by observers' presence is not falsely attributed to the IOT&E Team (e.g., it is important that site personnel be able to distinguish between observers and IOT&E Team members, so observers are not given data that the IOT&E Team could then miss).

#### **2.4.10.1 Interim IOT&E Assessment**

If, during the conduct of IOT&E, the IOT&E PM or the Director sees a benefit to providing formal feedback to the Vice President of Safety Services and/or the ATO Stakeholders, the IOT&E PM and IOT&E Team will prepare an Interim Assessment. This assessment would include, at a minimum, the operational risk ratings (High, Medium, and Low (H, M, L)) of identified issues or those issues deemed significant\* by the IOT&E Team. (**Note:** An interim assessment is an unplanned event and is not the same as an IOT&E Report on a phased implementation.)

#### **2.4.10.2 IOT&E Termination Report**

If, during the IOT&E conduct period, the IOT&E Team determines the system is not operationally ready, the Team will recommend to the Vice President of Safety Services that the system be returned to the affected Service for further development and/or corrective action. (Once IOT&E has been terminated, a new IOTRD from the affected Service is required to restart IOT&E.) The IOT&E Team and IOT&E PM prepare a cover letter from the Vice President of Safety Services to the Vice President of the affected Service that details the termination and the need for a new IOTRD. Attached to this memo must be a report that details the issues or impacts on which the termination is based. The IOT&E PM, and IOT&E Team members if applicable, should brief the Service team on the reasons for termination.

Reminder: After IOT&E has begun, the affected Service may decide to withdraw the system via memorandum from the Vice President of the affected Service to the Vice President of Safety Services if they determine that further development and/or corrective action is required before IOT&E proceeds. A rescission memo and subsequently a new IOTRD is required for IOT&E to proceed after a withdrawal.

## **2.5 POST-IOT&E CONDUCT PROCESS**

The post-IOT&E process involves several steps: identifying operational issues, assessing operational readiness, developing recommendations based on the assessment, writing and briefing the resulting report, acknowledging the support received during IOT&E, preparing and presenting a Lessons Learned Brief, and completing a Follow-up Evaluation and Report.

### **2.5.1 Data Reduction and Analysis (DR&A)**

Data collected during IOT&E is invaluable in supporting the IOT&E Team's assessments. DR&A activities such as collecting forms, collating data, and analyzing results can be time consuming and labor intensive. It is essential to keep up with DR&A on a daily basis during the IOT&E. As the data is collected, the PM, the support staff, and the IOT&E Team should continually assess the sufficiency of data collected against the planned data documented in the RCM and/or DCM. Areas of data insufficiency that will cause limitations in the assessment should be noted during the DR&A process and addressed in the final report. The involvement of IOT&E Team members in analyzing the data via a telcon prior to the caucus can be beneficial in determining whether there is additional data required, categorizing data into logical operational areas, and identifying potential operational issues that can be presented to the entire IOT&E Team. The types of data that are most commonly collected are:

- Observations/IOT&E Data Collection Forms
- Test Logs
- Product Team Discrepancies and PTRs
- Supervisor Logs
- AF Records

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\* See definition on page J-4

- System Status Data
- Questionnaire Data
- Remote Maintenance Monitoring (RMM) Data
- RMA Data (see section 2.4.4.1.3)

All data are maintained as “working papers” and kept by the Office of IOT&E to answer questions that may arise.

### **2.5.1.1 Caucus Dry Run**

A Caucus Dry-Run should be conducted by the IOT&E PM and the support team during the DR&A session. The purpose of the Caucus Dry Run is to ensure the readiness of the IOT&E PM and the support team to conduct the Caucus meeting. It should emphasize the Caucus schedule, individual roles and responsibilities, IOT&E Results Briefing and Report status, and general logistics. A Caucus Dry-Run should include (but is not limited to) the review of the following:

1. Caucus Schedule and Agenda
  - Detailed daily schedule of events
  - Meeting introduction (consensus, agenda, re-introductions, logistics, etc.)
  - Caucus briefing charts and sequence (Introduction, DR charts, draft Issues, etc.)
  - Order and method of discussing Potential Issues (by COIs, AF, AT, etc.)
  - support team review times and Technical Editing times
  - Team building event (group dinner, sporting activity, etc.)
2. Roles and Responsibilities (with sample assignments)
  - IOT&E PM/Back-up PM
    - Chair the caucus meeting
    - Consensus building
    - Facilitate discussions during meeting
    - Breaks
  - Support Lead
    - Logistics POC (Hotel, printing, lunches, etc)
    - Action Item List
    - IIS Database control (when updated)
    - Keep track of schedule/agenda items
  - Technical Support(s)
    - Questionnaire Data (when and how to present to Team)
    - Parking Lot (when and what to write)
    - Note-taking, if applicable
    - Reference library (hardcopy, CD, online links)
    - Unique appendices (pictures, charts, late-arriving data)
    - Managing changes to issues, data reports, and data logs
    - Printing new IIS reports
  - Technical Editor
    - Communication between Speaker/Technical Editor
    - Speakers (PM only or Back-up PM(s))
    - Presentation materials expected from the Technical Editor (briefings, IOT&E report, wall-charts, pictures, database, examples, etc.)
    - Executive Summary and IOT&E Results Briefing
    - Technical Editing techniques (hidden write-ups or full display, highlight action areas, etc.)

3. IOT&E Executive Summary and Results Briefing

- Executive Summary review process and coordination
- Final IOT&E Report (including advance copies, if required) reproduction and distribution process
- Final IOT&E Report briefing schedule and invitation list (Service team, Executive Council, and Regional Briefs)
- Audio-visual requirements (Pictures or movie presentations)
- IOT&E Team member attendance (assigned topics/focused presentation/lead-in, etc.)
- Review IOT&E result briefing and report boilerplates

4. Logistics

- Support team travel itineraries, meeting times and location
- Equipment check-out/shipping coordination/pick-up/rental back-up (Portable LAN, printer, digital camera, projector, supply kit, etc.)
- Conference room setup (“U” shape, projector & portable LAN, wall charts, easel/whiteboard)
- Seating assignment (break up cliques, placement of Back-up PM to stop sidebar discussions, technical support)
- Snack breaks (catered)
- Review and pack caucus handouts/binders/wall charts
- Compile and ship IOT&E Team member notebooks
- Gather and ship all reference materials
  - Ensure all IIS reports are available

**2.5.2 IOT&E Team Assessment Process**

The IOT&E Team will prepare two assessments for each IOT&E: the IOT&E Assessment and the Follow-up Evaluation. The IOT&E Assessment is completed and documented in the IOT&E Report within 10 working days of the end of IOT&E conduct. The Follow-up Evaluation, which is normally completed six months after the ISD, is prepared to include a status of any issues in the Executive Summary and any new significant operational issues. Both of these Reports should reflect the IOT&E Team’s assessment of the system’s operational readiness or evaluation of the issues, not the Office of IOT&E’s.

Reminder: *Assessment Meeting Notes:*

- The IOT&E Team lead should ask tough questions of the IOT&E Team when attempting to determine the operational impact/operational risk of an issue.
- All risks identified (H, M, or L) must have data to back them up.
- Develop and support the IOT&E issue with as many data sources as you can: IOT&E Data Collection, logs, questionnaires, Program Trouble Reports (PTRs), etc.
- Make sure you understand the basis for the decision if the IOT&E Team rates the System as Not Operationally Ready. Work with the Team to clarify if it is only the High Issues, Highs and specific Medium issues or all issues in the Executive Summary. This information will be critical if another System Assessment is required.

**2.5.2.1 Assessment Planning**

When the IOT&E Team meets to develop the assessment, the majority of the time is spent reviewing data and reaching a consensus on the operational issues, conclusion, and recommendations. Therefore, a rough draft of the IOT&E Report (with appendices of data, but minus the results/conclusions/recommendations) must already be available so that the meeting time can be focused on the assessment.

☞ The IOT&E PM and contractor support team should dry run the assessment period, printing samples of data to be distributed and practicing how the data could be presented. This is a good opportunity to make sure the information for the IOT&E Team is complete and clear.

### **2.5.2.2 Decision Making**

Throughout the IOT&E process (issue formulation, risk assessment, and system assessment), the IOT&E Team should employ the consensus method of decision making. Consensus is defined as “A decision that all members in the group can live with and will support.” Consensus may not mean that all members are in 100% agreement, but that there is 100% acceptance – members can live with the decision knowing what they know now; everyone has been heard and will support the Team’s decision. The consensus concept should be discussed up front with the Team at the kick-off meeting and reviewed at the assessment meeting.

If the Team cannot reach consensus, as a last resort, a minority opinion can be presented in the report. Do not discuss this possibility until it is apparent that consensus will not be achieved.

☞ The IOT&E PM, Backup PM, and support contractors should review their course handouts and notes from the consensus training course prior to leading the assessment meeting.

☞ The IOT&E Team members are the operational experts in IOT&E and the Report is to be their assessment. IOT&E personnel and IOT&E support contractors are facilitators and support for the IOT&E Team. It is important that facilitators and support personnel do not try to convince the experts what is or is not an issue or operational impact. However, asking questions to understand issues and to ensure that issues are supported by data is appropriate.

### **2.5.2.3 Assessment Methodology**

The assessment of the operational readiness of the system will be performed by the IOT&E Team after IOT&E. A visual description of the assessment process is shown in Figure 2-9. The system will be assessed for Operational Readiness based on the risk rating of operational issues associated with the COIs. The IOT&E Team may not be able to fully evaluate all operational aspects of the system during IOT&E due to limitations that may be site-specific, part of the operational environment, or that otherwise prevent the collection of enough relevant information.

#### **2.5.2.3.1 Issue Risk Assessment**

The assessment process begins by correlating the collected data from System Test, Field Familiarization, and IOT&E with the COI/MOEs/MOSs to verify that all operational requirements have been assessed. There is a data trail from the data elements/MOPs to the MOEs/MOSs, and in turn, to the corresponding COIs.

Reminder: Operational issues may become apparent during IOT&E that are not traceable to the COIs or the RD. This may be due to COIs that are not structured properly and/or shortcomings in the RD. If issues are identified with operational risk, they must be assessed, rated as H/M/L, and documented.

The IOT&E Team will analyze the data to identify issues and categorize them as either Operational Risk Issues or Comments. If there are any workload or staffing-related issues, the IOT&E Team will determine the underlying cause(s) of the issue.

**Operational Risk Issues:** The operational risk issues are rated as follows:

**HIGH RISK**– A problem that will prevent, degrade, or interrupt operational service or jeopardize safety, and has no acceptable workaround.

**MEDIUM RISK**– A problem that will—

- a) prevent, degrade, or interrupt operational service or jeopardize safety, but has an acceptable workaround; or
- b) disable a support system function which is essential to operational or system performance analysis, and has no acceptable workaround.

**LOW RISK** – A problem that presents a risk not covered by the High or Medium categories above.

☞ If there is an issue where the operational risk cannot or has not been determined, the issue may be rated as Low and the IOT&E Team should be explicit in the issue description/operational impact as to why it was indeterminate.

The risk ratings will be based on the consensus of the IOT&E Team members and will be supported by data that will have been collected during the evaluation, and, if applicable, data collected during earlier test monitoring.

☞ The IOT&E PM should ensure that in describing a problem the IOT&E Team is not naming a particular solution. For example:

- “*This maintenance procedure cannot be performed by just one person as described in the TIB;*” or
- “*The system requires more frequent maintenance actions than the system being replaced,*”

are both examples of specific problem descriptions, while:

- “*Staffing levels need to be increased to maintain this system,*”

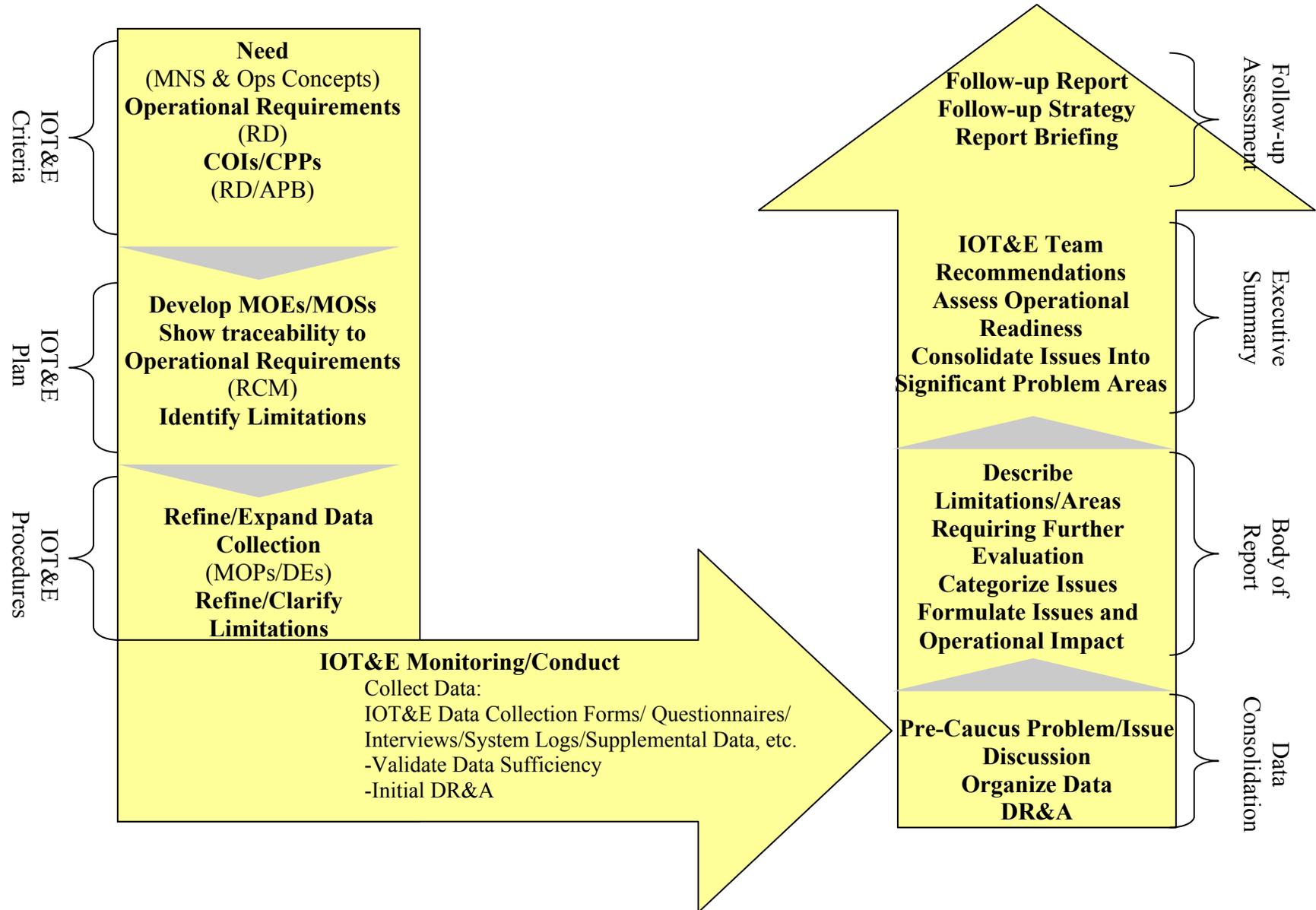
is a directed solution.

☞ **Transition/Implementation:** Transition/Implementation issues are those that have been resolved at the key site in order to achieve IOC, are not expected to reoccur at that facility but may at future sites prior to their achieving IOC, and pose no operational risk to key site daily operations post-IOC. These are issues that would prevent or delay the facilities beyond the key site, from reaching IOC (e.g.: site adaptation process). Transition/Implementation Issues are Operational Risk issues and are rated (H/M/L). It should be noted that if the issue is not addressed by a certain date or event, there may be increased risk.

**Comments:** This category would include issues that warrant consideration and are not covered by the other categories. This category should be used as a last resort for issues that do not fit into the operational risk issue category. Comments are not tracked in the ISD Action Plan. Some examples of issues which may fall into this category are: positive comments on system performance, concerns with interfacing systems that are not currently under assessment, required operational capabilities not included in the system under assessment (these should have been addressed in the IOTRD), and resources. Avoid the tendency to put low impact issues into the comments section in order to increase their visibility.

- ☞ The IOT&E PM should avoid the use of the terms, such as, “Deployment Critical Issue” and “show stopper” when assessing and classifying issues. This confuses the assessment process with the recommendation process.
- ☞ It is the IOT&E PM’s responsibility to ensure that the HIGH risk designation is used properly and not as a method to get recognition for a MEDIUM/LOW risk issue.
- ☞ The IOT&E Team needs to avoid incorporating solutions into the recommendation section.
- ☞ Make sure the IOT&E Team understands that H/M/L refer to risk, not priority. All issues, whether High, Medium, or Low Risk, will be in the ISD Action Plan and must be addressed by the affected Service.

FIGURE 2-9. IOT&E ASSESSMENT ROADMAP



#### **2.5.2.4 System Assessment**

Once the issues have been identified and rated for risk, the system will be assessed for Operational Readiness based on the assessment of the individual issues. The credibility of the system assessment, including the risk ratings, is based on IOT&E Team members' operational experience and knowledge of the NAS. The system will be assessed for Operational Readiness as follows:

- **Operationally Ready:**
  - There are no high risk issues and the combined level of risk of all issues does not preclude operational use.
- **Not Operationally Ready:**
  - There is at least one high risk issue or the combined level of risk of all issues precludes operational use.

Either assessment (Operationally Ready or Not Operationally Ready) should be further refined in the Executive Summary with contingencies and clarifications (e.g., Not Operationally Ready for national deployment to sites beyond the key site). In addition, the IOT&E PM needs to understand the basis for a Not Operationally Ready, beyond having "high issues." Time should be taken to discuss with the IOT&E Team which issues would have to be corrected/downgraded for the system to become Operationally Ready.

The recommendation section should reflect the IOT&E Team's view as it relates to Operational Readiness, e.g., "Issues 'x' and 'y' must be corrected prior to the system's going IOC," or, "All issues in the Executive Summary must be addressed prior to IOC at the next site." These statements tell the decision maker what needs to be accomplished before the system is Operationally Ready. It should be noted, however, in any Follow-up Plan or email on the scope, that a new significant issue that is discovered during the Follow-up may impact the re-evaluation.

#### **2.5.3 IOT&E Recommendations**

Once the assessment process is complete, the IOT&E Team develops its IOT&E Report, which documents the operational readiness assessment and recommendations in support of the ISD. The IOT&E Team will use the assessments they have made (of operational risks and operational readiness) to develop the recommendations for the system.

Reminder: To facilitate the discussion on issues/recommendations, it is helpful to go into the assessment meeting with draft issues for the IOT&E Team to work with.

Recommendations regarding identified issues will be tied to operationally oriented milestones/impacts such as IOC, Operational Readiness Declaration (ORD), equipment installation, and shipping. Do not tie the recommendation to the ISD. The IOT&E Team shall recommend to the ISD authority that IOT&E issues be incorporated into the ISD Action Plan. The IOT&E PM should review the ISD Action Plan to ensure that all IOT&E issues are included. (See the Action Plan template in the FAST.) In addition, the IOT&E Team may recommend that additional evaluation take place to assess limitations or exceptions that were not able to be assessed during the IOT&E. It should be noted that the Director may not agree with the IOT&E Team recommendations, but this is not reflected in the Report.

## 2.5.4 IOT&E Report

The development of the IOT&E Report has three phases: a rough draft, a draft that includes appendices of the data collection results, and the final product that incorporates the IOT&E Team's conclusions and recommendations. As the IOT&E Team is working on the report during the caucus and the Technical Editor is revising it each day, it is expected that the IOT&E PM (not just Support Personnel) will review the report (Section 5) each evening as a quality/logic check.

### 2.5.4.1 *Rough Draft*

Prior to the start of IOT&E, the IOT&E PM and SENTEL personnel should have completed a rough draft, which includes a system definition, a blank area for results and issues associated with each COI, the evaluation dates, the evaluation locations, etc. As IOT&E is conducted, the rough draft should be further developed so that at IOT&E completion, the rough draft contains all the information known prior to seeing the final results, and will be the basis for the concentrated effort that will go into developing the draft IOT&E Report. Given the short time allowed for developing the draft IOT&E Report, it is important to have the rough draft as complete as possible.

### 2.5.4.2 *Draft*

The draft IOT&E Report, minus the IOT&E Team's assessment, is needed prior to the start of the assessment meeting. This version of the report contains a summary of results in the appendix organized by each COI or data type to which they apply. All areas of the IOT&E Report will be completed by the IOT&E PMs and their support staffs, with the exceptions of the Assessment, Conclusions, Recommendations, and the Executive Summary's Results/Issues, Conclusions, and Recommendations paragraphs. This draft also allows the Team to focus on the assessment rather than report writing.

Reminder: If possible, try to complete a draft IOT&E Report that includes the results of IOT&E (but not any assessment of the results) prior to the IOT&E Team assessment meeting.

### 2.5.4.3 *Final Report*

The IOT&E Report quickly provides accurate and pertinent information from the evaluation, along with the Team's assessment and recommendations, to the decision maker(s) for use at an In-Service Decision or acquisition decision. It is not to be distributed to organizations outside of the government (except to national union offices) prior to the ISD.

The IOT&E Report should provide the decision maker with the IOT&E Team's assessment of the system's operational readiness based on the operational requirements and structured around the assessment of the risks associated with the operational issues. This assessment, including recommendations, should be supported by the IOT&E results (both qualitative and quantitative). Data collected during IOT&E, such as questionnaire summaries, RMM logs, AT logs, etc., are not appended to the Report, but are kept as "working papers" by the IOT&E PM. Printout(s) of the IIS is not required, nor desired in the IOT&E Report. It is important that this Report provide the overall operational assessment, both the positive and negative aspects, and should also address any follow-up activities or conditions required to close out issues and verify system readiness. The IOT&E Report should address any exceptions that were noted in the IOTRD, and the effect/status of these exceptions at the conclusion of IOT&E. The report should point out if there are any areas where requirements were met but the Team determined that there were issues in meeting operational needs. Traceability to all issues in the Pre-IOT&E Operational Issue Paper is required. The Report should state which have been closed by corrective action and

which are still open. Limitations to the assessment, both planned and unplanned, should be noted and associated with a COI. Given the importance and criticality of the IOT&E Report, it is essential that the IOT&E Team's conclusions are clearly traceable to the collected data, and that a completed RCM or DCM showing that data was collected for each Measure of Effectiveness or Suitability (MOE/MOS) is included in the Report.

#### **2.5.4.3.1 Executive Summary**

The Executive Summary should function as a stand-alone document and be no longer than two pages. It should be directed toward the decision maker.

- Include only the pertinent background/evaluation description information,
- State the high risk issues (and others as appropriate) with accompanying operational impact statements (and may include "comments" from the IOT&E Team relative to concerns it has not tied directly to the system being assessed or a specific H/M/L issue), and
- State the operational readiness assessment and recommendations.

(All issues in the Executive Summary will be tracked as part of the follow-up process.) Prior to presenting the draft Executive Summary to the IOT&E Team (and with the concurrence of the IOT&E Team), the IOT&E PM should have the Director review the Executive Summary for readability. In addition, the Director will also receive a copy of the final version of the Executive Summary in advance.

#### **2.5.4.3.2 Cover Memo and Distribution**

The cover of the IOT&E Report shows that it is an IOT&E Team Report. The attached cover memo that accompanies the report is issued from the Director of the Office of IOT&E to the Vice President of Safety Services on behalf of the IOT&E Team. A "generic" cover memo along with the Report distribution list should be written, reviewed, approved, and then signed by the Director prior to the start of IOT&E. The IOT&E PM is responsible for developing the cover memo and distribution list. The DC Secretary will type the cover memo and distribution list on government letterhead, obtain the Director's signature, and mail/deliver the memo to the Technical Editor.

The signed memo, with attached distribution, can be taken to the IOT&E Team assessment meeting, dated as necessary, and put on top of the report. The mailing labels (FEDEX, etc.) for the IOT&E Report should be completed prior to writing the report.

The distribution list (see MIS Report Cover Memo template) should include those who will be attending the In-Service or acquisition decision meeting, all Regional 400/500 (for those Regions receiving the system), NATCA (Director of Safety and Technology), PASS (currently, Tom Brantley), NAATS (Wally Pike), DoD for joint programs, key site facility managers, and IOT&E Team members. Hard copies should be sent to the Office of IOT&E DC and ACY Secretaries. A soft copy should be placed in the MIS (in the same folder as Draft Reports). The report should be delivered to all parties to coincide with the ATO Stakeholders Brief (+/- 1 hour). In addition, copies will be provided to all attendees at the briefs.

<p>☞ Distribution of the IOT&amp;E Report (always with the signed cover memo attached) beyond the distribution list may not be done until the ISD is held.</p>
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The IOT&E Report will be printed, assembled, and distributed from the Technical Editor's office. Only under unique circumstances should a report be distributed from the field.

### 2.5.5 Briefing the IOT&E Report

The IOT&E Report will normally be briefed in the week following the report completion. The report will normally be prepared as an input to an In-Service Decision (although other acquisition decisions may also use an IOT&E Report); thus, the completion of the report and the briefings must be carefully scheduled to support this senior-level decision.

If possible, the briefings should be scheduled on consecutive days to lessen the effect on IOT&E Team member travel. Briefings held on the same day should be scheduled several hours apart. The PM should rehearse the brief with the IOT&E Team so that they are well prepared. If the briefing will include video, the PM should ensure that a CD-RW copy is sent to DC in time for the briefings. A dry run of the briefing including PCs and projectors (or other media) should be conducted with the Director and staff after the caucus and prior to the ATO Stakeholders Brief. (This is not a review or critique of the IOT&E issues and recommendations.)

The brief that is given to the ATO Stakeholders is the same brief presented to the Executive Council. The briefing is structured to be given in 20 minutes, with the results being the main content. The briefing should have back-up slides that contain details and further information on each issue. It is these slides that are used in the presentation to the ATO Stakeholders. The brief should include the items stated in the guidance document on the MIS (see MIS/BEST\_INFO/BRIEFINGS/IOT&E\_RESULTS). The PM should bring the RD and any background data on hand that can help explain or provide more detail on any specific issue.

#### FIGURE 2.10. IOT&E REPORT BRIEFING COORDINATION MEETING

- ☞ The IOT&E PM should meet with the Director and the DC secretary two months prior to the report writing to review/brief the following:
- IOT&E Report briefing sequence and attendees (a draft list should be prepared for this meeting).
  - Procedures\*\*\* for DC Secretary notification and confirmation of meeting attendees.\*
  - The conference room requirements for the ATO Stakeholder brief (if possible, reserve the room starting 15-20 minutes early to set up the equipment).
  - The draft Report Cover Memorandum and distribution list (a draft list should be prepared for this meeting).
  - The IOT&E schedule with emphasis on the Director's site visits, IOTRD due date, and IOT&E staff travel; include possible requests for compensatory (comp) time.\*\*
  - Any changes from the approved Plans/Procedures that were not covered in the Good-to-Go, if already held.
- \* DC Secretary should follow up the verbal meeting notification with an email to the IOT&E PM and the secretaries of attendees (emails should not be sent to the managers). The IOT&E PM and Director should be kept informed of attendee confirmation to the briefs. Confirm attendance 7-10 days before the brief.
- \*\* Compensatory time must be pre-approved by the Director via form DOT F3500.1. IOT&E PMs are responsible for submitting this form prior to working comp time for any IOT&E personnel on their team.
- \*\*\* For headquarters personnel only at the Director level.
- (See template on MIS/BEST\_INFO/BRIEFINGS/INTERNAL for Meeting Briefing package.)

☞ Additional information may become available after the IOT&E Report has been distributed but before the briefings are conducted. When this information causes the IOT&E Team to change its system assessment and recommendation, the IOT&E PM should tailor the brief accordingly, noting where it differs from the distributed Report.

### 2.5.5.1 Briefing Series

The following briefs\* should be developed to facilitate the presentation of IOT&E results:

- **ATO Stakeholders Brief** – Prior to the ATO Executive Council Brief, the IOT&E PM and selected IOT&E Team members will brief the program’s Stakeholders and the cognizant union(s). Attendees include the working level and management level personnel below the Vice President level, and the national union POCs with members on the IOT&E Team. Due to the ISD implications, ensure that In-Service Management Division of the NAS Support Office is invited to this brief. The PM (versus the DC Secretary) should invite the unions via email or phone one-two weeks before the brief. IOT&E Team members should play key roles in briefing the issues.
- **Facility Managers’/Region Telcon Brief** – The IOT&E Team should hold a Telcon Briefing with the AT and AF managers and Region 400/500s for the facilities where IOT&E took place to provide them a status of the IOT&E Assessment. This telcon should occur after the ATO Stakeholders Brief, and is arranged by the PM.
- **Executive Council Brief** – This meeting is a 20-minute, formal presentation of IOT&E results by the IOT&E PM and one or two selected Team members. A copy of the briefing must be provided to the Executive Council Secretariat the morning of the briefing.
- **ISD** - If a JRC is convened for an ISD, a formal presentation of the IOT&E results should be given (coordinate with the affected Service). (For non-JRC ISDs, the Office of IOT&E and selected IOT&E Team members attend but do not brief since the decision makers have already been briefed on the IOT&E information.) The NAS Support Office has the responsibility to keep a record of the meeting and track the ISD Action Plan items. See ISD Guidance in the FAST.
  - **Documenting the In-Service Decision:** The IOT&E PM should work with the representative from the NAS Support Office (formerly AOP-1000) to ensure that the In-Service Decision Memorandum of Record incorporates the following:
    - Identify the organizations providing input to the decision maker
    - Identify the current hardware and software baselines
    - Provide a statement on overall system stability
    - Identify and provide mitigation plans for open ISR checklist items and IOT&E issues in ISD Action Plan
    - Provide current status of Operational Testing (including the final Report)
    - Provide current status of IOT&E (including the final Report)
    - Future actions, if any (as directed by the decision maker)
    - Decision (including detailed conditions)
    - ISD minutes should have a statement similar to the following:  
 “Open issues have been reviewed from the In-Service Review (ISR) checklist, the IOT&E Readiness Declaration, and the IOT&E Report. Upon consideration of the mitigations identified in the Service team Action Plan, the decision to place [System] in service at sites beyond the key site has been approved [or not approved] by the In-Service Decision maker (with the following conditions).”

- The IOT&E PM should obtain a copy of the ISD memorandum and place it in both DC and ACY permanent files.

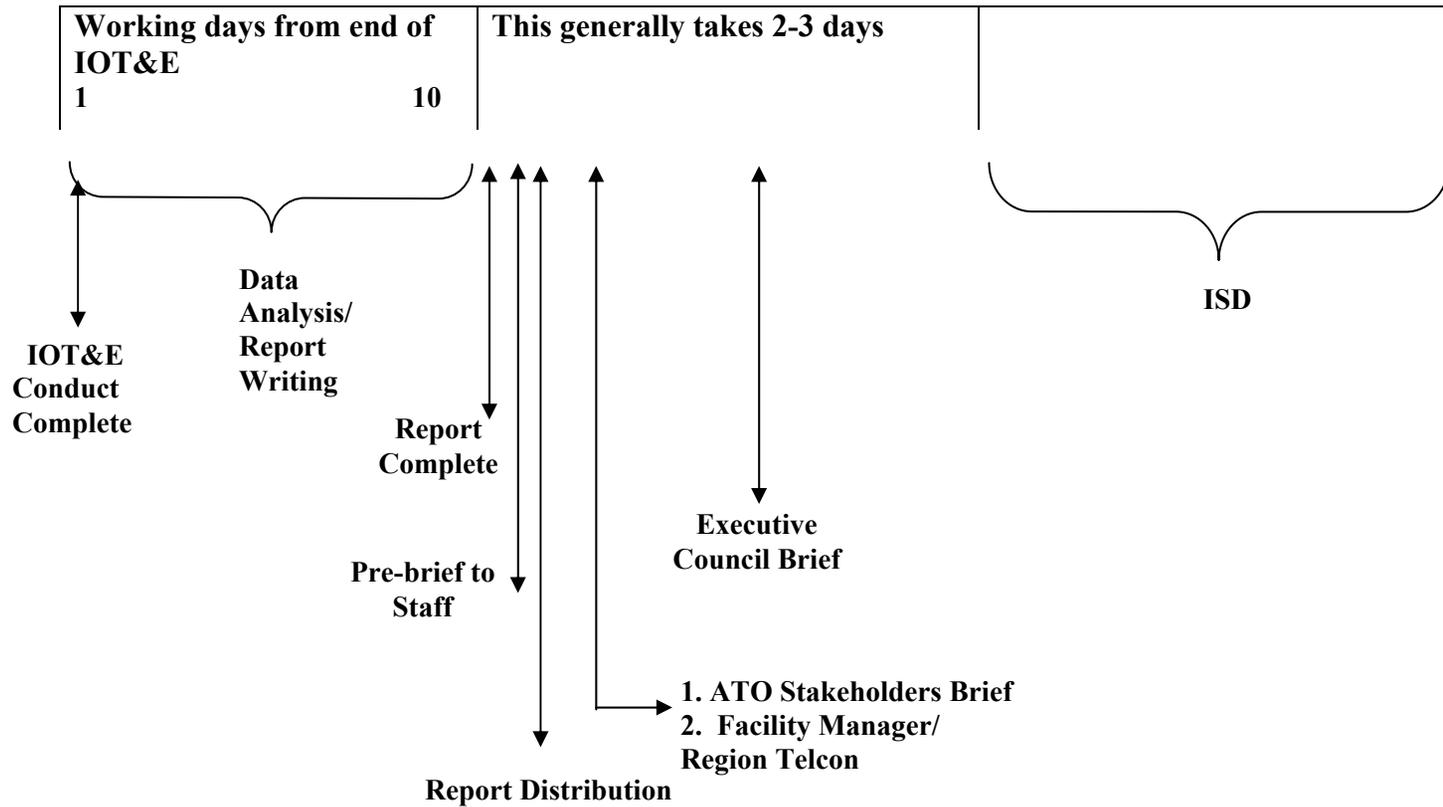
\* For an IOT&E EOA or Early IOT&E, the briefing series should be tailored as appropriate to the program.



- The IOT&E PM should select a few IOT&E Team members to travel to FAA Headquarters so they can actively participate in all IOT&E Assessment Briefs. (Due to the cost, TDY to attend briefings should be limited to only those members that will have an active role. Selection should be based on ability to actively support the Team's assessment of one or more issues and their role in the briefings should be understood in advance.)
- The IOT&E PM should work with IOT&E Team members who will be attending the briefings to discuss: the flow of the briefs, who on the team will be the point person for each specific issue, guidance on responding to questions/remarks and to address any concerns of the Team members.
- As the briefings move up in the FAA hierarchy, the IOT&E PM should assume the lead briefing role.
- Remember to pass out and collect an attendance sheet at the Stakeholder Briefing.
- If key personnel miss briefings or significant portions of briefs, the IOT&E PM should follow up with them so they have the information.

The IOT&E PM should coordinate IOT&E Team travel and hotel reservations as soon as the briefing dates and attendees are known. Let the Team members' managers and Regions know the travel dates.

**FIGURE 2-11. GENERIC IOT&E REPORT BRIEFING TIMELINE**



### **2.5.6 Letters of Appreciation**

The IOT&E PM should write Letters of Appreciation for the IOT&E Team members, site participants, SENTEL personnel, and others that significantly supported IOT&E. Letters of Appreciation are reviewed by the IOT&E Specialist, then go through the DC secretary for final preparation, coordination, and signature by the Director.

### **2.5.7 Post-IOT&E Report Follow-up Evaluation**

The IOT&E Team will complete a Follow-up Evaluation and Report approximately six months after the ISD. In addition, if the ISD is delayed as a result of the IOT&E Report, additional activities will be required. There are four general Post-IOT&E evaluation activities that may be considered. In some cases all four may be performed, in others only two. Deciding on which activities, and the extent of the activities is part of the strategy meeting with the Director. The resulting agreement on the strategy must be documented, at a minimum in an email, and based on the complexity of the Post-IOT&E evaluation, may need a more formal plan that discusses resources and approach. If there is a second/phased IOT&E closely following, the IOT&E PM along with the Director may decide to combine the Post-IOT&E activities with the new IOT&E. This should be addressed as part of the strategy meeting.

All post-IOT&E evaluation Reports (whether they are memoranda or formal reports) are distributed to all who received the original IOT&E Report. The cover memo for the Report or the Report memo should summarize the findings (keep to one page). A decision to brief the Follow-up Report will be based on the results of the completed Follow-up. The IOT&E PM should provide the Follow-up results to the team lead within the affected Service.

The following sections describe the 4 general approaches to Post-IOT&E Evaluations.

#### ***2.5.7.1 Evaluation of Identified Issues in the IOT&E Report Executive Summary***

All issues in the IOT&E Report Executive Summary will be evaluated by the IOT&E Team at approximately six months post-ISD, in order to provide an update on the issue status. Data collection on the status, fix, or proposed actions would be primarily by the IOT&E Team members at operational sites where the fix is deployed or being tested, but may require additional team member(s) from other operational sites to travel to see the fix in operation. The IOT&E Team would evaluate the data, including re-rating the issues, via telcon.

This evaluation is provided from the IOT&E PM to the Director via cover memo with an issue matrix (issue description, IOT&E Team Recommendation, status). If the new operational issues evaluation (see 2.5.7.2) occurs at or near the same time, that evaluation will be addressed in the cover memo. The expected level of effort is 10% PM and 10% Support Lead (over the approximate six-month timeframe). As with all post-IOT&E evaluations, the IOT&E PM needs to discuss the strategy, including resource needs that may be beyond the 10%, with the Director.

#### ***2.5.7.2 Evaluation for New Operational Issues***

All programs will complete a Follow-up to determine if there are NEW operational issues, post-IOT&E Report. The data for this evaluation is collected via telcon from those IOT&E Team members at operational sites and from IOT&E PM monitoring activities. The evaluation of this collected data is made by the IOT&E Team via a telcon caucus. The IOT&E Team should rate these new issues, but recommendations are not desired. (If the IOT&E Team rates an issue as

High, then there needs to be some consideration/justification as to why the sites are continuing to use the system with a known High issue.) The evaluation is conducted approximately six months after the ISD. For each new issue the IOT&E Team should discuss whether an improvement to the IOT&E process would have found the issue earlier. This consideration and recommendations should be documented as a lesson learned and submitted to the IOT&E Specialist for IOT&E Process Improvement efforts.

### ***2.5.7.3 Follow-up Evaluation in Support of a Delayed ISD***

When the In-Service authority delays the ISD, after hearing the IOT&E results, the Office of IOT&E may be directed to conduct a Follow-up evaluation to provide a current status in support of the postponed ISD. In this event, the IOT&E PM should conduct a strategy session with, at a minimum, the Director, the back-up IOT&E PM, and the SENTEL lead. After the strategy session, the IOT&E PM should prepare an email message to the Director, with a cc: to the affected Service lead, to inform them of the upcoming evaluation and its scope. The Director will forward this email to the Vice President of Safety Services and the ISD authority, with emails to the affected Services, and the Service team lead. The email should address the following so that expectations are clear.

- Scope:
  - Will the Follow-up address all issues, those from the Executive Summary, or a sub-set?
  - Will the evaluation include a complete System Re-assessment, or re-rating of individual issues?
  - Note that new significant issues will be reported and may impact the system re-assessment, if there will be one.
- Limitations:
  - If there are limitations (e.g., weather availability) this should be discussed, so that it is clear that some issues may not be operationally re-evaluated.
- Approach:
  - The dates, location, and IOT&E Team participation (e.g., whole team, AT or AF only) should be described.

The reporting of the evaluation is accomplished by updating the existing Executive Summary to show the current status, including the current risk rating by the IOT&E Team for each issue and, if appropriate, a revised assessment of Operational Readiness.

### ***2.5.7.4 Evaluation of Limitations or IOTRD Exceptions***

In some instances the IOT&E Team may recommend in the IOT&E Report Executive Summary (and Briefings) that additional evaluation activity take place to evaluate areas of a system that were not able to be evaluated/fully evaluated during IOT&E due to either limitations or exceptions. This additional evaluation activity requires the concurrence of the Director. If additional evaluation activity is required, the IOT&E PM would discuss the strategy, including resource needs, with the Director. If the timing is right, the evaluation of issues that affected deployment (if any) and the identification of new operational issues, would be conducted at the same time. The evaluation will be reported in a tailored IOT&E Report.

☞ IOT&E PMs need to stay up to date with their programs' Action Planning status so that they can involve the Director if no activity is taking place on working the actions.

### **2.5.8 IOT&E Close-out**

Unless otherwise directed, IOT&E's involvement with a program will normally terminate with the delivery of the IOT&E Follow-up Report. It should be made clear in both the cover memo for the Follow-up Report and the conclusion section of the report that this activity closes out IOT&E on the named program.

## **2.6 PROCESS IMPROVEMENT**

The increasingly important role of IOT&E in the AMS and the rising expectations of senior FAA Management and operational users concerning IOT&E make process improvement necessary for IOT&E.

### **IOT&E Policy on Process Improvement**

The Office of IOT&E is committed to continuous process improvement and implementation of the appropriate process areas of the FAA's integrated Capability Maturity Model (iCMM). Metrics are collected to help assess the effectiveness of process improvement activities. Waivers to IOT&E's Process Improvement policy may be granted only by the Director and will be formally documented.

IOT&E's Process Improvement policy and processes are enforced through various methods including the process descriptions in the the IOT&E Operations Manual, IOT&E project management oversight by the Director, and the CM and QA audit function.

This section describes five primary elements – lessons learned, staff discussions, stakeholder feedback, IOT&E Team feedback, and iCMM – that the Office of IOT&E has identified to support process improvement.

### **2.6.1 Lessons Learned**

The Lessons Learned process has three parts:

- As a program completes IOT&E (or if requested by The Director when a major event or IOT&E Follow-up occurs), the IOT&E PM is required to document any lessons learned for the program and brief them to the staff. Prior to finalizing the Lessons Learned package and briefing the staff, the IOT&E PM should meet with the Director to discuss what worked well, what needs improvement, a discussion on how the IOT&E Report briefings were received, and the ISD status, along with discussing the initial strategy for the Follow-up. Slides showing IOT&E Team feedback, and the status of completing the issue matrix and placing required program documents in the IOT&E Permanent File should be included. If documents are missing from the Permanent File the brief should address the intended actions/dates to get them included. In addition, after preparing and presenting the Lessons Learned, the IOT&E PM should send the IOT&E Specialist and the Tech Editor the results of the IOT&E in the format presented in the back-up slides of the Generic Brief. The results will be incorporated into the next revision of the Generic Brief.
- As appropriate, POCs/PMs may present Lessons Learned from IOT&E processes where the staff can benefit. Examples include Designation Process, Quality Assurance Audits, and iCMM Activities.
- With each update of this Operations Manual, the IOT&E Specialist will ensure that significant Lessons Learned are incorporated.

### **2.6.2 Staff Discussions**

To facilitate staff discussions on issues and topics that affect IOT&E, several formats are used: post 8:45 telcons, off-sites, and email. The POC for the topic schedules the date/time, or, for an off-site, gets the topic on the agenda. All staff members with interest in the topic are invited, along with appropriate SENTEL staff. For post-8:45 telcons, the POC writes up and distributes notes from the discussion. For off-sites, the discussion will be recorded as part of the official minutes. For email discussions, the POC keeps the notes as a record. If changes to IOT&E's processes result from these discussions, they are forwarded to the IOT&E Specialist for inclusion in the IOT&E Operations Manual.

### **2.6.3 Customer Feedback**

*Note: Due to the ATO transition, the IOT&E Customer Feedback process is under review. For a description of the current process, see the MIS/Best\_Info folder.*

### **2.6.4 IOT&E Team Feedback**

In support of the continuous improvement of the IOT&E process, PMs are required to solicit feedback from their respective IOT&E Team members. PMs should inform the Team members at the Kick-off Meeting that IOT&E will solicit their voluntary feedback based on their participation in the IOT&E process. A feedback form (see MIS/BEST\_INFO/CUSTOMER\_FEEDBACK for an example) will be used at the completion of the caucus to collect their comments/suggestions. Results should be included in the Lessons Learned briefing.

### **2.6.5 Integrated Capability Maturity Model (iCMM)**

To formalize and improve processes, the Office of IOT&E has implemented the FAA's iCMM. IOT&E has achieved Maturity Level 3, and continually improves its processes.

### 3.0 IOT&E RESOURCES/ENVIRONMENT

This section defines the resources and the operating environment such as MWE, Government personnel, SENTEL support, and facilities that constitute IOT&E's infrastructure. These resources are required to successfully execute IOT&E's mission.

#### 3.1 MODEL WORK ENVIRONMENT (MWE)

The Office of IOT&E maintains a productive, rewarding, fair, safe, and satisfying work environment for its personnel, SENTEL staff, and IOT&E Team members. To support an MWE, the Office of IOT&E implements actions through the IOT&E Strategic Plan and EAS Action Plan, maintains work environment awareness, and makes timely and appropriate situational responses, when necessary.

#### 3.2 IOT&E PERSONNEL

Currently, there are 15 Full-Time Equivalent (FTE) government positions. Their specific roles are defined below:

- **Director (1)** - Responsibilities include establishing and implementing IOT&E's vision and policy; advocating IOT&E in the FAA; representing test and evaluation in the FAA acquisition and In-Service Decision making forums; representing the Office on FAA committees chartered to revise acquisition and evaluation policy; managing personnel and resources; ensuring the welfare and professional development of IOT&E staff;; acting as the Contracting Officer's Technical Representative (COTR); formulating IOT&E's budget, and performing the duties of IOT&E liaison with the FAA, Department of Transportation (DOT), and other government acquisition/evaluation organizations.
- **Program Analyst (1)** - Responsibilities include tracking and projecting budget related items, such as travel, training, equipment, and supplies. Responsibilities also include processing personnel actions and coordinating secretarial activities.
- **Secretary (2)** - Responsibilities include providing administrative support to Washington, DC and WJHTC staff.
- **IOT&E Program Manager (10)** - Serves as the IOT&E Team Lead and presents the IOT&E Team's system assessment and recommendations to FAA executives who make acquisition and/or In-Service Decisions. In leading the IOT&E Team, the IOT&E PM's role is to facilitate the Team's coordination, planning, procedure development, conduct, evaluation, assessment, and reporting of IOT&E. The IOT&E PM is also responsible for early program monitoring and estimating resource requirements. IOT&E uses the organization's range of operational, technical, and evaluation experience by assigning a lead IOT&E PM and a Backup IOT&E PM for each designated program. Each IOT&E PM leads one or two programs and participates as a Backup or in a support role on several others. Back-up IOT&E Program Manager responsibilities include assisting the IOT&E PM in all aspects of the IOT&E, covering or conducting activities in the event the IOT&E PM is not available, and assuring compliance with the IOT&E Operations Manual.
- **IOT&E Specialist (1)** - Responsibilities include: expertise in T&E and IOT&E, knowledge of FAA T&E Policy, leading process improvement efforts, maintaining the Operations Manual, and serving as a Back-up IOT&E PM.

☞ The Director and Program Analyst will reevaluate technical and administrative staffing requirements on a quarterly basis.

### **3.2.1 Training**

The Office of IOT&E promotes both organizational and individual performance improvement through the requirement for, support of, and resources for training. Specific training requirements, plans, and records are contained on the IOT&E MIS at BEST\_INFO/TRAINING. Staff members are required to complete an evaluation form after each training event and provide feedback to the rest of the staff at offsites. Time is allotted during each offsite for training feedback.

### **3.2.2 Human Resources Team**

The Human Resources Team provides communication and coordination across all levels of the Office of IOT&E to enable innovation and improvement in the administrative and human resources management process. Management, Support staff, Administrative staff, Program Manager, and Bargaining Unit interests are represented on the Team. The Team addresses topics that may include, but are not limited to, training, human resource planning, support tools, meeting planning, travel and invoice processing, property acquisition and distribution, faxing, email, cell phones, memorandums, other intra-office communication procedures, and workplace environment. The Human Resources Team Process Plan is contained on the IOT&E MIS/BEST\_INFO/HUMANRES folder.

### **3.2.3 Additional Task Leads**

IOT&E personnel take on many additional duties. The Leads and POCs for these other tasks are detailed on the IOT&E MIS/BEST\_INFO/IOT&E\_ASSIGNMENTS/IOT&ETSK.

## **3.3 IOT&E CONTRACTOR SUPPORT**

The Office of IOT&E augments its personnel resources by using SENTEL staff to provide engineering and technical support services. There is a COTR and Back-up COTR for the existing contract who also work with government contracting agencies to establish new contract vehicles as required. The Office of IOT&E currently contracts with SENTEL Corporation for these services. All required F&E funding for engineering and technical support services are requested via the Capital Investment Plan (CIP) process (CIP #M-25). This preserves the Office's independence because the primary funding source is independent of affected Services and the acquisition decision authorities.

When F&E funding is received by IOT&E, the COTR will issue to SENTEL Technical Instructions (TI), which provide authorization, level of effort, and funding requirements to initiate and/or continue support on specific projects.

At least twice a year, (in accordance with the PMP section of the Ops Manual), IOT&E PMs will meet with the COTR to discuss and agree on required SENTEL services for the ensuing six months. These discussions will focus on continued SENTEL support on existing projects, as well as for newly designated programs. PMPs will form the basis for these discussions and will be updated as a result of the meeting. PMs will discuss in detail, appropriate to the phase of the program, the following items that apply to SENTEL support:

Level of effort – SENTEL support defined in person-years by skill and experience level.

SENTEL travel – use \$2500/week as a rough estimate. (If the IOT&E PM has more accurate figures for their program, they should use them.)

Miscellaneous costs – unique support or purchases for team meetings or other IOT&E activities.

☞ Overtime for SENTEL must have PM/COTR approval in advance. SENTEL personnel will provide the IOT&E PM with an email that has an estimate of any overtime they think necessary for an upcoming invoice period.

If new or additional SENTEL support is required during the year, the assigned PM will discuss this support and provide cost estimates as detailed above as soon as possible.

SENTEL roles and responsibilities; contract deliverables; personnel labor categories are defined in the contract Statement of Work. A detailed description of the goals and individual responsibilities for the Supplier Agreement Management process in IOT&E is contained in Appendix F of this manual. IOT&E will use its regular “government-only” meetings to review this Supplier Agreement Management process, the status of the contract, and the quality of the contract support. Areas needing improvement will be provided to SENTEL during the monthly Contract Management Team Meetings with the COTR, Back-up COTR, SENTEL PM, and SENTEL Deputy PM.

### **3.4 SUPPLEMENTING THE IOT&E STAFF**

The IOT&E PM staff presently includes a total of 15 FTE FAA employees. This staff can be supplemented through the use of FAA detailees. IOT&E PMs are responsible for identifying and communicating the need for detailees to the Director. With a proper matching of skills and experience of detailees to the needs of IOT&E, many benefits accrue to both groups:

- IOT&E gains additional personnel resources.
- Detailees get career enhancing assignments.
- IOT&E benefits from field or technical experience applied to the task.
- Detailees learn about IOT&E.
- The Office of IOT&E gains an advocate for IOT&E when detailees return to their jobs.
- Detailees are able to interact with upper management in the FAA.
- IOT&E gains field credibility, increases operational focus, and learns more about users’ needs.

### **3.5 ADDITIONAL RESOURCES**

#### **3.5.1 Facilities**

IOT&E requires secure, self-contained office space to conduct its mission with both the security and confidentiality required for IOT&E. The Office of IOT&E currently has two such facilities; one is located in room 932 at the Orville Wright building in Washington, DC, and the other is located in the Technical/Administrative Building, 3<sup>rd</sup> floor, Column H13 at the William J. Hughes Technical Center in Atlantic City, NJ.

#### **3.5.2 Management Information System (MIS)**

IOT&E has implemented a MIS in order to communicate more efficiently and to ensure consistency and continuous improvement in the implementation of IOT&E. The MIS is housed in the Data Volume of the ACTATQS5 Server and is mapped to network drive M: on individuals’ PCs. It consists of the following folders and their subfolders:

- **ADMIN (Administrative):** This folder is used by the Director and the Program Analyst; it contains budget, contract, and personnel information. (Access is restricted to the Director and the Program Analyst.)
- **BEST\_INFO(Best Practices & General Information):** This folder is primarily used by IOT&E PMs and SENTEL personnel. It has both general information and reference materials (such as the Operations Manual, CM Plan, and IOT&E Team Database) and models and templates for work products. It also includes the documentation for many of the IOT&E processes and support activities.
- **NOTESCH (IOT&E Schedules):** This folder is used primarily by The Director to track progress of on-going IOT&E programs and allocation of resources. It also provides composite schedule information for all programs.
- **PROGRAMS (Programs):** This folder is the primary repository for the working documentation of the IOT&E Program Managers and IOT&E Teams. It also enables management to access information for each designated program including current status, schedules, and the top five issues.
- **SHARED (Shared):** This folder provides workspace for file-sharing among members of the IOT&E and SENTEL staff. It is primarily used for items which are not for general use by all IOT&E staff.
- **LAN\_ADMIN (LAN Administration):** This folder is primarily used by the LAN staff for Workstation & Server instructional documents, LAN meeting minutes, Software inventory and Web page design.
- **LAN\_SOFTWARE (LAN\_SOFTWARE):** This folder is the repository for all Workstation & Server related programs used exclusively by IOT&E and SENTEL.
- **DATABASES (DATABASES):** This folder is used to maintain the Property, Personnel, Matrix and Test Team Travel System Databases.

Procedures for using and maintaining MIS folders can be found in Appendix H.

### 3.5.3 Lotus Notes Calendar

The Lotus Notes calendar permits tracking of staff activities and scheduling meetings. The data entry procedures are listed in Appendix I.

**APPENDIX A**

**NEEDS,  
DESIGNATION PROCESS,  
AND  
DESIGNATED PROGRAMS**

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## APPENDIX A

### 1.0 IOT&E DESIGNATION PROCESS

The IOT&E Designation Process is the primary process used to determine customer needs for the organization. The Needs Process Area has been appraised at Integrated Capability Maturity Model (iCMM) Level 3. Through this process, the Office of IOT&E's customers determine which FAA programs will go through an IOT&E; i.e., which programs require services from the Office of IOT&E.

### 2.0 RESPONSIBILITIES

A Program Manager from the Office of IOT&E is assigned to lead the Designation Process. Details of the Lead's responsibilities are discussed below. The Lead is also responsible for the Needs Process Area, for tracking the designation activities via the Designation Checklist (see copies of previous year's checklists on the MIS at BEST\_INFO/DESIGNATION), and for tracking the metric associated with this process.

The responsibilities of the rest of the staff, relative to the Designation Process, are as follows: The IOT&E Director is a member of the Designation Board and is also responsible for assignment of work to the staff, as well as for budget formulation and organizational resource management. IOT&E PMs are responsible for researching, analyzing and providing designation, IOT&E, and resource mitigation strategy recommendations. Administrative staff from the Office of IOT&E provide input into resource impacts and support the Designation Process on an as needed basis. SENTEL personnel may be asked to assist PMs with research into specific programs.

### 3.0 DESIGNATION PROCESS DOCUMENTS

- (1) **Initial Package to Designation Working Group (DWG):** Program Information Sheets for all programs currently designated and for additional programs under consideration. Templates for these information sheets can be found on the MIS at BEST\_INFO/DESIGNATION/InformationSheetTemplate.
- (2) **Final Package to DWG;** Program Priorities/Strategies, three-year schedule showing all projected IOT&E activities
- (3) **Package to Designation Board (DB);** Final DWG Recommendations (Program Priorities/Alternative Strategies), ISD Authority, 3-yr schedule.
- (4) **Package to Vice President of Safety Services:** Designation Memo, including ISD Authorities, for review and presentation to the COO for Signature, along with Designation Board's Final Briefing Package.

#### 3.1 Program Information Sheet:

The Director, Office of IOT&E assigns responsibility for preparation of initial Program Information Sheets to specific IOT&E PMs. PMs prepare the sheets using this guidance document, the program information sheet template on the MIS, and the previous year's briefing package as a starting point. PMs are responsible for conducting research into their assigned programs, providing a designation recommendation, providing initial strategy recommendations, and providing a sound basis for recommendations. PMs should contact Product Team leads and Service and test organization representatives to obtain information for programs that are not currently designated. The program information sheets will be provided to the Designation Lead who is responsible for reviewing the sheets for completeness, consolidating the sheets into a package for staff review, and scheduling a staff discussion. Following the staff discussion, the Designation Lead will make final edits to the program sheets, review the sheets with the Director, IOT&E, and schedule the DWG. The program information sheets will be briefed to the DWG, which will then distribute the sheets for review within their respective organizations.

### **3.2 Designation Board and Vice President of Safety Services Briefing Packages**

Upon receipt of preliminary comments from the DWG, the Designation Lead will work with the Director and staff to assess potential resource impacts and to develop alternative resource mitigation strategies. The Designation Lead is responsible for bringing the DWG to consensus recommendations for: (1) program designation; (2) program/phase priority; (3) resource mitigation strategies. The Designation Lead is also responsible for documenting DWG and Designation Board (DB) decisions. The Designation Lead will prepare a final briefing, containing the recommendations of the Office of IOT&E and the DWG, for review by the DB. The Designation Lead will prepare an IOT&E Designation memorandum for the Vice President of Safety Services to review and forward to the COO for signature. This memorandum will reflect the DB recommendations. The Designation Lead will also prepare the final briefing package for the Vice President of Safety Services and the COO.

#### **3.2.1 Office of IOT&E Resource Impacts**

At the same time that the DWG is reviewing adding/deleting programs for IOT&E, the staff is updating their Program Management Plans (PMPs) to show what resources are needed to accomplish approved IOT&E strategies for designated programs. A composite of IOT&E resource needs is then produced to support upcoming budget activity. This also indicates the organization's ability to take on new programs, based on previously calculated costs for IOT&E activities, assuming a constant funding level. Resource mitigation strategies, such as combining Follow-up activities with phased IOT&Es, are discussed.

#### **3.2.2 Program Priorities**

The DWG will make recommendations to the DB on program priorities. The DWG may consider delaying IOT&E funding/activity on programs at the cost of early issue identification, as well as removal of programs or program phases from Designation if strategies to address IOT&E resource constraints are required.

#### **3.2.3 Communication**

The Designation Lead is responsible for communicating status and results of the DWG and DB deliberations to the IOT&E staff and management throughout the Designation process. This is done via emails, and post-8:45 or offsite discussions.

### **3.3 TRAINING**

Training for the Needs process consists of:

- A two-hour introduction to iCMM, which includes the basic requirements of the Needs process—required attendance: IOT&E staff and SENTEL personnel.
- A training package on the Needs process—required attendance: IOT&E staff and SENTEL personnel.
- FAA's iCMM Needs PA training course—required attendance: IOT&E's Designation Lead.

### **3.4 RESOURCES**

Resource requirements for the IOT&E Designation Process include;

- (1) Approximately 8 hours per program required for IOT&E PMs to prepare initial Program Information Sheets.
- (2) The Designation Lead will devote approximately 20 hours preparing the initial Designation Briefing, 10 hours consolidating comments from the DWG and preparing for the DB, and 10 hours consolidating comments from the DB and preparing for the briefing to the Vice President of Safety Services.
- (3) Approximately 8 hours will be required for IOT&E PMs, the Designation Lead, and the IOT&E Director to conduct a resource analysis and to develop risk mitigation strategies.

### **3.5 METRICS**

See Appendix G for Process Metrics.

## **APPENDIX B**

# **QUALITY ASSURANCE AND MANAGEMENT AND PEER REVIEW PROCESS DESCRIPTION**

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## **Quality Assurance and Management and Peer Review Process Description**

### **1.0 Goal of Quality Assurance (QA) and Peer Review:**

The goal of Quality Assurance and Management and Peer Review is to address the quality of IOT&E products and the quality of the process being used to create the products. In addition, QA provides input to support continuous improvement and to provide management with appropriate visibility into the IOT&E process and products.

The commitment to quality begins with The Director and extends to each staff and support team member. Quality assurance begins with the recognition that the creation of quality, error-free "products" is each person's responsibility. Policies, standards, and processes are defined to assist each person "build in" quality to all products.

### **2.0 Quality Assurance Processes To Be Used in IOT&E:**

In order to assure quality IOT&E products, IOT&E's Quality Assurance program uses three major methods: Reviews, Quality Audits, and an active Program Management Process.

#### **2.1 Peer Review Process:**

The Peer Review Process has three levels, support team, Peer Review, and IOT&E Team review. For major IOT&E documents, all three may be involved, while organizational documents may only require one of these.

##### **2.1.1 Support Team Review:**

Support team review will provide strategic, technical, operational, procedural, and editorial accuracy of IOT&E-produced documents. It will also provide strategic, operational, technical, and procedural accuracy of IOT&E processes, and strategic and operational accuracy in monitoring acquisition program activities and reviewing acquisition program documentation. The support team includes the Lead and the SENTEL personnel for that project. The Lead manages support team review. Comments are tracked via notes, emails, meeting minutes, and action items are retained by the Lead.

##### **2.1.2 "Peer" Review:**

"Peer" review will provide strategic, technical, operational, and procedural input for a specific document. Peer reviewers may include the IOT&E organization personnel that are peers of the document producer or those affected by the documents. Peers for an IOT&E Plan and IOT&E Report Briefing will be different from those of the Strategic Plan. The responsible document producer distributes the document with any guidance and a due date. Comments are provided to the Lead via email or redlines to the document; or, in the case of the results briefing, the comments are provided during the dry run. The document producer may conduct a telcon/meeting to discuss substantive comments, and may revise the document as necessary. The document producer is responsible for tracking and retaining the decision record, which includes email soliciting comments, and comments received. An acceptable level of reviews for the IOT&E peer review process is one half of the document producer's peers/users of that document. It is strongly suggested that the document producer target the reviews by selecting appropriate reviews for the document versus sending it to the entire staff.

##### **2.1.3 IOT&E Team review:**

The IOT&E Teams review documents for which they are the approval authority, or those that express their assessments. The review is primarily to obtain IOT&E Team input and confirmation of strategy and issues. The IOT&E PM will maintain records of requesting IOT&E Team input and of comments

received. This may be via meeting or telcon minutes. In addition, the IOT&E Team monitors acquisition program activities and participates in IOT&E processes.

#### **2.1.4 Comment Resolution Matrix (CRM):**

For IOT&E Plans, the IOT&E PM is required to maintain and distribute a CRM documenting comments received from the “Peer” and IOT&E Team reviews and the disposition of the comments.

## **2.2 Other Reviews**

Other reviews are conducted, as appropriate, on IOT&E-produced documents.

### **2.2.1 The Director Review:**

The Director review will ensure that IOT&E products are acceptable and understood from a strategic/policy viewpoint, will ensure that the IOT&E strategy is supportable from a resource aspect, and will ensure that the final document meets quality expectations. Reviews and comments may be provided verbally, via email, or denoted by management signature on the document cover. The IOT&E PM will dispose of comments and retain documentation.

### **2.2.2 Tech Editor Review:**

Tech Editor reviews are conducted prior and subsequent to Peer and the Director reviews, as appropriate. The Tech Editor review will ensure the document is grammatically correct and polished, that it conforms to plain language requirements, and that it is consistent with IOT&E standards on document format and content. The Tech Editor will provide the IOT&E PM with a redlined version and an email note that documents the review. The IOT&E PM will make the final determination to accept or reject proposed changes.

### **2.2.3 Secretary Review:**

The secretary review will ensure that FAA Memorandums are grammatically correct and polished, that they conform to plain language requirements, and that they are consistent with IOT&E/FAA standards on document format and content. The Secretary will provide a grid copy to “must” reviewers prior to final signature.

## **2.3 QA Audits:**

The IOT&E Specialist manages the quality assurance program and performs audits. QA audits are performed every two years for each IOT&E program. The audits will entail a review of the program to see if the IOT&E process was followed. A checklist will be developed and used that covers the processes for the various IOT&E products. Audit results will be documented in a Quality Assurance Audit Report, with areas of noncompliance noted. A database is used to track noncompliance reports and corrective actions. The data from the audits and non-compliance reports are analyzed and trends reported yearly. Specific procedures for the QA audits have been developed and are contained at the end of this appendix.

## **2.4 Program Management**

This is covered in the body of this document in Sections 2.2.4.1.1 and 2.4.2 along with Appendix D.

### **3.0 Governing Policies, Processes, and Standards that products and process will adhere to:**

- **AMS FAST:**  
Addresses policy and process guidance for the FAA Acquisitions, including test and evaluation.  
**AMS Policy:** Addresses policies for FAA acquisition, including test and evaluation.  
**AMS Guidance:** Addresses FAA process guidance for IOT&E, Field Familiarization and System Test, development of MNS, RDs, ASPs, and IPPs.
- **IOT&E Operations Manual:**  
Addresses IOT&E internal policies and procedures for IOT&E and supporting processes.
- **IOT&E MIS (supplemented by the IOT&E Operations Manual):**  
Provides tools and templates to support consistent implementation of IOT&E policies and processes. These include:
  - Templates and examples of PMPs, Plans, Procedures (including questionnaires), Reports
  - Training
  - Program Files
  - Designation Process and Status
  - IOT&E Schedule
- **FAA Correspondence Manual:**  
Addresses guidance on the preparation of FAA correspondence.

### **4.0 Enforcement, Waivers and Non-compliance:**

The IOT&E QA and Peer Review policy and processes are to be followed, as applicable, by all IOT&E staff and SENTEL personnel unless a waiver is obtained from the Director . Any waiver will be documented. Enforcement of QA and Peer Review is accomplished via The Director support of the IOT&E Operations Manual and the QA Audit function. Issues of noncompliance to standards will be evaluated on a case-by-case basis. Resolution will be attempted to be resolved first within the program team, then with the POC for that standard, and finally with the Director, if required. The Office of IOT&E will attempt to resolve issues of noncompliance at the lowest levels.

### **5.0 Responsibilities:**

The overall responsibility for implementing the improved QA and Peer Review process within IOT&E belongs to each IOT&E PM or document producer. Specific responsibilities as detailed in the review process tables. IOT&E management is responsible for setting the QA expectation within the organization. The QA Manager is responsible for the QA audit process.

### **6.0 Training:**

iCMM training on QA is required for the QA Manager; the current IOT&E QA Manager has completed this training. In addition, the IOT&E staff and SENTEL personnel are required to attend an iCMM introduction. Training to the IOT&E staff and SENTEL on the implementation of QA and Peer Review within the Office of IOT&E is provided. Additional training will be provided if requested.

## **7.0 Resources:**

Implementing and maintaining the QA process within the Office of IOT&E requires minimal additional effort on behalf of the IOT&E staff, primarily related to keeping records of actions already undertaken. Approximately 10-15% of the QA Manager's is required to be spent in auditing activities, training and coordinating the metrics.

## **8.0 Quality Improvement Opportunities:**

Opportunities for quality improvement within IOT&E can come from a variety of sources, including:

- Peer Reviews
- Lessons Learned reviews and presentations following an IOT&E conduct
- Review and update of the IOT&E Operations Manual every six months
- Results from audits
- Monthly IOT&E staff Off-sites
- Staff suggestions to Management and staff
- Quarterly contract reviews
- Customer Feedback

## **9.0 Products and Processes covered by QA and Peer Review:**

The following matrices present the IOT&E products and processes, with the applicable type of review and Governing Policy, Process, and Standard(s).

## **10.0 Records:**

Notes, emails, comments, draft document versions, CRMs, and minutes from meetings, telcons, and reviews held during the development of an IOT&E product should be kept by the IOT&E PM for that program, or by the responsible party for that activity. All documentation should be held until 1 month after the Follow-up Report has been delivered and the IOT&E activity has been completed on that program. Documentation held by the document producer may be stored via soft copy. Final copies of IOT&E-produced documents (see the list in matrix 1) are kept permanently by the IOT&E secretaries in both ACY and DC, and can also be kept in the IOT&E PM files. The documentation should record the request for review, comments received, changes made or not made, and the final outcome. Records of QA audits will be kept by the QA Manager.

**Please refer to Appendix G, Process Metrics, for the metrics applicable to this process.**

**MATRIX 1: IOT&E DOCUMENTATION QUALITY REVIEW PROCESS**

DOCUMENT	APPROVAL AUTHORITY	STANDARD REVIEWERS								GOVERNING POLICY/ PROCESS/STANDARD			
		IOT&E Team	Support Team	Peer	The Director	Sec'y	IOT&E Spec	Labor POC or PM POC	Tech Edit	AMS	IOT&E Ops Manual	MIS BP	Correspondence Manual
Project Management Plan	Director		X		X		X	X	X		X	X	
<i>IOT&amp;E Section IRD/RD</i>	IOT&E PM		X				X			X	X	X	
<i>IOT&amp;E Section ASP</i>	IOT&E PM		X				X			X	X	X	
<i>IOT&amp;E Section IPP</i>	IOT&E PM		X				X			X	X	X	
IOT&E Plan and revisions *	IOT&E Lead	X	X	X	X	X	X		X	X	X	X	X
IOT&E EOA or Early IOT&E Plan*	IOT&E Lead	X	X	X	X	X	X		X	X	X	X	X
IOT&E Procedures	IOT&E Lead	X	X				X		X		X	X	
--Questionnaires	IOT&E Lead	X	X□				X	X	X		X	X	
Issue Papers	IOT&E Lead	X	X						X		X	X	
White Papers*	Director		X		X	X			X		X	X	X
Pre-IOT&E Issue Paper	IOT&E Lead	X	X		X				X		X	X	
IOTRD Acceptance Memo*	VP of Safety Services	X			X	X					X	X	X
IOT&E Results Briefings	IOT&E Lead			X	X						X	X	
IOT&E Report* #	IOT&E Lead	X	X		XX	X			X	X	X	X	X
IOT&E Follow-up Plan##	IOT&E Lead	X	X		X	X			X	X	X	X	X
FAA Memorandums	Signatory					X						X	X
Follow-up Report*	IOT&E Lead	X	X		XX				X	X	X	X	X

\*These products require a cover memorandum, which must go through IOT&E Secretary review

XX Comments by The Director are incorporated at the discretion of the IOT&E Team.

# This includes IOT&E EOA, Early IOT&E, Interim and Termination Reports

## Depending on the program, the Follow-up Plan may vary from a single page description to a full plan

□ Includes review by SENTEL Questionnaire POC

**MATRIX 2: IOT&E PROGRAM AND IOT&E PROCESS QUALITY REVIEW PROCESS**

PROCESS	STANDARD REVIEWERS				GOVERNING POLICY/PROCESS/STANDARDS							
	Support Team	IOT&E Team	Peer	Tech Editor	AMS	Project Plan	RD	IOT&E Ops Manual	IOT&E Plan	IOT&E Procedures	ASP/IPP	MIS Best Info
Program’s Master Schedule	X					X						
Review Development/SAT Test Plans**	X						X	X			X	
Monitor DT	X	X**				X	X					
Review OT Plan	X											
Monitor OT	X	X					X		X	X		
Monitor SAT	X	X					X		X	X		
Monitor FF	X	X					X		X	X		
IOT&E Ops Manual *	X		X	X	X							X
MIS	X		X		X	X		X				
New Emp. Familiarization & IOT&E training			X					X				
Strategic Plan & AP			X	X								

\* Conducted twice each year

\*\* Optional

## **IOT&E QUALITY ASSURANCE AUDIT PLAN AND PROCESS**

The order and dates of audits will be determined by the QA manager in conjunction with the Director at the start of each fiscal year. Each program should be audited every two years.

For each specific QA Audit:

- A. Identify products to be reviewed via checklist tailored for the program. Provide IOT&E PM or Process Lead with list of requested documents/files. (QA Manager)
- B. Pre-Audit Conference: Meet with selected program lead/process lead in advance of audit date to review the list of materials requested for the audit and set mutually compatible date(s)(within 10 working days) for the Lead to provide the requested documentation. (QA Manger & Lead)
- C. Review Files/Documents/Process provided by lead. (QA Manager)
- D. Meet with the IOT&E PM or Process Lead, and review draft Non-Compliance (NC) reports. For those items that the PMs feels they may have the missing documentation, set 3-5 working day timeframe for them to gather information and provide to QA Manager. (QA Manager and Lead)
- E. Review supplemental documentation provided by Lead and amend/cancel areas of non-compliance, if appropriate. (QA Manager)
- F. Finalize the areas of non-compliance and write up formal NCs. (QA Manager).
- G. Prepare audit report for the Lead of the audited program/process and the Director. (QA Manager)
- H. Put NC data into Audit Database. (QA Manager)
- I. Set date for audit follow-up in six weeks, if any open NCs. (Lead and QA manager)
- J. At six-week follow-up, all NCs will be either closed resolved or closed unresolved.
- K. Keep Audit database up to date with closures of non-compliance items.

At the end of each fiscal year, the QA Manager will analyze the non-compliance items in the database, along with the QA Reports and prepare a Trends Briefing for the staff



**APPENDIX C**  
**ENTERPRISE MANAGEMENT PROCESS**

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## **1.0 PURPOSE**

The ATQ Integrated Enterprise Management process uses an annual strategic planning process to assess its internal and external environment, and then align organizational resources, business processes and working environment to meet evolving customer needs. Both internal and external customers' needs are considered.

## **2.0 ATQ STRATEGIC PLANNING PROCESS**

Strategic planning is the key integrated enterprise management process in ATQ. The ATQ strategic planning process identifies current customers' evolving needs, and future customer markets. The strategic planning process then measures the gap between future customer demand for services and current organizational capability to supply those services. A strategic plan is developed to create a bridge from the current to the desired future state. Actions are identified that would align resource capabilities and service offerings with anticipated customer needs, commensurate with the organization's stated vision, mission, and values. ATQ strategic planning is directed toward continuous improvement in service offerings to deliver the highest quality of service to satisfied customers.

### **2.1 ESTABLISH AND MAINTAIN STRATEGIC VISION**

The Strategic Planning Lead starts the annual strategic planning process in the Spring with a review of the current ATQ Vision, Mission, and Values statements. These statements can be found in the front of the ATQ Strategic Plan and the Operations Manual. The Strategic Planning Lead documents any proposed changes to the Vision, Mission, and Values in a Strategic Plan draft.

### **2.2 ALIGN TO ACHIEVE THE VISION**

Changing needs are considered to provide continuing support of the ATQ vision. The ATQ training and evaluation process aligns employee skills with competencies to operate the enterprise efficiently and achieve the organizational vision. Monetary and non-monetary incentives align recognition with desired enterprise outcomes. Decision-making approaches, such as consensus and facilitation, support the organizational direction. ATQ Offsites provide a common understanding of purpose to ensure consistency of processes throughout ATQ.

### **2.3 ESTABLISH AND MAINTAIN STRATEGY**

Key areas may be scanned for emerging aviation issues, such as: the aviation industry, Congress, Federal policies and systems, FAA, ATS, ATO, Customers/stakeholder needs, and the workplace environment, among others. After considering key factors (e.g., customer expectations, new service opportunities, and organizational capabilities), goals and objectives are developed to bridge from the current state to the desired future state. In the summer, the Strategic Planning Lead assesses the need for changes to the currently established goals and objectives using external information and inputs from ATQ and SENTEL employees. In late summer, the Strategic Planning Lead presents ATQ and SENTEL employees with any recommended changes to the Goals. Following group discussion and inputs, the Strategic Planning Lead submits a draft revised Strategic Plan for full peer review. After comments are addressed, the Strategic Plan is updated and released not later than December 30 of the planning year.

### **2.4 DEVELOP AND DEPLOY ACTION PLANS**

The Strategic Action Plan is updated in January, as needed; all objectives have an assigned point of contact (POC), and due date. In January, the Strategic Planning Lead begins tracking of the revised Strategic Plan actions. Strategic Action Plan tracking continues each month, except in late Fall, during transition to a revised Strategic Plan.

The Strategic Planning Lead solicits input monthly from POCs on status of upcoming actions. Each action is updated, marked as completed (if applicable) or marked as "Overtaken by Events" where

changing needs have been identified, and a strategic objective is no longer viable. Likewise, ATQ management and staff may identify a new strategic objective to be included during the planning cycle.

## **2.5 REVIEW PERFORMANCE: ACT ON RESULTS OF REVIEW**

POCs maintain necessary milestones and provide performance results for strategic objectives. The Strategic Planning Lead will facilitate a Strategic Performance Review with ATQ employees in the Spring, at the beginning of the annual strategic planning cycle.

## **3.0 RESPONSIBILITIES**

The Strategic Planning Lead is responsible for managing the ATQ Integrated Enterprise Management process. ATQ-4 is the Strategic Planning Lead. There is no designated backup.

All ATQ employees are responsible for establishing, maintaining and recommending updates to the vision, mission, values, goals, and objectives of the enterprise throughout the strategic planning cycle, using a consensus process for decision-making.

The Director are responsible for assignment of work to complete the strategic performance goals, and the strategic planning process..

## **4.0 FULFILL PUBLIC RESPONSIBILITY**

Generally, issues of public concern (including ethical business practices) are addressed via government-wide reporting processes, such as General Accounting Office program reviews, Equal Employment Opportunity Reports, annual ethics training and financial disclosure requirements. Environmental improvement efforts may include involvement in aviation education, building safety, blood drives, Combined Federal Campaign, and other corporate-level efforts. Health, safety, environment, and security risks associated with ATQ operations are reviewed as part of the strategic planning and Operations Manual update processes.

## **5.0 COMMUNICATION**

The Strategic Planning Lead is responsible for communicating status of the monthly Strategic Action Plan to ATQ management and staff throughout the strategic planning process. The Strategic Planning Lead is responsible for coordinating the organization's proposed strategic plan with key customers prior to final release. The Strategic Planning Lead is responsible for communicating evolving strategic information (for example, from ATS Planners Group, other sources) of relevance to the organization in a timely manner.

## **6.0 TRAINING**

- A 2-hour introduction to iCMM, which includes the basic requirements of the Integrated Enterprise Management process – required attendance: ATQ staff and contractor support personnel.
- A training package on ATQ's Integrated Enterprise Management process—required attendance: ATQ staff and contractor support personnel
- FAA's iCMM Integrated Enterprise Management PA training course—required attendance: Strategic Planning Lead.
- 36 hour CMD training course, Strategic Planning—required attendance: ATQ Strategic Planning Lead

## 7.0 RESOURCES

Resources for the Integrated Enterprise Management Process include:

- Strategic Planning for FAA Strategic and Performance Goals:
  - APO-120, Strategic Planning Branch
- ATS Strategic and Performance Planning
  - ASC-100, ATS Planners Group Lead
- ATS Executive Performance Goals
  - AAF-3A, Executive Incentive Systems Lead
- ATS Model Work Environment
  - ATS-9, National Program Manager for MWE, for MWE Council Lead, MWE Coordinators Telcon, and MWE Policy, Guidance, and Action Planning, Volumes I and II
  - AAM-500 or ATS Website, FAA/ATS/ATQ Employee Attitude Survey
- ATQ Designated Services, Needs, and Training
  - ATQ-2, ATQ Prioritized IOT&E List
  - ATQ-3, Designation, Needs and Training Process Lead
  - ATQ-4, ATQ Task Assignments List
  - ATQ Customer Survey Team, ATQ Bi-annual Customer Feedback Survey

## 8.0 METRICS

- Metrics for this process are contained in Appendix G.

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**APPENDIX D**  
**PROGRAM MANAGEMENT**

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## **Program Management Process Guidance**

### **1.0 IMPLEMENTATION OF PROGRAM MANAGEMENT PLAN**

IOT&E's Program Management policy and a high level description of the PM process is described in Section 2.4.2.1 of this document. In addition, a template and instructions for Program Management Plans (PMP), which provides a detailed description of IOT&E's program management process is located in the MIS Best Info PMP folder.

### **2.0 RESPONSIBILITIES**

The overall responsibility for IOT&E's Program Management process belongs to the IOT&E Program Management Lead. IOT&E PMs are responsible for program management, including developing PMPs, for their assigned program(s) and submitting them to the Director for approval. IOT&E's staff and SENTEL personnel participate in program management and in the development of PMPs according to their level of involvement with specific program, i.e., Back-up IOT&E PMs, Technical Lead, technical support, administrative support.

### **3.0 TRAINING**

Training for the program management process consists of:

- A two-hour introduction to iCMM, which includes the basic requirements of the Program Management process—required attendance: IOT&E staff and SENTEL personnel.
- A training package on IOT&E's Program Management process—required attendance: IOT&E staff and SENTEL personnel.
- FAA's iCMM Program Management PA training course—required attendance: IOT&E's Program Management Lead.

### **4.0 RESOURCES**

Resource requirements for developing and managing a Program Management Plan include:

- (1) Approximately 40 hours are required to develop an initial, approved version of a PMP.
- (2) Approximately 6 hours per week are required to manage resources and to track schedule information. Additional program management activities, such as risk identification, occur as integral aspects of IOT&E monitoring, planning, and execution.
- (3) Approximately 30 hours are required to develop annual or semi-annual PMP updates.

**Please refer to Appendix G, Process Metrics, for the metrics applicable to this process**



## **APPENDIX E**

# **IOT&E RISK MANAGEMENT PLAN AND PROCESS GUIDANCE**

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## 1.0 RISK MANAGEMENT

The Purpose of Risk Management is to identify and analyze risks to the achievement of project objectives and to execute plans that reduce the likelihood and/or consequence of risks. IOT&E's Risk Management Plan and Process Guidance addresses the identification, tracking, reporting and managing of identified risk. IOT&E's risk identification activity begins with the Designation Process, and specifically with the identification of Resource Impacts and Strategies for candidate programs. IOT&E integrates Risk Management into the Program Management process. Guidance is provided in Section 2.4.2.1 and Appendix D of this document on Program Management Plans (PMP), which includes provisions for risk management. A MIS Best Info template for PMPs provides a detailed description of IOT&E's Program Management Process.

## 2.0 RESPONSIBILITIES

The IOT&E Program Management Lead is responsible for the overall implementation of Risk Management in IOT&E. IOT&E PMs are responsible for identifying and managing risk for their assigned programs. The Director is responsible for providing guidance in the management of risk as described in Risk Management Activities and Mitigation Approaches. IOT&E's staff and SENTEL personnel participate in risk management and in the development of PMPs according to their level of involvement with specific program, i.e., Back-up IOT&E Team Leads, Technical Lead, technical support, and administrative support.

## 3.0 RISK MANAGEMENT ACTIVITIES AND MITIGATION APPROACHES

The following activities and risk mitigation approaches will be used to manage risk associated with the implementation and management of IOT&E programs. Table RM-1 defines specific tools and activities which are used to track and manage the potential IOT&E program management risks indicated below:

- Program schedule movement is tracked and compared monthly to program resource estimates (e.g., IOT&E personnel, IOT&E Team personnel, SENTEL resources, etc.) to determine when program slippage will affect IOT&E personnel and IOT&E Team personnel and contract support resource planning. The IOT&E PM manages resource impacts for specific programs and may escalate resource issues to the Director when program-specific issues cannot be resolved. The Director works with the support Lead and with pertinent IOT&E PMs to address resource impacts with cross-program impacts.
- IOT&E Team member availability is monitored and managed based on program movement, IOT&E Team telcons, and coordination with members' management. When it appears likely that a member will not be available as needed for IOT&E, the IOT&E PM must work with the Team member, the member's management chain, the Labor POCs, and the Director, as appropriate.
- SENTEL support funding and availability is monitored and managed in accordance with IOT&E's Contracts Management process and through review of the IOT&E/SENTEL Prioritized Assignments, Upcoming IOT&E Events sheet, and monthly invoice reviews. Problems with contract support availability are worked through COTR, the Back-up COTR, and the SENTEL Program Manager.
- IOT&E and IOT&E Team Travel and BFOT Funding: Adherence to IOT&E Operations Manual section 2.3.3 is required in order to estimate, track, and manage travel and BFOT estimates and expenditures. IOT&E PMs monitor and update travel and BFOT requirements monthly as a part of MIS reviews. The Director and the PA track and manage travel and BFOT funding at an organizational level. IOT&E PMs and the Director work to address program-specific issues with travel and BFOT funding.
- Early Identification of Operational Risks: This is managed through IOT&E and SENTEL attendance at program and technical meetings as well as at early test events. IOT&E Team members also attend System Test events. Issue papers and White papers are produced to communicate identified risks to the ATO Stakeholders. IOT&E PMs are responsible for communicating activities, including significant issues, to the Director through daily telcons and weekly activity reports and through the monthly MIS Status Review. The IOT&E PM requirement to conduct Program Status Reviews and Good-To-Go briefings are an additional vehicle to track progress toward early identification of risks. The Director provides guidance on program management activities and on the development and timing of the Issue or White papers.
- Accurate and Timely IOT&E Assessment: This risk is managed through the IOT&E processes outlined in the IOT&E Operations Manual. In addition, the monthly MIS Status Review is used by the Director and to

track the status of IOT&E preparation, project deliverables, and significant coordination activities. The IOT&E PM requirement to conduct Program Status Reviews and Good-To-Go briefings are additional vehicles to ensure an accurate and timely IOT&E assessment. The Director provides coaching on planning and preparation for IOT&E when appropriate.

- Variance in IOT&E strategy may be necessary as a result of changes to: program schedules, deployment strategy, system requirements or functions, ATO Stakeholders' needs/requests. Strategies to manage this risk include working with ATO Stakeholders during the IOT&E Designation Process to determine IOT&E strategy, and coordinating IOT&E strategies and plans with IOT&E staff and ATO Stakeholders subsequent to Designation. The need to modify IOT&E strategies are identified through IOT&E and SENTEL attendance at program and technical meetings, and through communication with ATO Stakeholders via their representatives on the IOT&E Team and through the annual IOT&E Designation Process. IOT&E PMs are responsible for communicating activities, including the potential need to modify IOT&E strategy, to the Director through daily telcons and weekly activity reports, through the monthly MIS Status Review, Program Status Reviews and IOT&E Strategy Sessions. When it appears likely that the IOT&E strategy will change, the IOT&E PM coordinates with the Director as well as ATO Stakeholders, and will conduct an IOT&E strategy session with IOT&E staff. The Director provides guidance on managing changes to IOT&E strategy. Significant changes to strategy are reflected in revisions to PMPs and IOT&E plans and procedures.

#### **4.0 TRAINING**

Training for the risk management process consists of:

- A two-hour introduction to iCMM, which included the basic requirements of the Risk Management process—required attendance: IOT&E staff and SENTEL personnel.
- A training package on IOT&E's Risk Management process—required attendance: IOT&E staff and SENTEL personnel.
- FAA's iCMM Risk Management PA training course—required attendance: IOT&E's Program Management Lead.

#### **5.0 RESOURCES**

Resource requirements for Risk Management;

- (1) Approximately 40 hours are required to develop an initial, approved version of a PMP.
  - (2) Approximately six hours per week are required to manage resources and to track schedule information.
- Additional program management activities, such as risk identification, occur as integral aspects of IOT&E monitoring, planning, and execution.

**Please refer to Appendix G, Process Metrics, for the metrics applicable to this process.**

**IOT&E PROGRAM MANAGEMENT AND RISK MITIGATION REVIEW ACTIVITIES**

ACTIVITY	FREQ	PREPARED BY				REVIEWERS					PURPOSE
		Sec'y	Ctr. Supt	PM	Ctr. PM	Director	COTR	PEER	PA	PM	
IOT&E telcons w/ minutes	Daily	X									Full staff telcon to communicate significant activities/information to the Director and other staff.
Activity Reports	Twice/month			X		X		X			On-going status of programs and projects staff is working
IOT&E Action Item list	Monthly	X				X		X			Ensure all controlled actions, including off-site action items are completed.
Program Action Items	Monthly		X	X						X	Used to manage on-going program and planning activities.
IOT&E Good-to-Go Checklist	Monthly		X	X						X	Tool for ensuring all activities required to prepare for IOT&E conduct are complete.
Schedule comparison	Monthly		X	X		X					Ensure program and IOT&E schedules are in-synch. Flag need to revise IOT&E strategy. Flag issues associated w/ aggressive schedules and schedule movement.
IOT&E Team telcon w/ minutes	Per PM		X	X						X	Communicate program status/issues and issues w/ team members, facilities, etc.
MIS Status Review	Monthly		X	X		X				X	Automated management tool to track status of program schedule, strategy and top issues as well as IOT&E deliverables.
IOT&E Team travel/BFOT estimates and actuals	Monthly			X					X		Accurate projections and efficient management of team travel and BFOT funds.
T.I. Summary Review	Monthly				X		X			X	Review monthly invoice for accuracy and for trends to manage contract support expenses.
IOT&E /SENTEL Prioritized Assignments and Upcoming IOT&E Events	Monthly				X	X	X			X	Review to anticipate SENTEL resource demand and availability
IOT&E travel estimates	Monthly			X		X			X		Annual estimates reviewed monthly for actual vs. estimated. Accurate projections and efficient management of IOT&E travel funds.
IOT&E Program Status	As needed		X	X		X		X			Review of program status, IOT&E strategy/status, top issues, schedules, required resources.
Good-To-Go Review	1 month prior to IOT&E		X	X		X		X			Review checklist to ensure all activities and coordination complete, resources available, program on-track, and to identify final actions required prior to entering IOT&E.

Table RM-1

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## **APPENDIX F**

# **SUPPLIER AGREEMENT MANAGEMENT PROCESS**

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# **SUPPLIER AGREEMENT MANAGEMENT PROCESS**

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## **1.0 PURPOSE OF SUPPLIER AGREEMENT**

The purpose of developing a Supplier Agreement Management process is to ensure that the activities under contract are being performed in accordance with contractual requirements, and that evolving products and services delivered by SENTEL will satisfy not only contractual requirements, but also IOT&E's needs and quality standards.

## **2.0 CONTRACT MANAGEMENT GOALS**

The IOT&E Supplier Agreement management process is built on the five goals that are listed below. Required activities are discussed in detail under each of the goals later in this document. To aid in a more focused understanding on the process, however, a brief listing of required activities is presented, organized for each participant in IOT&E's Supplier Agreement management process.

- 2.1 The contract is kept consistent with the requirements of the IOT&E tasking, the FAA's Acquisition Management System and related documentation, and the IOT&E Operations Manual.
- 2.2 SENTEL performance, products, and services are reviewed throughout the contract period in order to identify risks, problems, and appropriate corrective actions.
- 2.3 Measurements are used to track SENTEL's performance.
- 2.4 Communications between IOT&E and SENTEL are established and maintained.
- 2.5 Acceptance of deliverable products and services is based on meeting the terms and conditions in the contract.

## **3.0 IOT&E PROGRAM MANAGER'S RESPONSIBILITIES**

- 3.1 Throughout the performance period of the IOT&E task, provide technical direction and guidance to assigned SENTEL personnel in the conduct of IOT&E activities and the development and delivery of IOT&E products (Issue/White Papers, Plans, Procedures and Reports). Review all SENTEL documents for accuracy, analyze the information to aid in resource management, and maintain files to ensure required actions are completed.
- 3.2 Monthly, review and approve SENTEL's applicable Task Invoice and maintain a file with appropriate questions, corrections, or actions. This includes, as needed, coordinating and approving SENTEL overtime.
- 3.3 Monthly, review SENTEL's applicable Task Budget Summary Review and maintain a file with appropriate funding concerns, plans, or actions.
- 3.4 Monthly, review the composite SENTEL Travel expenditures summary. Maintain a file with appropriate notes.
- 3.5 Monthly, review and approve the update of the applicable Management Information System (MIS) task folders. Ensure this deliverable product meets IOT&E's needs and quality standards.
- 3.6 Via the IOT&E Project Management Plan, provide accurate estimates of SENTEL resource requirements (including travel) to The Director. Update these estimates at least yearly or as changes in project schedule, strategy, etc. require.

- 3.7 After completion of an IOT&E Report, coordinate “Lessons Learned” inputs from other members of IOT&E and the SENTEL team. Present the ‘Lessons Learned’ brief to IOT&E, then direct an entry into the appropriate MIS BEST\_INFO folder. Maintain a copy of the completed brief with any appropriate notes.

#### **4.0 CONTRACTING OFFICER’S TECHNICAL REPRESENTATIVE RESPONSIBILITIES**

- 4.1 Obtain adequate contract funding in accordance with the FAA budget process based upon overall Contract Resource Requirements, as derived from current IOT&E Project Management Plans for all IOT&E designated programs.
- 4.2 Direct and instruct IOT&E PM’s in their role of providing oversight of SENTEL performance.
- 4.3 Assess, approve, and coordinate with the IOT&E PMs for SENTEL task assignments/re-assignments based upon prioritization of IOT&E events.
- 4.4 Monthly, review the IOT&E PMs Task Invoice approvals. Approve SENTEL’s overall invoice or coordinate any differences with SENTEL, the IOT&E PM and the assigned Government Contracting Officer. Maintain a file of the approved invoices with appropriate notes.
- 4.5 Monthly, review the overall Contract Budget Summary Review for proper task funding allocation. Maintain a file with appropriate notes.
- 4.6 Monthly, review SENTEL’s Deliverables letter indicating completion of MIS updates for all tasks, including notes from any subsequent meetings.
- 4.7 Monthly, meet with the Contract Management Team (COTR, Back-up COTR, SENTEL’s PM, and SENTEL Deputy PM) to review contract performance, staffing plans, and other issues as necessary.
- 4.8 At least semi-annually, schedule a government-only offsite where one of the agenda topics will be a review of SENTEL services and performance. Create notes on these topics and transmit questions/issues to SENTEL for presentation/discussion at the next IOT&E Offsite.
- 4.9 Prior to the contract anniversary, schedule a meeting with SENTEL’s PM to review contract compliance with FAA regulations, evolving IOT&E requirements, and the need for contract modifications and/or the update of this Contract Management Process. Coordinate or combine this meeting with an annual Government Contracting Officer’s meeting to discuss contract compliance. Maintain a file of the agenda of these meetings with appropriate notes.
- 4.10 After completion of a significant IOT&E product, schedule a meeting with the IOT&E PM for a review of SENTEL support. Maintain notes of this meeting and facilitate any required action.
- 4.11 At least one year prior to the completion of the primary contract support vehicle, conduct an analysis of procurement options (i.e., FAA versus outside agency (GSA) procurement process.)
- 4.12 At least one month prior to the required contract award, establish an evaluation team, schedule for review of RFP, SOW, and vendors’ proposals, and ensure adequate staffing is available.
- 4.13 Develop Lessons Learned for outsourcing of major contractor support, three months after contract award.

#### **5.0 IOT&E SPECIALIST RESPONSIBILITIES**

- 5.1 Inform the Office of IOT&E and SENTEL of impending changes to the AMS which may affect the contract, iCMM, or the IOT&E process.
- 5.2 As the iCMM Lead for IOT&E, advise iCMM functional area leads in order to ensure consistent implementation of iCMM within IOT&E.
- 5.3 Six months following outsourcing for primary contractor support, conduct a Quality Assurance assessment on the contract evaluation process.

#### **6.0 CONTRACTOR PROGRAM MANAGER RESPONSIBILITIES**

- 6.1 Monthly, ensure delivery of applicable Task Invoices to each IOT&E PM with any notes or attachments necessary to properly define listed expenditures.
- 6.2 Monthly, ensure delivery of applicable Budget Summary Reviews to each IOT&E PM with notes concerning projected funding requirements.
- 6.3 Monthly, ensure the Task MIS updates are completed and the COTR is notified in accordance with contract requirements concerning deliverable products.
- 6.4 Monthly, schedule Contract Management Team meetings to discuss contract support, review feedback from IOT&E PMs, and direct actions necessary to increase communications.
- 6.5 Semi-annually, supply required inputs to the government-only review. Respond to the questions/issues received from that review and track any action items. Maintain a file of these events.
- 6.6 Prior to the contract anniversary, schedule a meeting with the COTR to discuss contract compliance with the evolving IOT&E requirements, FAA policy, and government regulations.
- 6.7 After the IOT&E Report is completed, ensure the support “Lessons Learned” are briefed to all SENTEL personnel and any required changes are incorporated in SENTEL policies. Maintain a file of these events.
- 6.8 Whenever Task priorities shift, ensure the approved support personnel assignment policy is followed. Maintain a file of these events.
- 6.9 Whenever a new support person is hired, ensure the approved “new-hire” policy is followed. Maintain a file of these events.

## **7.0 CONTRACTING OFFICER RESPONSIBILITIES**

- 7.1 As necessary, meet with the IOT&E COTR to determine the need for contract modifications in terms of scope, costs, deliverables, Statement of Work, etc. in order to meet IOT&E support needs.
- 7.2 Authorize those modifications as appropriate.
- 7.3 Meet annually with the IOT&E COTR to determine Contract compliance.

## **8.0 CONTRACT MANAGEMENT PROCESSES**

IOT&E and SENTEL already use all of the following processes in the normal completion of their work. Proper retention of documentation will substantiate IOT&E’s ability to meet the five goals of sound contract management. The processes are organized according to the goals they support.

### **8.1 THE CONTRACT IS KEPT CONSISTENT WITH THE REQUIREMENTS.**

- a) The Contract Management Team (COTR, Back-up COTR, SENTEL PM, and SENTEL Deputy PM) will meet monthly. One of the primary topics will be a review of IOT&E requirements and SENTEL’s ability to meet those requirements within the contract. The second required topic will be a quality assurance assessment of SENTEL.
- b) At the contract anniversary, an annual review will occur between the COTR and SENTEL’s PM concerning the compliance of the contract with all applicable regulations and IOT&E requirements. The review will be preceded by one of the semi-annual government-only meetings in order to discuss evolving IOT&E requirements and the need for possible contract changes. SENTEL’s PM is responsible for maintaining a file of IOT&E inputs, documenting the need for any resulting contract changes, and tracking their progress. In coordination or combination with this meeting, the COTR will schedule a meeting with the assigned Government Contracting Officer. The COTR will direct SENTEL’s PM, Deputy PM, Contracting Officer, or other required corporate staff to attend as necessary. The COTR will maintain a file of these meetings and track any resulting actions.
- c) Prior to the assignment of any new contract tasks, the COTR, Back-up COTR, SENTEL’s PM and Deputy PM will review contract requirements (i.e. deliverable products, support personnel qualifications, Contract Management process) as they apply to the new tasks. The assigned

IOT&E PM will also attend this meeting. SENTEL's Deputy PM is responsible for maintaining minutes of the meeting and tracking any resulting actions.

- d) With any allocation of contract funding, the COTR, Back-up COTR, SENTEL's PM and Deputy PM will meet to review funding distributions and contract requirements to ensure consistency. SENTEL's Deputy PM is responsible for maintaining minutes of this meeting and tracking any resulting actions.
- e) The IOT&E Specialist will notify the IOT&E Program Analyst, SENTEL's PM, and other IOT&E personnel as necessary, concerning any changes that occur to the AMS. SENTEL's PM is responsible for maintaining a file of these changes, notifying the COTR of any potential contract impacts, and tracking any actions assigned by the COTR or the Program Analyst.
- f) The IOT&E Specialist, as the IOT&E Lead for iCMM, will advise the COTR of any noted inconsistencies between IOT&E's iCMM and the Contract Management Process. The COTR is responsible for consulting with the Government Contracting Officer, and SENTEL's PM in order to determine if a contract change is advisable or necessary to meet the IOT&E need.

8.2 *CONTRACTOR PERFORMANCE AND SERVICES ARE REVIEWED.*

- a) Semi-annually, IOT&E will convene a government-only meeting where one of the topics will be a review of SENTEL performance, products, and services. Prior to this meeting, SENTEL's PM and Deputy PM will provide a listing of any corrective action taken based on the last government-only meeting issues and a review of SENTEL work products produced during the last six months, in addition to their assessment of the Contract Management process. IOT&E will discuss SENTEL's inputs, and will determine questions and issues to be addressed by SENTEL. At the government-only meeting, the COTR is responsible for documenting issues discussed and questions raised, and later presenting them to SENTEL's PM. SENTEL's PM is responsible for making a formal presentation at the next available IOT&E Offsite, answering any new questions at that presentation and maintaining a folder of these issues and their corrective actions.
- b) After every IOT&E Report, the IOT&E PM is responsible for coordinating "Lessons Learned" from other members of IOT&E and the SENTEL team. The IOT&E PM will brief these "Lessons Learned", maintain a copy of the completed brief with any applicable notes, and ensure the brief is posted in the MIS BEST\_INFO. SENTEL's Task Lead will not only support the IOT&E PM in this action, but will also ensure that a separate "lessons learned" review is completed for items under the support team's control. The Contractor's PM is responsible for maintaining a support "lessons learned" folder, and creating guidance for task support teams based on these inputs. The COTR is responsible for directing appropriate changes to the process as necessary, based on these lessons learned.
- c) After the completion of a significant IOT&E product (normally plans, procedures, and assessments) the COTR will meet with the assigned IOT&E PM to review the adequacy of SENTEL support. The COTR will either personally discuss any issues with SENTEL's PM or facilitate a meeting between the IOT&E PM and SENTEL's PM, as appropriate. SENTEL's PM is responsible for maintaining minutes from these meetings and tracking any action items.
- d) Upon receipt of the MIS deliverables each month, the IOT&E PM will review and approve if the product is of high quality and meets the need of providing accurate and timely status of IOT&E and pertinent program activities. The IOT&E PM will submit an evaluation of timeliness and quality to the COTR and will maintain a file of any guidance given to the SENTEL team concerning these deliverables.
- e) Monthly, Contract Management Team meetings will review SENTEL services as a whole. The Team will also focus on a recent specific product or a specific support team for a detailed quality review. The Team will continually review the performance metrics to ensure that they provide adequate measurement of SENTEL performance.

8.3 *PERFORMANCE MEASUREMENTS ARE USED.*

- a) Monthly, each IOT&E PM will receive a SENTEL invoice for his or her assigned task. The IOT&E PM will review the invoice to determine that the task was properly and adequately supported. The IOT&E PM will contact the COTR and SENTEL's PM if any discrepancies or inconsistencies are noted. After signing and returning the task's cover sheet per IOT&E guidance, the IOT&E PM is responsible for maintaining a copy of each monthly invoice, with applicable notes to ensure the invoice accurately reflects task support.
- b) Monthly, each IOT&E PM will receive SENTEL's budget summary report for assigned tasks. The IOT&E PM will review the report to ensure that projected funding matches planned SENTEL support effort. The IOT&E PM is responsible for maintaining a copy of the task's monthly budget summary, with funding requests to the COTR noted, to ensure the task will be properly supported.
- c) Monthly, the COTR will receive SENTEL's Budget Summary Review for every task and an overall summary for the contract. The COTR will also receive a travel spreadsheet depicting monthly travel totals by task. The COTR and SENTEL's PM and Deputy PM will review projected SENTEL workload and travel expenditure trends versus available funding. SENTEL's Deputy PM is responsible for maintaining minutes of these meetings and tracking any action items.
- d) SENTEL performance reviews for IOT&E Reports, IOT&E Products, and MIS Deliverables as defined in paragraphs 2b) through 2d) above will be based upon comparisons to requirements in the IOT&E Operations Manual and the Contract, respectively. IOT&E PMs will discuss any issues with the COTR.

8.4 *COMMUNICATIONS ARE ESTABLISHED AND MAINTAINED.*

- a) Monthly, SENTEL Task Leads will create or update the necessary MIS products for their tasks. This activity will be controlled by the IOT&E PMs, and their approval of this review will be documented by each SENTEL Task Lead notifying SENTEL's PM via email by the 10<sup>th</sup> of each month. SENTEL's Deputy PM is responsible for maintaining a folder of these emails and formally notifying the COTR of the MIS products review and updates. In the notifying letter, SENTEL's Deputy PM will address any unique aspects of task coverage or MIS updates.
- b) After the completion of each IOT&E, or whenever project schedules shift, the COTR, the Back-up COTR, and SENTEL's PM and Deputy PM will review task priorities and SENTEL's support assignments. They will complete a four-step process (documented below) to ensure priority tasks are adequately supported and all involved personnel are kept properly informed. SENTEL's Deputy PM is responsible for maintaining meeting minutes and a folder of these assignments.
- c) SENTEL's PM or Deputy PM is invited to all IOT&E off-sites and daily telcons except those designated as government-only. Other SENTEL personnel are invited to support areas within their expertise. The DC Secretary is responsible for maintaining minutes of the daily telcons which contain a section documenting SENTEL participation, and assigned personnel are responsible for maintaining meeting minutes of the IOT&E off-sites which again have a section documenting SENTEL participation. Meeting minutes are circulated in draft form to ensure that SENTEL and IOT&E participants can make corrections such that the final minutes accurately portray their assigned topics.
- d) SENTEL's PM will assign support personnel to designated tasks in accordance with the four step process listed below:
  - As tasks are completed or schedules change, the SENTEL management team will determine when there is a need for reassignments. They will match support personnel career needs and desires to IOT&E support skill needs. Particular attention will be paid to coordinating with those SENTEL personnel who support more than one task.
  - The initial proposed plan will be reviewed with the COTR and altered based on his knowledge of task priorities and pending work assignments.

- The COTR will meet individually with the IOT&E PMs to review their needs and discuss proposed assignments. This proposed plan may be altered again based on new information from the IOT&E PMs.
  - The COTR will distribute the final prioritized assignments and upcoming events plan.
- e) SENTEL's PM will bring personnel into the IOT&E SENTEL team by conforming to the five step process listed below:
- SENTEL's PM will satisfy all contractual requirements for hiring support personnel in addition to any additional direction from the COTR, such as placing priority on a certain skill set or system knowledge.
  - Prior to check-in, a Lotus Notes mail will be sent to all IOT&E and SENTEL personnel announcing the new hire.
  - Prior to check-in, coordination will be done with IOT&E administrative personnel to ensure access and facility requirements will be satisfied.
  - After check-in, as part of SENTEL's new hire checklist, the person will be introduced personally throughout IOT&E. SENTEL's Deputy PM will be responsible for ensuring that absent IOT&E personnel meet the new hire as soon as practicable.
  - At the earliest IOT&E Offsite after hiring new support personnel, SENTEL's PM will brief IOT&E on skills, proposed assignments, and long term plans for the new hire.

8.5 *ACCEPTANCE OF DELIVERABLES...IS BASED ON CONTRACT TERMS.*

- a) Monthly MIS review memoranda contain a sentence which notes that the assigned IOT&E PM has approved the submitted information after considering both timeliness and quality.
- b) All final reports are signed by the assigned IOT&E PM.
- c) Any special equipment purchased through the Contract for direct support of IOT&E (Outsourcing) is controlled in accordance with the SENTEL Corporation Purchase Authorization Form Guidance using the attached form. The most current Guidance and the single page form are available on the IOT&E MIS under BEST\_INFO in their own folder.
- d) Monthly Contract Management Team meeting reviews event-driven IOT&E product acceptance and the monthly MIS update process with consideration for both timeliness and quality.

**SENTEL Systems Inc. Purchase Authorization Form Instructions**

The SENTEL Systems Inc. Purchase Authorization Form (page F-9) is to be used for all Office of IOT&E requested purchases of goods and services (PCs, LAN equipment, projectors, electronic devices, software, office supplies, conference room rentals, etc.) when these charges are to be charged to a specific Office of IOT&E task, including Task 10. The SENTEL Purchase Authorization Form will be used in the following manner:

1. When a product or service is requested to support the Office of IOT&E mission, the lead SENTEL support contractor (or staff) will obtain quotes from competitive vendors for the desired item(s). The quotes will be used to determine the preferred vendor and to coordinate the charges with the IOT&E PM (and/or the Office of IOT&E Technology Lead and/or the Office of IOT&E COTR). This coordination will occur primarily between the requesting Office of IOT&E representative and the assigned lead SENTEL support contractor. After the item specification and cost have been reconciled, the product description, assigned task, total cost, and accounting code will be entered on the authorization form in the appropriate spaces.
2. A SENTEL manager (Chris Gates or Joe Bello) is required to review and sign the form after the package is assembled and all pre-coordination is completed. This step is required to certify the completeness and accuracy of the authorization package before signatures are obtained from the IOT&E PM, Office of IOT&E Technology Lead, and/or the COTR. The SENTEL manager is always available for guidance and to determine the proper tasks to charge and signatures required to complete a requested purchase.
3. In cases where the item to be acquired will support a specific Task, the lead SENTEL support contractor (or staff) will obtain the assigned IOT&E PM's signature on the form to document the approval and certify the proper coordination of the charges. If the item or service is under \$500, the expenditure is approved at this point. For rentals of equipment and services to support IOT&E (which could be above \$500), the IOT&E PM will coordinate approval authority (normally through their Program Management Plan) for all planned meetings with the COTR.
4. If the product to be purchased is requested for LAN services and/or Office of IOT&E Support Tools (IIS, QT, T<sup>3</sup>S, PTS, etc.), even if the expenditure is assigned to a specific task, the signature of the Office of IOT&E Technology Lead (Darren Fields) must also be obtained. This will ensure the product is compatible with overall Office of IOT&E LAN and/or Database strategy. The Technology Lead's signature will also be required on the form in all cases where the product will be maintained and/or supported by LAN or Database personnel.
5. For all purchases exceeding \$500 (except for rentals as noted in #3 above), the COTR will be required to sign the form to approve the expenditure. The COTR's signature is also required for all purchases assigned to Task 10, where a generic benefit to all of Office of IOT&E has been determined as the primary justification. However, with the method of Cost Accounting presently in use by Office of IOT&E, most purchases should be assigned to a specific task.
6. Following the purchase of the requested item by an SENTEL representative, a courtesy copy of the signed authorization form and the official vendor's purchase order will be forwarded to the lead SENTEL support contractor as a final notification of the transaction. All signatories may receive a courtesy copy of the signed authorization form if they request it. The SENTEL LAN Administrative Staff will retain a hard copy of the **original** completed SENTEL Inc. Purchase Authorization Form in their files for 2 years.
7. In certain cases, where an IOT&E PM or the COTR will not be available for extended periods of time, SENTEL will be notified that authority will be given to an alternate to approve purchases. This will be the exception to the normal process which is designed to ensure purchase approval by the primary designated government personnel.
8. Products or services which do not meet the requirements of direct Office of IOT&E task support will be purchased in accordance with SENTEL directives on this topic.



## Purchase Authorization Form

Product or Service: \_\_\_\_\_ Task: \_\_\_\_\_  
(See Attached Quote)

Destination & Purpose: \_\_\_\_\_

Cost: \_\_\_\_\_ Accounting Code: \_\_\_\_\_  
Estimated/Actual (circle one)

SENTEL Deputy Director : \_\_\_\_\_ Date: \_\_\_\_\_

IOT&E PM Approval: \_\_\_\_\_ Date: \_\_\_\_\_  
(required if task related)

IOT&E Technology Lead Approval: \_\_\_\_\_ Date: \_\_\_\_\_  
(required if shared technical resource)

\*IOT&E COTR Approval: \_\_\_\_\_ Date: \_\_\_\_\_  
(required if cost exceeds \$500)

Order Date: \_\_\_\_\_

Receive Date: \_\_\_\_\_

* Bar Code: _____
Serial Number: _____

\* A copy of the signed Purchase Authorization Form and a copy of the invoice are to be provided to the IOT&E Property

Form

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**APPENDIX G**  
**PROCESS METRICS**

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The Office of IOT&E collects and analyzes data for metrics to determine the impacts/successes/needed improvements for our processes. The metrics collection is managed by the IOT&E Specialist, who provides reminders to metrics POCs that data is due based on the following table. Metric data is due to the IOT&E Specialist by the 10<sup>th</sup> of the month. The IOT&E metrics are updated based on the fiscal year, with collection either quarterly, bi-annually or annually. Revised metrics are provided to The Director for their review and posted on the IOT&E MIS.

**Office of IOT&E  
PROCESS METRICS  
As of 06/30/04**

<b>ID</b>	<b>METRIC DESCRIPTION</b>	<b>PURPOSE</b>	<b>DATA COLLECTION FREQ</b>	<b>POC</b>	<b>Target</b>	<b>Data</b>	<b>Affected PA(s)</b>
01	All Processes reviewed/updated in conjunction with Ops Manual update.	Ensure continuous improvement	Annual	ET	2x in 12 months	OM Revised 09/03, 12/02, 5/02, 12/01, 5/01, 7/00 100%	All
02	% of Monthly MIS Updates including BFOT and IOT&E Team travel completed by the 10 <sup>th</sup> of each month	1. Ensure Contract, Program, and Risk management activities completed 2. Ensure timeliness of monthly Contract Deliverable	Quarterly	CG	90%	Apr-June 2004: 93.5% Jan-Mar 2004: 97.8% Oct-Dec 2003: 95.7% Jul-Sept 2003: 95.3% Apr-Jun 2003: 100% Jan-March 2003: 95.8% Oct-Dec 2002: 98% Jul-Sept 2002: 100% Apr-June 2002: 90.7% Jan-Mar 2002: 98.3% Oct-Dec 2001: 89.6% July-Sept 2001: 93.0% Jan-June 2001: 98.5%	11, 12, 13
03	IOT&E related products and activities (strategy session, IOT&E Plan/Procedures, IOT&E Team formation) that are tracked by monthly MIS Reports are planned and completed as scheduled. NOTE: only dates highlighted in RED status in the reports shall be collected.	Ensure effective Requirements, Program, Risk and T&E management	Quarterly	JAD	90%	Apr-June 2004: 99.8% Jan-Mar 2004: 100% Oct-Dec 2003: 97.4% Jul – Sept 2003: 97.2% Apr-June 2003: 98.6% Jan-March 2003: 97.9% Oct-Dec 2002: 95.9% Jul-Sept 2002: 97.9% Apr-June 2002: 97.9% Jan-Mar 2002: 97.8% Oct-Dec 2001: 85.2% Jul-Sept 2001: 98.9%	02, 04, 08, 11, 13

ID	METRIC DESCRIPTION	PURPOSE	DATA COLLECTION FREQ	POC	Target	Data	Affected PA(s)
						Jan-June 2001: 100%	
04	% of invoices approved w/ in 10 days.	Track and control funding	Quarterly	CG	100%	Apr-June 2004: 100% Jan-Mar 2004: 100% Oct-Dec 2003: 100% Jul –Sept 2003: 100% Apr-June 2003: 100% Jan-March 2003: 100% Oct-Dec 2002: 100% Jul-Sept 2002: 100% Apr-June 2002:100% Jan-Mar 2002: 100% Oct-Dec 2001: 100% FY01/4 <sup>th</sup> Qt: 100% FY01/3 <sup>rd</sup> Qt: N/A	12
05	% of monthly MIS updates that were rated satisfactory for initial quality	Ensure deliverable is of sufficient quality for PM to utilize	Quarterly	JS/CG	100%	Apr-June 2004: 100% Jan-Mar 2004: 100% Oct-Dec 2003: 100% Jul – Sept 2003: 100% Apr-June 2003: 100% Jan-March 2003: 100% Oct-Dec 2002: 100% Jul-Sept 2002: 100% Apr-June 2002: 100% Jan-Mar 2002: 98%	12
06	The Designation memoranda are signed not later than August 30 <sup>th</sup> each year. Signature/completion of designation process indicates customer definition of Needs and initial Requirements.	Ensure effective management of Needs PA and customer agreement w/ Needs PA and Requirements PA	Annual	JD	Aug 30 <sup>th</sup>	Completed 9/9/03 Completed 8/21/02 Completed 8/23/01	01, 02
07	Customer Feedback to determine	Self-explanatory	Every 2 years	RM	Every 2	04/02 & 08/99	01, 02,08, 21

ID	METRIC DESCRIPTION	PURPOSE	DATA COLLECTION FREQ	POC	Target	Data	Affected PA(s)
	satisfaction w/ IOT&E service				years		
08	The number of significant issues identified subsequent to and within 6 months of completion of an ISD	Ensure that customers needs and requirements are met by IOT&E.	Annual	Special Assist	0	0: number of issues FY 2003, FY 2002 & FY 2001	01, 02, 08
09	The number of hours/courses spent in training.	Ensure IOT&E continually updates skills, knowledge	Annual	BJ	500 hrs/ 40 courses	512.5/101: FY 2003 1073/149: FY 2002 570.5/45: FY 2001	22
10	The ranking scores for each class taken. (Based on a possible score of 9(low) to 54(high)	Recommend best classes to other staffers. (avoid classes w. low scores);better use of training dollars.	Annual	JD	40	FY 2003: Average of 11 courses scored - 42 FY 2002: Average of 18 courses scored – 47.5 FY 2001: Step up to Leadership /48 LMR/48 LDP1/39 Risk Mang/38 LDLR/43	22
11	Every IOT&E program is audited every 2 years.	Ensure we are doing what we planned	Annual	ET	100%	80% (12/15 programs audited) in two years (FY 02/03) 70% (14/20 programs audited) in two years (FY01/02)** 100% (4audits) Jun-Sept 01 89% (8audits) Sept-May 01	15
12	# of non compliance reports w/ number corrected by 6-week follow-up ( <i>will be replaced by metric 12a starting with FY04 data collection</i> )	See if corrective actions are being accomplished				0% (3 open/0 fixed) Apr to Sept 2003 12% (17open/2 fixed) Oct 2002 –March 2003 42%( 12 open/5 fixed) Apr –Sept 2002 0% (8 open/0 fixed) Oct 2001-Mar 2002	15

ID	METRIC DESCRIPTION	PURPOSE	DATA COLLECTION FREQ	POC	Target	Data	Affected PA(s)
						71% (7opened/5fixed) Jun-Sept 2001 Audits 24% (38opened/9fixed) Jan-June 2001 Audits	
12a	For QA audits the % of discrepancies closed resolved (CR) v. closed unresolved(CU) @ the end of the audit	Ensure discrepancies are being resolved.	Annual	ET	75%	2002:CU=67%/CR=33% 2001:CU=87%/CR=13% 2000: CU=28%/CR=72%	
13	For Audited programs #/% of IOT&E Plans submitted for required peer reviews	Ensure peer reviews being conducted	Annual	ET	100%	100% (1 prod/1 sub) Apr – Sept 2003 100% (3prod/3sub) Oct 2002-March 2003 N/A Apr-Sept 2002 80% (5 prod/4 sub) Oct 2001-Mar 2002 96% (23 Prod/22Submit) Jun - Sept 2001 75% (32 prod/24 submitted) Jan- June 2001	08
14	For quality -audited programs #/% of reviewers that participate in peer reviews for IOT&E Plans and IOT&E Report Staff Briefing	Ensure there is sufficient participation (1/2 of applicable peers)	Annual	ET	100%	0% 1 program w/ 1 applicable doc. 2 reviewers short. 1 Brief with 1 short. Apr – Sept 2003 91% (3 program w/ 3 applicable docs)(1 prog. Was 1 reviewer short) N/A Apr-Sept 2002 1 program w/ 1 applicable document/0% average (no peer	08

ID	METRIC DESCRIPTION	PURPOSE	DATA COLLECTION FREQ	POC	Target	Data	Affected PA(s)
						review) Oct 2001-Mar 2002  4 programs w/5 applicable documents 50%average (2 reviewers) Jan-June 2001  4 programs w/2 applicable documents 100%average (3 reviewers) Jun-Sep 2001 Plans/peers only	
15	% of satisfied criteria for all required documents for all programs (filed in permanent file (DC/ACY) and on MIS) – Permanent File Audit	Ensure CM of final documents, both hard copy and soft copy.	2x year	BB/SK	95%	DC - 94.1% ACY- 92.6% Avg – 93.4% Oct – Mar 2004  DC – 91.1% ACY – 100% Average = 95.6% Apr – Sept 2003  DC – 69.7% ACY – 85.5% Jan –March 2003 New metric: first data will be 2 <sup>nd</sup> quarter FY03	16
16	% of satisfied criteria to reflect corrective action for required documents (filed in permanent file (DC/ACY) and on MIS) – Follow-up Permanent File Audit	Ensure corrective action taken as result of Permanent File Audit.	2x year	BB/SF	95%	Oct – Mar 2004: 100% Apr – Sept 2003:100% Jan-Mar 2003: 100% New metric: first data will be 2 <sup>nd</sup> quarter FY03	16
17	% of satisfied criteria for all required documents using a representative sample. – Program	Ensure entire CM Process applied to working drafts and final	2x year	BB/SF	95%	Oct – Mar 2004: 100% 93.3 % Apr – Sept 2003 78.3%	16

ID	METRIC DESCRIPTION	PURPOSE	DATA COLLECTION FREQ	POC	Target	Data	Affected PA(s)
	Audit	documents (soft copy).				Jan –March 2003 New metric: first data will be 1 <sup>st</sup> quarter FY03	
18	% of satisfied criteria to reflect corrective action for all required documents using the representative sample. <b>Follow-up Program Audit</b>	Ensure corrective action taken as result of Program Audit.	2x year	BB/SF	95%	Oct – Mar 2004: 100% (N/A) Apr – Sept 2003: 100% Jan –Mar 2003: 81.7% New metric: first data will be 1 <sup>st</sup> quarter FY03	16
19	Track the length of time to acquire personnel to meet needs.  <b>(Last data collection FY02: No longer necessary)</b>	Ensure adequacy/ timeliness of meeting need.			21 busines s days	Apr-Sept 2002: 22 days Oct 2001-Mar 2002: 19 days June-Sept 2001: 16 days Jan-June 2001: 21 days	05
20	Track the length of time to acquire new IOT&E Team members, for those who go through Office of IOT&E AT/AF POCs	Ensure continuous improvement in process of obtaining necessary members	2x year	RM	2 mths	Oct – Mar 2004 AF= 1 week AT= 12 weeks  Apr – Sept 2003 AF = 8 weeks AT = 12 weeks Oct 2002 – March 2003 AF: 4 weeks AT= 6 weeks Apr-Sept 2002: AF= 4 weeks AT = 11 weeks Oct 2001-Mar 2002: 7.5 weeks April 2001-Sept 2001: 20 weeks	05, 14

ID	METRIC DESCRIPTION	PURPOSE	DATA COLLECTION FREQ	POC	Target	Data	Affected PA(s)
21	Track # of respondents to OM Review	Ensure staff input to IOT&E processes	Annual	ET	94%	September 2003: Sentel = 85% ATQ= 100% December 2002: 94% May 2002: 80%	20, 21
22	IOT&E Team feedback is collected and reported on by each IOT&E program	Ensure IOT&E Team feed back to IOT&E process	Annual	ET	100%	FY03= 3/3 100% Apr-Sept 2002: 4/4 100%	21
23	Office of IOT&E Strategic Plan is updated monthly from Feb-Nov	Ensure SP process is kept current	2x year	ET	100%	Oct-Mar 2004: 50% Apr – Sept 2003: 100% Oct 2002 –Mar 2003: 100% Apr-Sept2002: 100%	00
24	Percent of Actions taken for the HR Team that are acted upon	Ensure that teams are acting upon staff issues/suggestions	Quarterly	CM	80%	Apr-June 2004: No Actions Jan– Mar 2004: No actions Oct-Dec 2003: No actions Jul – Sept 2003: 75% Apr - June 2003: 100% Jan –March 2003: 100% Oct-Dec 2002: 75% Jul-Sept 2002: 100% Apr-June 2002: 100%	14

PA00: Enterprise Management  
 PA01: Needs  
 PA02: Requirements  
 PA04: Alternatives Analysis  
 PA05: Outsourcing  
 PA08: Evaluation  
 PA11: Project Management  
 PA12: Supplier Agreement Management  
 PA13: Risk Management

PA14: Integrated Teaming  
 PA15: Quality Assurance  
 PA16: Configuration Management  
 PA18: Measurement  
 PA20: Process Definition  
 PA21: Process Improvement  
 PA22: Training

**APPENDIX H**

**PROCEDURES FOR USING  
THE IOT&E MIS**

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## **PROCEDURES FOR ACCESSING THE MIS**

### **1.0 INTRODUCTION**

The IOT&E Management Information system (MIS) serves as a resource for The Director to access current information about each of the programs designated for IOT&E. The MIS also serves as a library of publications and reference materials for use by IOT&E Program Managers.

### **2.0 ACCESS**

The files on the IOT&E MIS are on a file server, which is physically located in the IOT&E office at the FAA Technical Center in New Jersey. IOT&E and SENTEL personnel can access the MIS by logging on to the New Jersey LAN, Washington LAN or behind the FAA Firewall. Workstations logged into the IOT&E Network have a logical drive letter M: that is automatically mapped to the IOT&E MIS.

#### **2.1 TO ACCESS THE MIS FROM A LAN WORKSTATION, FOLLOW THESE STEPS.**

- 1.) Login to the IOT&E Novell network.
- 2.) Open the Windows Explorer file management tool and expand the tree under the My Computer icon. Here you should see all the drive letters available to you for accessing your local and network drives.
- 3.) Locate and expand the drive letter M: (Users in DC can also access the MIS by the M: Drive mapping). Now you should see folder names including: BEST\_INFO, SHARED and PROGRAMS, among others.
- 4.) Traverse the directory tree to find the file you want and then use the file by double-clicking on the file's icon to launch the associated application, e.g., Word, Excel, PowerPoint, or Access, which was used to create it.

#### **2.2 THE IOT&E MIS IS ALSO AVAILABLE THROUGH NETWARE AND FTP. THE ADDRESSES FOR THE TWO METHODS ARE SHOWN HERE:**

\\172.26.208.209 – (Requires Netware client, IOT&E LAN Username and Password)

[FTP://172.26.208.209/](ftp://172.26.208.209/) – (Requires IOT&E LAN Username and Password)

### 3.0 MAINTENANCE OF THE M:\BEST\_INFO AND \PROGRAMS FOLDERS

Maintenance of the folders within M:\Admin is the responsibility of the Program Analyst and the Director. Maintenance of the folders within M:\BEST\_INFO is the responsibility of the respective Folder Owners. Maintenance of folders within M:\Programs is the responsibility of the respective IOT&E Program Managers. Maintenance of the folders follows six general models:

- Some folders are updated monthly. The primary examples are the Status subfolders within each of the Program folders.
- Some folders are updated quarterly by reference to the CM Index. This applies to the majority of the folders on the BEST\_INFO folder since they correspond to, and contain templates and examples of, work products which are subject to CM.
- Some folders are reviewed and updated, as necessary, semiannually subsequent to the revision of the Operations Manual since they are subject to changes in the Office of IOT&E and/or IOT&E processes. All Reference Documents, Templates, and Guidance Documents are also reviewed and updated, as necessary, during this cycle regardless of the review cycle of folder in which they are stored.
- Some folders are updated in accordance with the processes upon which they depend; e.g., the M:\BEST\_INFO\Designation folder is updated annually in concert with IOT&E's Designation Process.
- Some folders are reviewed and updated, as applicable for a given IOT&E program, following the release of the IOT&E Report, IOT&E Follow-up Report or determination that there will be no Follow-up, whichever applies.
- Some folders are updated as new or additional information becomes available or as new products are developed. With the exception of the Status Folders, this is the primary model applied to the Programs and the Administrative Folders.

The assignments of Folders to Owners, and identification of the maintenance models which apply to the respective folders are maintained on the MIS at M:\BEST\_INFO\Mapfile####.xls. The assignments of IOT&E Program Managers to programs can be found at M:\BEST\_INFO\####LD\_BU.doc. (#### are the 2-digit year and 2-digit month in which the files were last modified.)

The content of the M:\BEST\_INFO folders is reviewed semiannually by the IOT&E Specialist to ensure their currency.

## 4.0 FILE NAMING CONVENTIONS FOR THE MIS

Due to upgrades in the IOT&E network infrastructure and changes in the I.T. Industry we are now able to expand folder and file names. Our purpose for implementing these guidelines are as follows...

- To keep the size of folder and file names to a manageable length yet providing sufficient detail to explain the contents.
- To eliminate characters in the names which might cause problems for the implementation of the automated tools & FTP using the MIS
- Manual versioning of files

## 4.1 INFORMAL FILE NAMING GUIDELINES

The following Naming guidelines are suggested for folder & file names where the target document does not have a CM identifier:

- Folder and file names must be less than 255 characters, however concise names are recommended. Uppercase letters in names should be used to maintain consistency.
- DO NOT USE spaces or periods in folders or file names; but instead use underscores, hiphens or ampersands (&)
- The file name should contain an imbedded date 2 digits for the year, 2 digits for the month, 2 digits for the day.
- Versioning within a single day can be accomplished using lower-case letters at the end of the imbedded date.

For example a file named STRATEGY\_BRIEF\_981105.PPT appears in the folder PROGRAMS\DSR\BRIEFINGS\STRATEGY\ATS\_ARA\_MGMT, you know that it is a DSR strategy briefing, related to the IOT&E event, given to the ATS & ARA Management Teams in November 5th 1998

Another example would is DSR\_ATS&ARA\_STRATEGY\_BRIEF\_981105.PPT  
Using the longer file names, this PPT file can be distributed with the recipient

knowing exactly what the file pertains to.

If you have difficulty determining an appropriate name for a file, or if the conventions do not seem to work for your file, please call Robert Richelson for assistance.

## **4.2 FORMAL FILE NAMING DIRECTIVE**

For all formal IOT&E products (Program Management Plans, IOT&E Plans, Procedures, Reports, etc.) where a Configuration Management identifier is required, this code will also be used as the file name. This method will facilitate far more efficient recognition of documents even when those documents are not residing in the program directory associated with that IOT&E program. This is because the program, document type, version number, and draft/final information are encoded in the CM identifier. IOT&E and support personnel will benefit from this more efficient method of file identification when supporting multiple programs and Configuration Management and Quality Assurance Audits will be far more productive and less time consuming. It is not necessary to imbed a date or additional characters in these file names, since the CM identifier is unique to that program, document type and revision.

Example: ATQ-FS2-PM01-05-F.DOC

## 5.0 CHANGING YOUR LAN PASSWORD:

**To change your LAN password, follow these steps.**

Users are prompted to change their password during the normal network logon process. If you do not change your password when prompted to do so, you will have 5 additional grace logins (chances) to change your password before being locked out of the network. These instructions assume you still have one grace login remaining. If you are out of grace logins then change your password when prompted to do so and call your local help desk if there are any problems.

When prompted by the network login routine to change your password, say 'NO' to the "Change Password Now Dialog" box, then continue logging in. Once completely logged into the network, follow the instructions below to change and synchronize your network password on a Windows 2000 or XP workstation.

- 1.) Depress CTRL-ALT-DELETE (will open Netware security, Novell client for windows)
- 2.) Select Change Password (bottom left button)
- 3.) At this point the "Change Password" box is open. All connected resources (Servers & Local Workstation) are highlighted
- 4.) On the right-hand side you will be required to enter your CURRENT password labeled "Old Password".
- 5.) The next line "New Password" requires you to enter the new password.
- 6.) The next line "Confirm new password" requires you to retype the new password.
- 7.) When the above information is entered select "OK."

All of your passwords for multiple servers and the local workstation are synced. If you are not familiar with changing your network password and would like assistance, please contact the LAN Administrator.

It is very important that you synchronize all your network passwords; failure to do so may prevent access to the MIS, the IOT&E website, the FTP site, etc. If you given the opportunity to synchronize your password with any Netware servers you are connected to, please respond "YES" in the appropriate way.

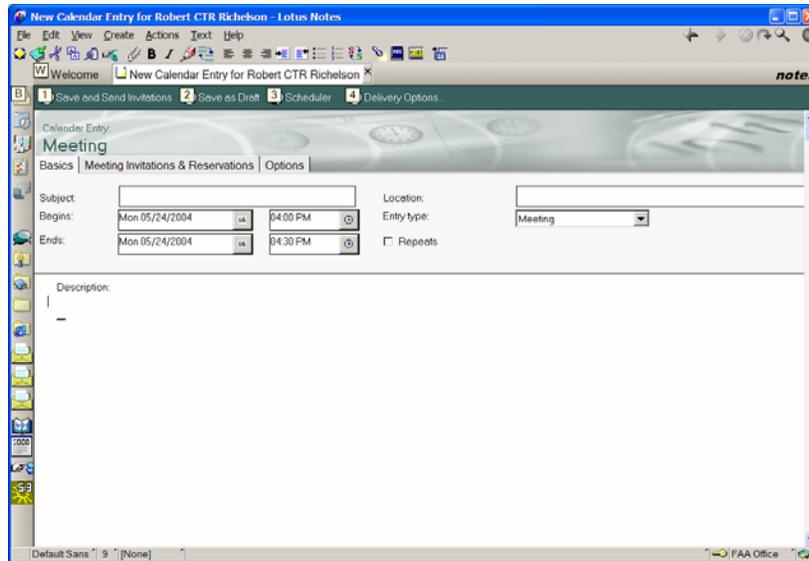
There are other methods to change your network password, such as using the Microsoft Domain security. Please contact the IOT&E LAN Support for assistance for ACY computers. For IOT&E DC, contact Executive LAN, and for SENTEL DC contact the SENTEL DC LAN administrator.

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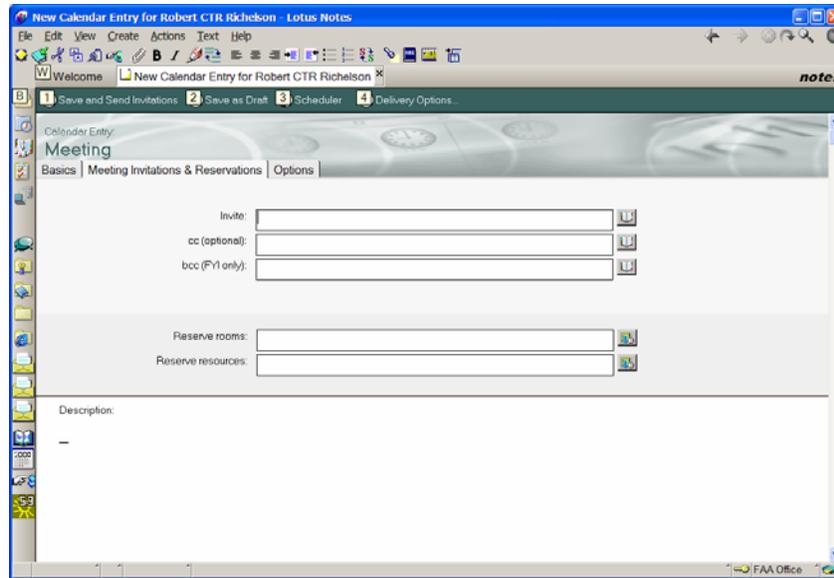
**APPENDIX I  
OFFICE OF IOT&E DATA ENTRY  
PROCEDURES  
FOR LOTUS NOTES CALENDAR**

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- Using the “**Special Item Type Codes**”, enter a subject for the meeting in the *Subject* field, then press the **Tab** key to move to the next field (ex. CM-TV-DC (10/22-10/24))
- Enter a start date for the meeting using the keyboard, or click the icon to the right of the *Start* field to display a calendar to select the start date from, once the start date is entered/selected, press the **Tab** key.
- Specify a start time, end date and end time using the same methods as outlined for specifying a start date.
- Enter the location of the meeting in the *Location* field and press the **Tab** key.
- Enter a description for the meeting.
- Click the **Meeting Invitations & Reservations** tab located near the top of the window, and the window below is displayed.



- Type “9-ACT-ATQSTAFF”.
- Click the *Save and Close* icon located above the window tabs.
- This will send your activity/event the group calendar.
- The group calendar administrators will accept your invitation and your activity/event will appear on the group calendar.

If additional details are needed please reference the Lotus Notes Calendar Handbook on the MIS. The location is:

“M:\LAN\_ADMIN\DOCUMENTATION\WORKSTATION\_DOCS\WORKSTATION\_GUIDEBOOK\  
24\_LOTUS\_NOTES\_CALENDAR.doc”

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**APPENDIX J**  
**ACRONYMS AND DEFINITIONS**

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**ACRONYMS**

ACY	Atlantic City International Airport
AF	Airway Facilities
AMS	Acquisition Management System
AP	Action Plan
APB	Acquisition Program Baseline
AR	Acquisition Review
ASAG	AMS System Advisory Group
ASP	Acquisition Strategy Paper
AT	Air Traffic
ATCS	Air Traffic Control Specialist
ATO	Air Traffic Organization
AVR	Associate Administrator for Regulation and Certification
BFOT	Backfill Overtime
CIP	Capital Investment Plan
CM	Configuration Management
COI	Critical Operational Issue
COO	Chief Operating Officer
COTR	Contracting Officer's Technical Representative
COTS	Commercial Off-the-Shelf
DB	Designation Board
DoD	Department of Defense
DOT IG	Department of Transportation Inspector General
DR&A	Data Reduction and Analysis
DT	Development Testing
DWG	Designation Working Group
FAA	Federal Aviation Administration
FAST	FAA Acquisition System Toolset
F&E	Facilities and Equipment
FSS	Flight Service Station
FTP	File Transfer Protocol
FTE	Full-time Equivalent
FY	Fiscal Year
GAO	Government Accounting Office
H,M,L	High, Medium, Low
HW/SW	Hardware/Software
iCMM	integrated Capability Maturity Model
ID	Investment Decision
IIS	IOT&E Information System
IOC	Initial Operating Capability
IOT&E	Independent Operational Test and Evaluation
IOT&E EOA	Independent Operational Test and Evaluation Early Operational Assessment
IOTRD	Independent Operational Test and Evaluation Readiness Declaration

IPP	Integrated Program Plan
IRAT	IOT&E Reliability Analysis Tool
IRD	Initial Requirements Document
ISD	In-Service Decision
ISR	In-Service Review
JMTP	Joint Master Test Plan
JRC	Joint Resources Council
MIS	Management Information System
MNS	Mission Needs Statement
MOE	Measure of Effectiveness
MOS	Measure of Suitability
MWE	Model Work Environment
NAATS	National Association of Air Traffic Specialists
NAS	National Airspace System
NAS/NOM	NAS Area Specialists/NAS Operations Managers
NATCA	National Air Traffic Controllers Association
NDI	Non-Development Item
OCC	Operational Control Center
OCD	Operational Capabilities Demonstration
OCT	Operational Capabilities Test
ORD	Operational Readiness Declaration
OT	Operational Testing
PA	Program Analyst
PASS	Professional Airways Systems Specialists
PM	Program Manager
PMP	Program Management Plan
PTR	Program Trouble Report
POC	Point of Contact
QA	Quality Assurance
RCM	Requirements Correlation Matrix
RD	Requirements Document
RMA	Reliability, Maintainability, and Availability
RMM	Remote Maintenance Monitoring
SATCS	Supervisory Air Traffic Control Specialist
SIR	Screening Information Request
SUPCOM	Supervisory Committee
SMO	Systems Management Office
T <sup>3</sup> S	Test Team Travel System
TDY	Tour of Duty (travel)
T&E	Test and Evaluation
TI	Technical Instruction
TWG	Test Working Group

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VFC            Virtual Filing Cabinet

WJHTC        William J. Hughes Technical Center

## DEFINITIONS

IOT&E Data Collection Form	Documentation of an observation, potential discrepancy or problem with the system obtained through monitoring of System Test, Field Familiarization, or IOT&E Conduct. All IOT&E Data Collection Forms will be distributed to the IOT&E Team for review and approval.
Commissioning	Commissioning is the formal placement of a facility in operational use or service. It is the formal exercise of incorporating a new facility, system, subsystem, or equipment in to the NAS. The term commissioning has legal and budgetary significance, and is used to justify logistic and manpower operational support as a FAA obligation under Public law. A facility, system, or equipment is commissioned when it has been formally accepted and placed into operational use or service in the NAS, and its controlling AF System Management Office has assumed formal maintenance responsibility (a commissioning occurs when notice has been issued to the users.) (FAA Order 6030.45A) No commissioning can take place until the ISD.
Issue	A consensus based IOT&E Team description of a system discrepancy or problem.
Observation	Any system event witnessed by the IOT&E Team (e.g., reconfigurations, certification, maintenance). IOT&E Team members are encouraged to write down any and all events that occur when monitoring or interacting with the system.
Operational Effectiveness	The degree to which a product accomplishes its mission when used by representative personnel in the expected operational environment.
Operational Suitability	The degree to which a product intended for field use satisfies its availability, compatibility, transportability, reliability, maintainability, safety, human factors, logistics supportability, documentation, personnel, and training requirements.
Significant Issues	Issues that <u>would be</u> expected to be considered as part of the ISD or be included in the Executive Summary; or issues that <u>have been</u> considered as part of the ISD or were included in the Executive Summary; or issues that <u>would have been</u> considered as part of the ISD or would have been included in the Executive Summary if known at that time.