



FAA-STD-059

**DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

**STANDARD PRACTICE**

**NAS TERMINAL FACILITY MASTER PLAN  
GUIDELINES FOR EXISTING TERMINAL  
FACILITIES**

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## FOREWORD

This FAA standard is approved for use by all organizations of the Federal Aviation Administration.

The National Airspace System (NAS) is a public asset managed by the Federal Aviation Administration (FAA) whose charter is to promote its' safe, expeditious and efficient use. As the usage of this asset increases, continuous maintenance and upgrade of the NAS infrastructure is required to ensure that present and future operations remain safe, orderly, and expeditious.

The FAA has embarked on an ambitious program of modernizing the NAS while concurrently maintaining daily services. This means that the maintenance/modernization of the NAS must be "transparent" to the user and that daily services will continue uninterrupted while the system is being improved.

The NAS Terminal Facility Master Plan Guidelines for Existing Terminal Facilities has been prepared to provide generic high-level guidance to those individuals and organizations tasked to plan and implement the transition of equipment into existing terminal facilities. This standard does not apply to new terminal facilities, and those terminal facilities being constructed to completely replace existing facilities. In addition, this standard does not alter, adjust, or change any of the authority or responsibilities assigned to STARS or any NAS product team. A model Terminal Facility Master Plan Outline, a Terminal Facility Master Plan Development Process Summary, and a Table of Documents (with Internet addresses and links wherever possible) are in the Appendix section and offer the user a standard roadmap from which to create a site-specific Terminal Facility Master Plan (TFMP).

In summary, this standard should be used as a primary reference in the preparation of Terminal Facility Master Plans for existing terminal facilities.

## EXECUTIVE SUMMARY

The Administrator has delegated responsibility to the NAS Terminal Business Service (ATB) to establish and upgrade all NAS facilities to meet NAS service delivery requirements. The Terminal Facilities Division (ATB-300) is the principal element of ATB responsible for providing national guidance and policy for the design, facility master planning, and is the focal point for program integration information and issues associated with all terminal facilities.

The overall objective of the NAS Terminal Facility Master Plan Guidelines for Existing Terminal Facilities is to stimulate a safe and efficient terminal transition process under centralized direction. The NAS Terminal Facility Master Plan Guidelines for Existing Terminal Facilities is a high-level document that standardizes the terminal transition management process for existing terminal facilities throughout the NAS. This document does not alter, adjust, or change any of the authority or responsibilities assigned to STARS or any NAS product team.

The NAS Terminal Facility Master Plan Guidelines for Existing Terminal Facilities consists of five chapters plus an appendix section. Chapter I is the introduction and administrative component of the guidelines. Chapter II defines the transition concept and includes the basic assumptions of the terminal transition process. Chapter III identifies the organizations involved in the terminal transition process and clarifies their roles and responsibilities. Chapter IV delineates the programs and processes that should be understood and applied during the terminal transition management process. It includes the Facility Information and Analysis Tool (FIAT), an automated transition tool developed to provide a standardized national approach to capture facility information, automate the analysis of system requirements, and present transition analysis results. Chapter V highlights the source documents to be used and/or fashioned in support of terminal transition. Appendix A contains an outline of a model Terminal Facility Master Plan. Appendix B is a sample flow chart of the Terminal Facility Master Plan Development Process Summary. Appendix C is a Table of Documents, with web site connections wherever possible, to be used in researching, understanding, and implementing the terminal transition process. Appendix D contains a list of definitions and Appendix E, a list of acronyms.

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## **CHAPTER I**

### **1.0 INTRODUCTION**

#### **1.1 PURPOSE**

The purpose of the NAS Terminal Facility Master Plan Guidelines for Existing Terminal Facilities is to provide direction and understanding of the various processes and requirements that must be understood and taken into account when creating transition plans for existing terminal facilities within the National Airspace System (NAS).

#### **1.2 CANCELLATION**

This plan will remain in effect until superseded or cancelled by appropriate authority.

#### **1.3 BACKGROUND**

The Federal Aviation Administration (FAA) has embarked on a national and massive effort to modernize and upgrade the nation's air traffic control system. Programs such as the Standard Terminal Automation Replacement System (STARS), the augmentations for the Global Positioning System (GPS) which includes the Wide Area Augmentation System (WAAS) and the Local Area Augmentation System (LAAS) programs, the Enhanced Terminal Voice Switch (ETVS), the Integrated Terminal Weather System (ITWS), the Center TRACON Automation System (CTAS), the Airport Surveillance Radar Model 11 (ASR-11), and the Next Generation Air/Ground Communications System (NEXCOM) Terminal Data Link Services (TDLS) are significant cornerstones of this modernization effort. A list of the planned terminal Capital Investment Plan (CIP) projects are included in the Aviation System Capital Investment Plan document identified in Appendix C.

The magnitude and scope of the FAA's modernization program necessitates the development and implementation of a sound and all-inclusive transition management process for existing terminal facilities. A vital part of the overall terminal transition and integration process is the creation of site-specific terminal facility master plans.

#### **1.4 DEFINITIONS**

A list of definitions and acronyms, helpful to understanding these guidelines, are contained in Appendices D and E respectfully.

#### **1.5 PLAN MAINTENANCE**

The maintenance and updating of these guidelines are the responsibility of Terminal Facilities Sector, ATB-300 and the NAS Implementation Program Directorate, ANI.

## **1.6 CHANGES**

Recommended changes to this guideline and appendices may be forwarded to the Terminal Facilities Sector, ATB-300 and the Terminal Platform, ANI-40 for review and consideration. This standard shall be maintained under formal configuration management control and all changes shall be proposed in a casefile/NCP and processed in accordance with FAA Order 1800.66, Configuration Management Policy.

## **1.7 OBJECTIVES**

The objectives of these guidelines are:

- a. To define transition.
- b. To delineate the transition management concept and process.
- c. To define and delineate the organizational roles and responsibilities for transition.
- d. Highlight the transition management process and the six main functions that must be addressed within any transition plan.
  1. Standard Management Process
  2. Analysis and Assessment
  3. Human Resources
  4. Transition Strategy
  5. Transition Execution
  6. Transition Automation
- e. To provide information on the various transition documents
- f. To provide an automated standard tool, the Facility Information and Analysis Tool (FIAT) tailored to site-specific transition planning.
- g. To provide a Terminal Planning Process Flow Chart/Diagram that may be tailored for site-specific planning.

## **1.8 SCOPE**

Any activity causing change, physical or functional, to existing NAS terminal facilities is within the scope of this Terminal Facility Master Plan Guideline.

## CHAPTER II

### 2.0 TRANSITION

#### 2.1 GENERAL

Transition, for existing terminal facilities, is the stage-by-stage evolution of terminal facilities from their present physical and functional configuration to a designated target-year system configuration. This chapter provides an overview of transition as it applies to existing terminal facilities.

#### 2.2 APPLICATION

This standard applies to the transition planning efforts of existing NAS terminal facilities. This standard does not apply to new terminal facilities nor to those terminal facilities being constructed to completely replace existing facilities.

#### 2.3 TRANSITION CONCEPT

The Capital Investment Plan (CIP) is the single-most document that codifies the long-range goals and configuration of the National Airspace System. As a living document, it is updated on a yearly basis and, through interpretation, broadly paints a target-year configuration concept for all NAS facilities.

In addition to the CIP, there are several inputs that affect the terminal transition process. They include the understanding of terminal facilities, interfaces and functionalities; a target-year configuration and overall operational concept; and the system analysis (planning, coordination, integration and requirements). From these inputs, transitional planning forms the base from which future issues, opportunities and requirements can be identified and assimilated.

In the NAS, terminal facilities are comprised of Terminal Radar Approach Controls (TRACON), and Airport Traffic Control Towers (ATCT). And while a target-year configuration is desired for each existing terminal facility, the transition process can no longer be thought of as linear with the next phase starting after completion of the previous phase. In reality, the National Airspace System is ever changing, and with each system change comes a change in evaluation. Therefore, the transition process requires a site-specific transition master plan for each existing terminal facility and the continuous involvement of management, engineering, budget, human resources, and field organizations in the creation and maintenance of each transition document.

In summary, the terminal transition process is a dynamic and interactive process in which requirements are identified, plans are developed, and the execution is closely coordinated by management, engineering, budget, and human resources at both the headquarters and field levels.

## 2.4 RESPONSIBILITY

Transition management cannot be successfully planned and executed without the full understanding and cooperation from all concerned. This includes contributions from terminal transition team members within FAA headquarters (program management, engineers, human resources, budgeters, and logisticians, etc.) as well as those same disciplines from Regional and site offices.

## 2.5 OVERSIGHT

Within the FAA the Terminal Business Service, ATB has overall responsibility for the transition and integration of terminal facilities within the NAS. Under ATB guidance, the Terminal Facilities Sector, ATB-300, provides national guidelines and policy for the design, transition, and integration planning, and is the focal point for program integration information and issues associated with all terminal facilities. ATB-310, the Terminal Applied Engineering Program office has the task of developing and creating site-specific Terminal Facility Master Plans for existing terminal facilities. ATB-310 has teamed with ANI in the creation of a prototype tool, the Facility Information and Analysis Tool (FIAT), which defines the informational content and format for a nationally standardized product. The ATB-310/ANI team will oversee the development of transition strategies, conduct Government Transition Evaluations (GTE), identify interim transition requirements, develop optimum transition sequences, and craft site-specific Terminal Facility Master Plans for existing terminal facilities.

## 2.6 PLANNING

Terminal transition planning is necessary to enable successful implementation and integration of future systems/subsystems into the terminal area system. Terminal transition planning also provides guidance necessary to ensure implementation and integration of CIP projects in an orderly, safe, and cost-effective manner. The key to terminal transition planning is the overall understanding of the CIP and the related procurement and installation timetables as they pertain to the overall NAS transition plan.

## 2.7 ASSUMPTIONS

The following assumptions have been made in order to clarify some of the limitations, which may impact the terminal transition planning process.

1. Transition analysis and planning, facility modernization/expansion and individual facility site preparation will be conducted so as not to adversely impact terminal operations.
2. There will be periods of dual operation of functionally equivalent systems and equipment until such a decision is made to remove the older replaced equipment.
3. The scheduled delivery of systems, sub-systems or equipment are prone to slippage which may adversely impact the terminal transition planning at one or more locations.
4. When crafting a terminal transition plan, the physical design of some systems or subsystems may not be firm.

5. TRACON consolidations may necessitate a revised transition analysis and planning effort.

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## CHAPTER III

### 3.0 ORGANIZATIONAL ROLES AND RESPONSIBILITIES FOR TRANSITION

#### 3.1 GENERAL

This chapter defines the significant roles and responsibilities of FAA Headquarters, regional and field offices in terminal facility master planning of existing facilities.

#### 3.2 HEADQUARTERS TRANSITION ROLES

The roles and responsibilities of headquarters organizations having primary terminal facility master planning are described in the following subparagraphs.

##### 3.2.1 NAS Terminal Business Service, (ATB)

ATB manages the establishment and upgrade of NAS terminal facilities to meet NAS service delivery requirements. The scope of this responsibility involves agency partnerships to identify requirements and provide transition policies, plans, guidance, technical, management resources and tools to accomplish diverse capital investment plan program objectives.

##### 3.2.1.1 Terminal Transition and Implementation, (ATB-30)

ATB-30 is accountable for the execution of terminal implementation program via ATB-100, ATB sectors, and other headquarters stakeholders.

##### 3.2.1.2 Regional Terminal Business Managers, ATB-101/109

ATB-101/109 serve as the advocate for ATB programs to the region.

##### 3.2.1.3 Terminal Facilities, (ATB-300)

ATB-300 is the principal element of ATB for maintaining the integrity of the terminal facilities and by assuring that future systems can be successfully integrated without jeopardizing the operational NAS environment. The division provides national guidelines and policy for the design, transition, and integration planning, and is the focal point for program integration information and issues associated with all terminal facilities.

##### 3.2.1.3.1 The Technical Staff, (ATB-310)

ATB-310 manages and coordinates the Terminal Applied Engineering Program (TAEP). This program, utilizing the GTE process, leads the collaborative effort to evaluate the terminal facilities readiness to accept new equipment, coordinate multiple evaluations/surveys, and to develop, update, and distribute site-specific Terminal Facility Master Plans. Through an interagency partnership, ATB-310 monitors the progress of supporting organizations in meeting the TAEP schedule and provides funding to support program requirements

### **3.2.2 The NAS Implementation Program Directorate, (ANI)**

ANI is a national field organization comprised of an Engineering Center located in Rosslyn, VA, and nine Regional Implementation Centers (ICs). ANI effectively supports implementing and integrating facilities, systems and equipment into the operational environment for a safe and efficient National Airspace System (NAS).

#### **3.2.2.1 Terminal Platform Division, (ANI-40)**

ANI-40, in partnership with ATB-310, develops standards for terminal facility transition planning products and supports the establishment of national priorities for planning activities. In addition, ANI-40 initiates the development of Terminal Facility Master Plans and coordinates the planning activities and review and approval process with both local and Regional offices as well as FAA headquarters. ANI-40 provides a single point of contact for implementation strategies and resource commitments between agency organizations.

#### **3.2.3 Air Traffic Planning and Procedures, (ATP)**

ATP manages NAS resources that are largely transparent to the aviation user. In their role as NAS custodian ATP protects, validates, and plans for the efficient use of finite resources in a dynamic environment. Their services are focused toward the procedural and facility planning disciplines. ATP's responsibilities involve agency partnerships to validate regional needs, and to provide policies, plans, and guidance to accomplish diverse capital investment plan program objectives in support of the NAS.

#### **3.2.4 Operational Support Directorate, (AOS)**

For all existing NAS systems, AOS Divisions test, authorize, and issue system hardware, software, and documentation changes and enhancements. In addition, AOS specialists assist field technicians. Program offices routinely arrange for AOS deployment assistance through the establishment of program directives, specifying work expectations and funding.

### **3.3 REGIONAL AND FIELD TRANSITION ROLES**

The roles and responsibilities of region and field organizations regarding terminal transition planning are described in the following subparagraphs.

#### **3.3.1 Implementation Centers, (ANI-X00)**

The nine Implementation Centers (IC) that comprise the field portion of ANI are responsible for all ANI functions within each of their ICs. The ICs are geographically located at the FAA regional boundaries, but are an integral part of ANI as a National Field Organization. They provide critical field operational perspectives and maintain close working relationships with regional operations organizations in carrying out the NAS implementation mission with full attention to NAS operational requirements. The Implementation Centers have overall authority and responsibility for maintaining their respective Terminal Facility Master Plans (TFMPs).

### **3.3.1.1 Planning and Integration, (ANI-X20)**

The Integration and Support Team supports the IC in transition and integration planning and leads in cross-platform project integration efforts. In addition to managing the IC budget and reimbursable program, ANI-X20 manages the CAEG and drafting efforts within their domain.

### **3.3.1.2 Infrastructure Platform, (ANI-X30)**

The Infrastructure Platform interfaces with ANI-30 on all aspects of Infrastructure projects. As required, ANI-X30 provides engineering services and accomplishes facilities and equipment construction and installation at the regional level.

### **3.3.1.3 Terminal Platform, (ANI-X40)**

The Terminal Platforms interface with ANI-40 to resolve issues across Implementation Centers on aspects related to Terminal Projects. The ANI-x40s are responsible for the establishment, improvements, and sustained support of ATCT and TRACON facilities and the electronic systems housed within them. In addition, the terminal platform provides engineering services for both facilities and equipment involved in Terminal projects to include acting as the regional technical on-site representative (TOR) for nationally sponsored Terminal projects.

### **3.3.1.4 Regional Airway Facilities Division, (AXX-400)**

The Regional Airway Facilities Division provides regional AF program management and support. They serve as the focal point for facility evaluations and audits performed by other FAA and external offices. In addition, the division assists in identifying facility requirements and serves as the office of primary interest (OPI) for coordinating, tracking, and analyzing, all regional terminal NAS change proposal (NCP) case files. A division member serves as the executive secretary and member of the regional Configuration Control Board (CCB).

### **3.3.1.5 Regional Air Traffic Division, (AXX-500)**

The Regional Air Traffic Division provides regional management of civil and military air traffic within the airspace and flight areas of facilities located within the region. Within the division, the Requirements Branch provides support relating to NAS plan implementation, telecommunications services, and the development of plans to establish, improve, relocate and discontinue air traffic facilities. This includes the preparation of information and operational requirements as needed for terminal transition. In addition, the division processes NCPs in accordance with national directives. This includes approval/denial authority for the development, testing, and implementation of NCPs that are local in scope.

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## **CHAPTER IV**

### **4.0 TRANSITION MANAGEMENT PROCESS**

#### **4.1 GENERAL**

Transition consists of several processes. These processes can be categorized into management processes, used to monitor and control transition; analysis and assessment processes, which provide the analyses, assessments, and technical expertise for transition; human resource management processes, that determine and plan the human resource requirements and staffing for transition; transition finance processes, that coordinate the use of funds in transition or the transition execution processes. This chapter will explain how these processes are managed to accomplish a safe, efficient, and continuous transition of terminal facilities.

#### **4.2 SECTION 1. STANDARD MANAGEMENT PROCESSES**

##### **4.2.1 TRANSITION PLANNING**

The transition planning process assimilates the recommendations of management, engineering, human resources, finance, and the field; aggregates the project implementation and facility readiness data; and develops an integrated plan of action and executable sequence of activities and events. The goal of transition planning is to control the evolution of NAS terminal facilities from their present physical and functional state to the target-year system configuration. Terminal transition is being planned at least 10 years in advance with details being added continuously until the target-year is reached. Terminal transition planning is accomplished on the national, regional and field facility levels. The success of facility transition planning in the FAA is based on the flow of information to and from the field. The results of transition planning for an existing terminal facility are documented in a Terminal Facility Master Plan (TFMP). A model TFMP outline, which identifies the type of information typically included in a TFMP, is provided as Appendix A. A flow chart, highlighting the typical sequence of events in developing a TFMP, is provided as Appendix B. And Appendix C contains a list of source documents that may be used in researching, understanding and implementing the terminal transition process.

##### **4.2.2 TRANSITION ISSUES**

Issues identified during terminal transition planning should be documented in the Terminal Facility Master Plan. When a transition problem cannot be resolved at or below the organizational level at which it is first identified, it must be elevated to the appropriate level until finally resolved.

##### **4.2.3 CONFIGURATION MANAGEMENT (CM) PROCESS**

FAA Order 1800.66, Configuration Management Policy, establishes the structure for CM policy and guidance and is the foundation of the CM program. Configuration Management applies to all systems, subsystems, and components of the NAS including documentation describing the NAS. Every terminal element (hardware, software, firmware, test equipment, facilities, power

and documentation), existing or scheduled is subject to CM. The CM discipline includes baseline management, configuration identification (documentation), change control, auditing, and status accounting. During transition, the CM process provides for baseline establishment (i.e., requirements, functional, allocation and design baselines, etc.) and change control over the baselines. Change management is provided by various organizations utilizing a Configuration Control Board (CCB) structure. Change management activities are performed under the guidance and direction of FAA Order 1800.66.

The following terminal facility types shall be placed under configuration management:

- a. Airport Traffic Control Tower (ATCT) with TRACON
- b. ATCT ATC Grade Level 8 and above
- c. All TRACON Facilities

The Terminal Facility Master Plan will not be under CM. However, the as-built drawings and critical power, that are included as part of the Terminal Facility Master Plan, will be under CM.

#### **4.2.4 NAS INTEGRATED LOGISTICS SYSTEM (NAILS) PROCESS:**

The NAILS process identifies supportability requirements of the system, determines training requirements, and develops logistics and training inputs to the procurement process. NAILS is the process of managing and integrating logistics elements to provide the logistics resources necessary to support a subsystem of the NAS throughout its life cycle. The objective of NAILS is to achieve the most cost-effective life-cycle cost for logistics support. Since the NAILS process is applicable to all CIP projects, terminal transition planners must liaise with NAILS management to ensure complete coverage.

### **4.3 SECTION 2. ANALYSIS AND ASSESSMENT**

#### **4.3.1 ANALYSIS AND ASSESSMENT STRATEGY**

The purpose of analysis and assessment is to maximize the efficiency and effectiveness of terminal transition planning. The primary tools used when conducting analysis and assessments at existing terminal facilities are the Design Data Handbook and the Government Transition Evaluation (GTE). Designed to be used together, their source location may be found in Appendix C.

#### **4.3.2 ANALYSIS AND ASSESSMENT PROCESS**

There are three levels of analysis and assessment performed: project impact, facility readiness, and global impact.

##### **4.3.2.1 PROJECT IMPACT**

Project impact analysis and assessment determines the impact that a specific project will have on an existing facility and system. The analysis and assessment addresses the interdependencies of

projects, physical and functional requirements, deployment parameters, verification activities, and logistical support requirements. The results of individual project impact analysis and assessment are the product integration plans (PIP) and site installation plans (SIP). The aggregate affects of future projects for a given facility are assessed in terminal transition plans.

#### **4.3.2.2 FACILITY READINESS**

Facility readiness analysis and assessment determines the readiness and ability to accommodate all projects deployed to that facility. The major factors are power, space, heating ventilation and air conditioning (HVAC), and the continuity of operations.

#### **4.3.2.3 GLOBAL IMPACT**

Global impact analysis and assessment determines the impacts that individual projects and facilities have on the NAS as a whole. When required it addresses issues, resolutions, feasibility of solutions of scale, and coordination among involved parties.

#### **4.3.3 KEY-SITE IMPLEMENTATION PROCESS**

Due to the complexity of the transition process at existing terminal facilities, the first site (key-site) receiving a CIP system is usually supported by a mixed team of FAA project, regional, support center personnel, support contractors and temporary duty personnel from subsequent sites in the deployment sequence. Accordingly, many lessons can be learned from the transition of the key-site, which, if properly interpreted and documented, could be of value when developing or updating TFMPs.

### **4.4 SECTION 3. HUMAN RESOURCES**

#### **4.4.1 HUMAN RESOURCE TRANSITION STRATEGY**

Terminal transition planning should include an assessment of the impact of anticipated project implementation activities at a given facility on AF and AT human resources. This will include identification of training requirements, and changes in manpower and skills requirements so that appropriate actions can be taken to mitigate the potential for human resources shortages.

### **4.5 SECTION 4. TRANSITION FINANCE**

#### **4.5.1 TRANSITION FINANCE STRATEGY**

Transition financing of existing facilities is accomplished with funds budgeted and distributed by nationally and locally initiated projects. Transition finance, however, is unique and different from all other aspects of transition management in that all activities must conform to the specified budget instead of the transition plan that encompasses all the required activities. The purpose of transition finance is to reconcile the actual cost of transition activities and the approved budget.

## **4.5.2 FINANCIAL ANALYSIS AND ASSESSMENT PROCESS**

Transition finance analyzes the established transition plan and assesses the costs associated with each transition activity. A cost must be estimated for every aspect of transition: implementation, integration, modernization, relocation, establishment, commissioning, decommissioning, logistics and staffing, training, and human relations. These costs must be cross-referenced with the actual budget line items. Transition finance also entails monitoring transition expenditures in reference to the budget. The analyses and assessments result in the identification of excesses and/or shortfalls between actual costs incurred and the budgeted cost for the required activities.

## **4.6 SECTION 5. TRANSITION EXECUTION**

### **4.6.1 EXECUTION MANAGEMENT STRATEGY**

The culmination of all other transition efforts is the successful and timely execution of the planned activities for each selected terminal facility. Therefore, execution management is the monitoring and controlling of transition plan implementation.

### **4.6.2 EXECUTION SEQUENCE**

Transition master plans should develop a chronology of activities or steps that include activity interdependencies and activity duration. The execution sequence provides a continuous execution status and identifies the critical path of the execution sequence void of calendar dates.

### **4.6.3 DEPLOYMENT SCHEDULES**

Deployment schedules are those schedules provided by project and program managers, engineering, human resources, logistics and finance that define the execution sequence. Since these schedules are subject to change, they must be obtained and maintained current and separate from the transition plan to facilitate the analysis and assessment of the execution sequence.

## **4.7 SECTION 6. TRANSITION AUTOMATED TOOLS**

### **4.7.1 TRANSITION AUTOMATION**

Transition planning data, including facility configuration data, is valuable to a broad range of users. Accordingly, this data is stored in a database format that is accessible via the FAA Intranet. The use of data structures to store facility configuration information, system specifications, and planning information allows users the flexibility to retrieve all data for a single facility or to compare the same data for multiple facilities. These data structures also allow sharing of centralized data such as system specifications and generic narratives.

Appropriate reporting and menu web pages provide read-only access to the data, while maintenance web pages allow controlled access to maintain the Terminal Facility Master Plan database. To the extent possible, links to external data sources such as photo libraries, CAEG

drawings and other FAA documents are also utilized to avoid duplication of data. In addition, the capability exists to create static, portable versions of transition plan reports.

#### **4.7.2 TRANSITION TOOL (FIAT)**

The Facility Information and Analysis Tool (FIAT) is an electronic automation tool developed specifically as the national standard for TFMP production for existing terminal facilities. The FIAT tool will provide the capability to both view and maintain facility information and transition analysis data in a user-friendly electronic format via the FAA Intranet. In addition, the tool will allow comparisons of existing infrastructure capacity with projected infrastructure demands based on future program requirements. The system uses an Oracle database, Cold Fusion web servers, and links to existing data sources. The benefits of using the FIAT system are:

- a. Improved Data Availability and Speed
- b. Improved Accessibility (Web/Internet)
- c. Reduced Site Survey Costs
- d. Consistent data in a Common Format
- e. Improved Planning Efficiencies
- f. Facilitates a Full, Coordinated Transition Analysis
- g. Allows Simple Data Updates/Re-Publication
- h. Able to Query Across Facilities/ICs
- i. Track Issues and Action Items

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## CHAPTER V

### 5.0 TERMINAL TRANSITION DOCUMENTS

#### 5.1 GENERAL

This chapter describes the major terminal transition documents and computer systems, which support the transition planning process of existing terminal facilities. Each of the documents, and/or systems, and their interrelationships are briefly described. The documents have been organized into top level, second level and third level document structure with lower level plans in compliance with higher-level guidance. A Table of Documents, highlighting some of these documents and systems and their web location, may be found in Appendix C.

#### 5.2 TOP LEVEL, FAA TRANSITION DOCUMENTS

Terminal transition requirements and their design for transition are derived from the FAA Strategic Plan, the Capital Investment Plan (CIP), the NAS Architecture; the FAA plan for Research, Engineering, and Development (R, E&D Plan), the NAS Plan Hand-off Justification Papers Plan; the National Plan of Integrated Airport Systems (NPIAS), and the Aviation Capacity Enhancement Plan (ACEP). All of these planning efforts influence, to some degree, the requirements for transition planning of existing terminal facilities.

##### 5.2.1 FAA STRATEGIC PLAN

The FAA Strategic Plan reflects Secretarial planning and policy guidance, as outlined in the Department of Transportation (DOT) Strategic Plan, and is the umbrella that ensures all FAA plans are executed in a coordinated manner. It provides strategic direction and sets long-term goals with outcome measures.

##### 5.2.2 CAPITAL INVESTMENT PLAN (CIP)

The Capital Investment Plan provides the framework for capital investment in the FAA. In order to maintain or enhance current safety and efficiency levels in the face of growing demand, the FAA uses an investment-planning framework based upon mission analysis and planned capabilities outlined in the NAS Architecture. The CIP reflects this planning effort. The CIP is distributed widely and serves primarily as a source document for basic information on capital investment projects comprising the FAA's Facility and Equipment (F&E) program.

##### 5.2.3 NAS ARCHITECTURE

The NAS Architecture is a comprehensive plan for modernizing the NAS well into the 21<sup>st</sup> century. It outlines capabilities and proposed timelines needed to meet goals identified in the FAA Strategic Plan. CIP programs are implemented to obtain capabilities outlined in the NAS Architecture.

#### **5.2.4 RESEARCH, ENGINEERING, AND DEVELOPMENT PLAN (R, E&D)**

The R,E&D plan also supports FAA strategic goals. Among the various FAA plans, the relationship between the CIP and the R,E&D plan is unique. The R,E&D plan and the CIP jointly take a project from initial concept exploration through deployment. Through these interrelated capital plans, the FAA will institute projects to achieve operational benefits for the entire aviation community.

#### **5.2.5 NAS PLAN HAND-OFF JUSTIFICATION PAPERS**

The NAS Plan Hand-off Justification Papers plan links F&E programs to Operations (OPS) programs and to the operational environment. It identifies resource changes required to transition to, and operate in, the operational environment as a result of implementing CIP programs.

#### **5.2.6 NATIONAL PLAN OF INTEGRATED AIRPORT SYSTEMS (NPIAS)**

The NPIAS defines resource requirements needed to establish and expand the national system of airports. The plan draws selectively from local and state airport development plans. The NPIAS precipitates requirements for F&E projects in the CIP.

#### **5.2.7 AVIATION CAPACITY ENHANCEMENT PLAN (ACEP)**

The ACEP plays a key role in the FAA's effort to increase airport capacity without compromising the safety of passengers or the environment. The plan identifies the cause and extent of capacity and delay problems currently associated with the U.S. air traffic system; projects the effects of increased air traffic on airport capacity over the next decade; and outlines CIP and other projects intended to reduce capacity-related problems. Thus, TFMP and ACEP planning efforts are closely related.

### **5.3 SECOND LEVEL, FAA TRANSITION DOCUMENTS**

These transition related documents provide to the terminal transition planner much of the data and information necessary to craft a comprehensive and time sensitive, site specific terminal transition plan. These documents are produced within the departments/divisions of the FAA but are used universally as specific resource data documents.

#### **5.3.1 GOVERNMENT TRANSITION EVALUATION (GTE)**

The GTE is a comprehensive Facility Evaluation document which, when completed in its entirety, captures the technical and non-technical data required when developing site-specific plans and programs. From this data project scope and budget estimates can be generated in support of facility or system upgrades/improvements or the integration of new systems.

### **5.3.2 DESIGN DATA HANDBOOK**

The Design Data Handbook was created to support the Terminal Applied Engineering Program. It provides guidance on conducting the GTE process and gathering the various facilities' site-preparation requirements. More specifically, the handbook is used to gather technical data in order to facilitate the generation of budgetary estimates for the various facilities projects.

### **5.3.3 PRODUCT INTEGRATION PLAN (PIP)**

Formerly known as the Program Implementation Plan, the PIP provides the most comprehensive, accurate and current integration information for each CIP product/program. It identifies the activities, schedules, technical direction, and funding to integrate each product/program. The PIP is used to define how the product is integrated in the field and to communicate integration requirements to the designated sites. The PIP is organized in accordance with FAA-STD-036C, and contains the Generic Site Implementation Plan (GSIP) as an Appendix once it is developed.

### **5.3.4 PRODUCT SMART SHEET**

The Product Smart Sheet provides valuable and up-to-date data and information on CIP products/programs. Each In-Service Review Team is responsible for developing and maintaining Product Smart Sheets. Product Smart Sheets are updated at least monthly and contain summary information on a product's integration status, points of contact, significant milestones, current and significant events, funding profile, program dependencies and interfaces, and status of PIP distribution.

## **5.4 THIRD LEVEL, FAA TRANSITION DOCUMENTS**

Third level transition related documents are usually prepared and maintained by region and field organizations in support of their management efforts. Much of the information and data gleaned from top-level documents is used to build these documents. To remain useful, region and field level documents must be considered "living" documents and updated and corrected when program changes occur.

## **5.5 TERMINAL FACILITY MASTER PLAN (TFMP)**

The Terminal Facility Master Plan (TFMP) for an existing terminal facility is developed using the Facility Information and Analysis Tool (FIAT). The system uses an Oracle database, Cold Fusion web servers, and links to several data sources. See Chapter 4.6.2, Transition Tools.

## APPENDIX A

### TERMINAL FACILITY MASTER PLAN OUTLINE FOR EXISTING TERMINAL FACILITIES

**Home/Cover Page** (with appropriate hypertext links)

**Executive Summary**

- Assumptions
- Issues
- Links to Schedule, Analysis Summary Sections

**1. Introduction**

- Objective / Scope
- Methodology
- Data Sources
- Plan Organization

**2. Airport Information**

- Runways / Nav aids
- Projected Operations
- Airport Layout Diagram

**3. Facility Information**

- General Facility Information (Address, Level, Managers, Cost Center, Life Cycle Management, etc.)
- Space Configuration
- Power Systems (Transformer, Engine Generator, UPS, Grounding)
- HVAC / Environmental Systems
- Interfacility Connections
- Frequency Information

**4. Project Information**

- Table / Matrix of Projects by Area (Links to Below)
  - \* Title (JON)
  - \* General Information
  - \* Site Specific Information
    - ❖ Space
    - ❖ Power
    - ❖ HVAC
    - ❖ Operational Impact
  - \* Issues / Impacts
  - \* Links to Associated Drawings
  - \* Project Schedule
  - \* Operations / Training
  - \* List of Data Sources (List should include Product Baseline)
  - \* Interfaces
  - \* System Specifications

**5. Transition Analysis**

- Waterfall Schedule
- Assumptions

- Space Summary
- Power Summary
- HVAC Summary
- 6. AT/AF Operations**
- Organizational Information (AT & AF) - Links to Tables of Position Info
- Staffing Information
- AT Hub Diagram
- Operational Impacts (AT & AF)
- 7. Issues - Links to related Transition Analysis and Project Information Section**

**Appendix A – Acronym List**

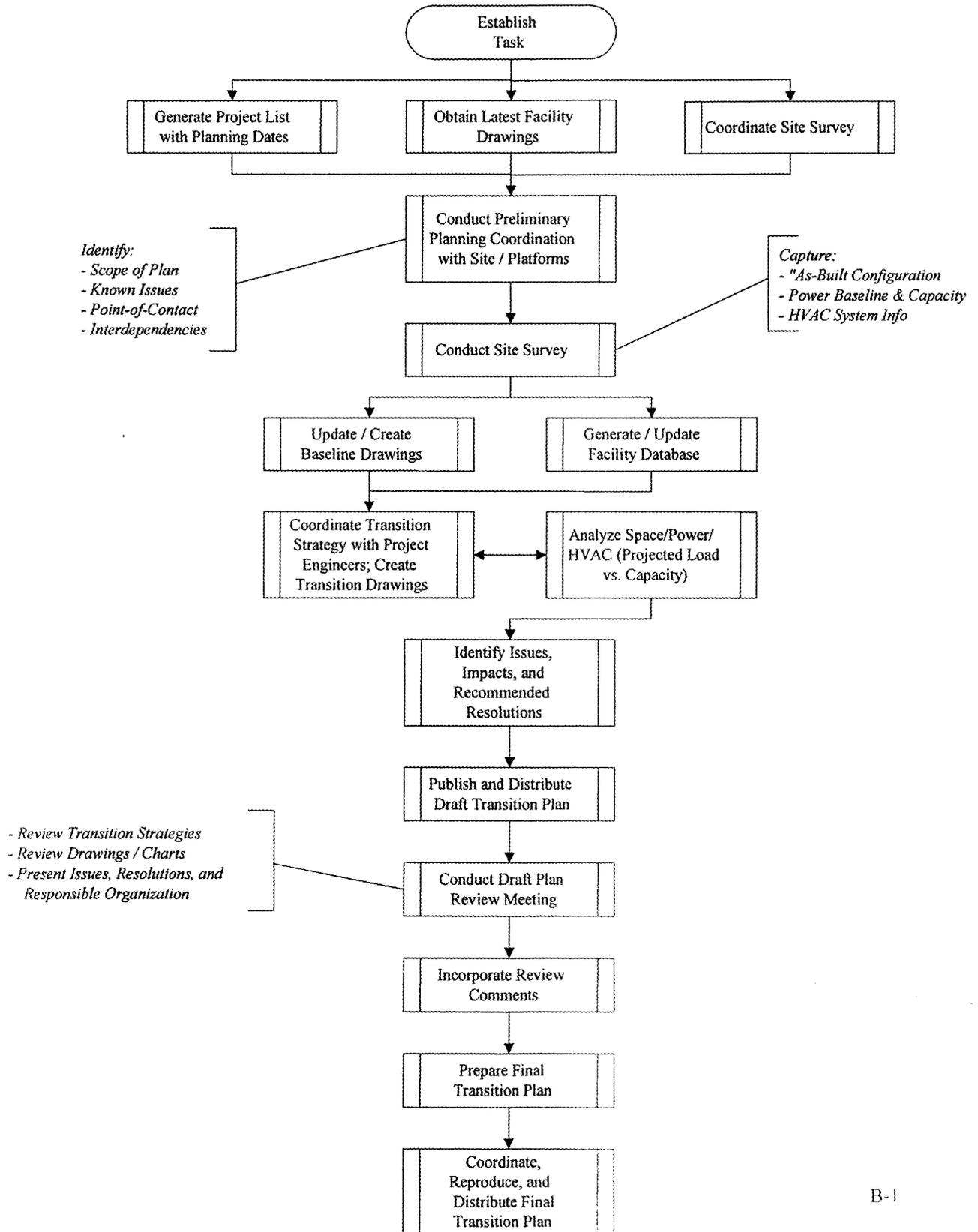
**Appendix B -- Panel Schedules**

**Appendix C – Photo Library**

**Appendix D – Baseline Drawings**

**Appendix E – Transition Drawings**

## APPENDIX B TERMINAL FACILITY MASTER PLAN DEVELOPMENT PROCESS SUMMARY



## APPENDIX C

### TABLE OF DOCUMENTS

The Table of Documents is a list of source documents to be used in researching, understanding and implementing the Terminal Facility Master Planning process. For those documents on the Internet, an Internet address has been provided. If this Guideline is being read from a computer with Internet access, the document desired may be viewed by simply clicking on the Internet address that has been linked.

(NOTE: The National Airspace System Documentation Homepage (NASDOCS) is an electronic documentation imaging system that allows the FAA user community and civilian aviation community access to ASD documents stored in electronic format. A goal of NASDOCS is to enable quick and efficient on-line access to electronic document images via the Internet and/or the FAA LAN. The NASDOCS Internet home page is available).

Go to: <http://nasdocs.faa.gov>

**ATB-310 Terminal Applied Engineering Program (TAEP) Homepage:** Provides a central location source of, and repository for, TAEP related directives, standards, procedures, and schedules along with completed GTEs and Terminal Facility Master Plans.

Go to: <http://ans.faa.gov/ans200/index.cfm> Then click on ATB-310.

**TERMINAL FACILITY MASTER PLAN (A Draft "STRAWMAN"):** An example of the national standard master plan to be generated using the Facility Information and Analysis Tool (FIAT).

Go to: <http://WWW.atlanta.ani.faa.gov/transition/>

**DESIGN DATA HANDBOOK:** Provides guidance on conducting the Government Transition Evaluation (GTE) process and gathering the various facilities' site-preparation requirements.

Go to: <http://ans.faa.gov/ans200/index.cfm> Click on ATB-310, then Design Data Handbook.

**GOVERNMENT TRANSITION EVALUATION (GTE):** The GTE is a comprehensive Facility Evaluation Form or "Checklist" that, when completed in its entirety, captures the technical and non-technical data required when developing site-specific plans or programs. The GTE is used in conjunction with the Design Data Handbook.

Go to: <http://ans.faa.gov/ans200/index.cfm> Click on ATB-310, then GTE Checklist.

**AVIATION SYSTEM CAPITAL INVESTMENT PLAN (CIP):** The CIP is a five-year plan that describes and provides the status of all FAA facilities and equipment (F&E) programs currently in progress and identifies approved near-term capital investments.

Go to: <http://nasdocs.faa.gov> Click on What's New, then on Capital Investment Plan.

**PRODUCT INTEGRATION PLAN (PIP)**: Formerly known as the Program Implementation Plan, the PIP provides the most accurate and current and integration information available for each CIP product/program. It identifies the activities, schedules, technical direction, and funding to integrate each product/program. The PIP is used to define how the product is integrated in the field and to communicate integration requirements to the designated sites. The PIP is organized in accordance with FAA-STD-036C, and contains the Generic Site Implementation Plan (GSIP) as an Appendix once it is developed.

Go to: <http://aop.faa.gov/1000/> Then click on PIP.

**PRODUCT SMART SHEET**: Developed and maintained by each ISRT, Product Smart Sheets are updated at least monthly and contain summary information about the product, key Product Team personnel, product schedule and key milestones, and the status of PIP distribution.

Go to: <http://aop.faa.gov/1000/> Then click on Smart Sheet.

**PRODUCT STATUS TRACKING**: Provides information and data on the status of products. (Note: the web site is presently undergoing a major overhaul and may not be available).

Go to: <http://aop.faa.gov/1000/>

**SPECIAL STATUS REPORTS**: An ATB report (Interim reports on Products/Projects of a more recent nature than the PIP). Supplements the PIP.

Go to: <http://aop.faa.gov/1000/>

**NATIONAL OPERATIONS DIVISION (AOP-100)**: The AOP-100 mission is to manage and enhance NAS services from a national perspective. The AFTechNet Web site is an excellent database and source for determining existing Facility Service and Equipment Profiles (FSEP).

Go to: <http://aftechnet.faa.gov/ms.htm> Click on Applications, then click on Facility Service and Equipment Profiles.

The following FAA documents should be adhered to when determining technical and critical requirements at NAS terminal facilities.

- |                           |  |
|---------------------------|--|
| <b>FAA Order 1100.127</b> | Airways Facilities Regional Office and System Management Office Organizational Structure and Functions<br>Go to: <a href="http://isddc.dot.gov/OLPFiles/FAA/005845.pdf">http://isddc.dot.gov/OLPFiles/FAA/005845.pdf</a>                   |
| <b>FAA Order 1800.66</b>  | Configuration Management Policy<br>Go to: <a href="http://www.faa.gov/cm/1800/PDF/1800pdf.htm">http://www.faa.gov/cm/1800/PDF/1800pdf.htm</a>  |
| <b>FAA Order 1810.4</b>   | NAS Test and Evaluation Policy   |
| <b>FAA Order 6030.20E</b> | Electrical Power Policy<br>Go to: <a href="http://nips.faa.gov/Scripts/Directory.asp?Path=/ANS-600/Orders-Specifications/">http://nips.faa.gov/Scripts/Directory.asp?Path=/ANS-600/Orders-Specifications/</a> Then click on Order 6030.20E |

- FAA Order 6032.1**            Modifications to Ground Facilities, Systems and Equipment in the National Airspace System  
Go to: [http://interweb.faa.gov/ats/af\\_directives/ChkList.cfm](http://interweb.faa.gov/ats/af_directives/ChkList.cfm)
- FAA Order 6950.2**            Electrical Power Policy Implementation at National Airspace System Facilities  
Go to: [http://interweb.faa.gov/ats/af\\_directives/6/69/6950\\_2D.html](http://interweb.faa.gov/ats/af_directives/6/69/6950_2D.html)
- FAA Order 6950.17**          Maintenance of Electrical Systems in Buildings  
Go to: [http://interweb.faa.gov/ats/af\\_directives/ChkList.cfm](http://interweb.faa.gov/ats/af_directives/ChkList.cfm)
- FAA Order 6950.19**          Practices and Procedures for Lightning Protection Grounding, Bonding and Shielding Implementation  
Go to: [http://interweb.faa.gov/ats/af\\_directives/ChkList.cfm](http://interweb.faa.gov/ats/af_directives/ChkList.cfm)
- FAA Order 6950.25**          Power Conditioning Devices at FAA Facilities  
Go to: [http://interweb.faa.gov/ats/af\\_directives/6/69/6950\\_25.html](http://interweb.faa.gov/ats/af_directives/6/69/6950_25.html)
- FAA Order 6950.27**          Short Circuit Analysis and Protective Device Coordination Study  
Go to: <http://isddc.dot.gov/OLPFiles/FAA/005500.pdf>
- NAS-MD-001**                NAS Master Configuration Index  
Go to: <http://www.faa.gov/cm/dcc.htm>

## APPENDIX D

### LIST OF DEFINITIONS

1. BASELINE. The approved documentation defines the configuration of a Configuration Item (CI) or an entire facility.
2. CONFIGURATION MANAGEMENT. The well-defined discipline whose primary functions are: configuration identification, change control, status accounting and verification/audit.
3. FACILITY. Any specific site within the NAS. A TRACON is a facility.
4. IMPLEMENTATION. The introduction of a new or enhanced capability into the NAS.
5. INSTALLATION. The physical positioning of equipment including attachments, software, and electrical/electronic connections required for proper operation.
6. INTEGRATION. A facility's assimilation of a new or enhanced capability.
7. INTERIM REQUIREMENT. A temporary requirement or configuration that is invalidated upon achievement of the target configuration.
8. ROLE. The relationship of an individual or organization with those in the same or a related environment.
9. RESPONSIBILITY. The accountability for an activity, product, or result.
10. SUBSYSTEM. The hardware/software component of a system, procured as a unit and installed at a facility.
11. SUPPORT CENTERS. Facilities within the NAS that functionally support various NAS facilities but do not provide an operational service.
12. TARGET-YEAR. Any year with a baseline configuration that is the target or end point of transition.
13. TERMINAL TRANSITION. The stage by stage evolution of a terminal facility from its present physical and functional configuration to a designated target-year or end-year configuration.
14. TRANSITION MANAGEMENT. The matrix of FAA organizations that implements NAS transition.
15. TRANSITION REQUIREMENT. A requirement associated with the literal transitioning of facilities and equipment.

**APPENDIX E****ACRONYMS**

ACD	ARTS Color Display
ACEP	Aviation Capacity Enhancement Plan
ACF	Area Control Facility
AF	Airway Facilities
ALP	Airport Layout Plan
AMS	Acquisition Management System
ANI	NAS Implementation Program
ARTCC	Air Route Traffic Control Center
ARTS	Automated Radar Tracking System
ASR	Air Surveillance Radar
AT	Air Traffic
ATB	Terminal Business Service
ATC	Air Traffic Control
ATCT	Air Traffic Control Tower
B/Ls	Baselines
BMI	Basic Measuring Instruments
CAEG	Computer Aided Engineering Graphics
CCB	Configuration Control Board
CIP	Capital Investment Plan
CM	Configuration Management
CTAS	Center TRACON Automation System
DCC	Document Control Center
DOCCON	Documentation and Configuration Identification System
DOD	Department of Defense
EDMS	Engineering Document Management System
E&D	Engineering & Development
ETVS	Enhanced Terminal Voice Switch
F&E	Facilities & Equipment
FAA	Federal Aviation Administration
FCA	Functional Configuration Audit
FIAT	Facility Information and Analysis Tool
FTP	Facility Transition Plan
GPS	Global Positioning System
GSIP	Generic Site Information Plan
GTE	Government Transition Evaluations
HVAC	Heating, Ventilation, and Air Conditioning
ICSS	Integrated Communications Switching System
IOC	Initial Operational Capability
IPP	Integrated Program Plan
ISRT	In-Service Review Team
ITWS	Integrated Terminal Weather System
JAI	Joint Acceptance Inspection

JON	Job Order Number
LAAS	Local Area Augmentation System
LAN	Local Area Network
LCC	Life Cycle Cost IPDS Integrated Product Development System
LTRACON	Large Terminal Radar Approach Control
NAIS	National Airspace Integrated Logistics Support
NAS	National Airspace System
NCP	NAS Change Proposal
NISC	National Airspace System Implementation Support Contract
NPIAS	National Plan of Integrated Airport Systems
NWP	National Work Plan
OL	Operating Location
OPI	Office of Primary Interest
OPR	Office of Primary Responsibility
OPS	Operations
OSHA	Occupational Safety and Health Administration
PCA	Physical Configuration Audit
PD	Program Directive
PDF	Portable Document Format
PIP	Program Integration Plan
POC	Point of Contact
PSF CCB	Power Systems and Facility CCB
PSL	Product Support Library
RAPM	Regional Associate Program Manager
RCAS	Radio Coverage Analysis System
RD	Requirements Document
RDVS	Rapid Deployment Voice Switch
RO	Regional Office
RTP	Resource Tracking Program
SETA	System Engineering and Technical Assistance
SIP	Site Installation Plan
SMO	System Management Office
SSC	System Support Center
STARS	Standard Terminal Automation Replacement System
TAEP	Terminal Applied Engineering Program
TDLS	Terminal Data Link Service
TFMP	Terminal Facility Master Plan
TOR	Technical on-site Representative
TRACON	Terminal Radar Approach Control
WAAS	Wide Area Augmentation System