31 MISSION SUPPORT

Mission support services assist the agency in delivering primary services and meeting strategic and performance goals cited in the *FAA Strategic Plan.*

For this discussion, mission support services are grouped into three categories: strategic support functions, tactical support functions, and business operations. Strategic support functions support the agency over the long term, whereas tactical support functions are involved with day-to-day agency operations.

Three major assumptions have been made for purposes of this discussion. First, specific hardware, software, or other items needed by a support function (e.g., Logistics Center spare parts) to implement a particular program will be identified, approved, and funded as part of that program through the investment analysis process. Second, all FAA personnel costs to perform the functions identified in this section have been captured in Section 12 and Sections 14 through 27. Third, the final disposition of a support system used in NAS modernization (e.g., one used for testing or training) will be decided during the investment analysis process.

31.1 Strategic Support Functions

Strategic support functions are performed by one or more FAA organizations to support air traffic management or regulation and certification services over the long term.

NAS Integrated Performance Management

The Air Traffic Services (ATS) NAS integrated performance management function develops customer-oriented outcome-based system performance measures and monitors system performance. It also recommends strategies for performance improvement. Performance measures represent operational outcomes desired by NAS users. The outcomes reflect overall performance across all air traffic management services.

Performance measures are developed in conjunction with the user community. Systems initially supporting this function include the Air Traffic Operational Management System (ATOMS), National Airspace Information Monitoring System (NAIMS), the Consolidated Operations and Delay Analysis System (CODAS), and the National Airspace System Performance Analysis System (NASPAS).

Airspace Management

The FAA has custodial management responsibility for airspace. The existing airspace structure was designed around the concept that airspace can be partitioned into volumes that air traffic controllers could monitor and use to maintain separation of aircraft. Increased traffic and changing customer needs have required changes in operations and air traffic management and have highlighted the need for airspace management to evolve and focus on a national perspective. The strategic airspace management function identifies the requirements and plans for airspace changes and also supports their implementation. A key system supporting this function is the airspace analytical tool system (AATS). The system analyzes NAS airspace safety, efficiency, capacity, design, and billing (i.e., user fees). It also assesses environmental issues associated with airspace changes.

Aeronautical Information Service

The Aeronautical Information Service collects, validates, and disseminates aeronautical information. The service provides an up-to-date repository of information about NAS elements (e.g., airports/runways, Navaids, fixes, remote communication outlets, and towers). The aeronautical information is used for publishing charts and documents and as electronic NAS configuration data for airspace analysis, flight service, weather, and other electronic systems. The future architecture of the Aeronautical Information Service is designed for source data entry and online access to current information. The Operational Data Management System (ODMS) is replacing the current closed system architecture.

Air Traffic Operations and Procedures

The FAA needs the capability to monitor and manage its air traffic operations on a continuing basis. It also needs to plan for meeting the demand of current and future forecasted air traffic services. The strategic operations and procedures function supports these activities. This function develops and maintains the FAA's NAS Concept

of Operations document used to guide NAS architecture development; assists with requirements validation and with implementing new systems into the NAS; and develops and publishes new air traffic procedures required to support NAS modernization.

NAS Transition, Integration, and Implementation

This function supports the capability to implement and integrate new systems and facilities into the NAS. Types of activities include site selection analysis, site preparation and construction, equipment installation and testing, facility transition plans, system inservice reviews, and other activities. It develops guidelines and policies for transition planning of NAS programs and identifies and coordinates resolution of implementation and transition issues among NAS programs.

This function includes computer-aided engineering and 3-dimensional design tools for facility modeling and site analyses that support transition, installation, and site planning.

System Maintenance Operations

This function provides guidance and tools to monitor NAS systems and manage the operation and maintenance of the systems. It also provides for the planning and management of leased communications.

System Support Operations

This function provides second-level hardware and software engineering support to the NAS field facilities. The function includes documentation control, publication and issuance of directives, and inservice improvements. Strategic operational support activities include planning for second-level engineering support, managing the NAS software life cycle, developing second-level national software engineering policy, providing software support tools and practices, and providing configuration management of inservice hardware and software.

NAS Spectrum Engineering Management

By national policy, the FAA is the manager of all aeronautical spectrum required to support NAS communications, navigation, and surveillance (CNS) systems. This spectrum must be available at all times and be free of radio frequency interference. This function provides support to obtain and protect necessary frequencies for current and future NAS operations. Additionally, the FAA provides both national and international coordination for aeronautical mobile services, aeronautical fixed services, and aeronautical mobile satellite services in developing International Civil Aviation Organization (ICAO) standards and recommended practices.

This function provides spectrum engineering and frequency management support for NAS modernization projects. Furthermore, the function provides the regions with the training, resources, and equipment (i.e., spectrum analyzers and handheld direction finders) required to independently identify the source of interference in a timely manner.

System Requirements, Design, and Acquisition

This function identifies and prioritizes mission needs; baselines system cost, performance, and user benefits; documents requirements; recommends alternative solutions; and supports implementation of selected alternatives. The function provides automated tools, facilities, and processes for research, engineering, and development (R,E&D) management and implementation, mission and investment analysis, system engineering and analysis, software engineering analysis, system development and testing support, program engineering and evaluation, acquisition support, system implementation, and deployment decisions.

This function develops and maintains the NAS architecture. It manages crosscutting NAS information technology programs, such as NAS information standards activities and NAS information security activities. Costs for these activities are covered in Sections 19 and 9 respectively. It also provides R,E&D management, NAS program management, mission and investment analysis, and system engineering.

Operational Testing and Aviation Research

The William J. Hughes Technical Center (WJHTC) provides technical laboratories to support NAS testing and aviation research activities. This function coordinates space requirements, in-

stallation plans, and changes to ensure the laboratory meets testing and research needs. Other technical laboratories are used by the FAA, and the costs for these laboratories are captured under each individual application.

This function provides unique nonoperational test beds, not available elsewhere, that duplicate the NAS environment. This function also provides support applications, fixed-wing aircraft and helicopters to provide flight data for projects, ATC simulation support, data centers for computational modeling and research data analysis, and human factors support.

Logistics Support

The logistics function is responsible for depot and limited field maintenance; supply support for NAS equipment and agency aircraft; replenishing and repairing spares; and purchasing, leasing, and managing real estate, including land, office space, and specialized facilities. This function identifies the requirements for and funds the acquisition of spare parts and repair services and other logistics-related activities, such as contracted logistics support and logistics training.

Training

The training function, as defined here, supports general FAA training requirements, including those for NAS modernization activities and operations. The FAA Academy at the Mike Monroney Aeronautical Center (MMAC) conducts technical training and maintains high performance standards for air traffic controllers, engineers, inspectors, and other FAA specialists. A portion of the academy is dedicated to training international aviation personnel through the International Training Services Center (ITSC), which promotes seamless transitions by introducing the new technologies being incorporated into the NAS.

Academy classrooms, laboratories, and instructional staff work areas need to be modernized to fulfill the FAA training mission to coincide with new technologies entering the NAS. The training function identifies requirements for and provides the tools and internal infrastructure to deliver technical training courses. This function includes funding for the FAA Academy, contracted training, and computer-based instruction equipment replacement, upgrades, and conversions to reduce overall training costs.

The Center for Management Development supports the agency's continuing efforts to ensure a safer, more efficiently managed NAS. The center's curriculum is broad and designed to strengthen both interpersonal and technical management skills. All courses focus on actual job functions to help build the specific skills needed to improve job performance.

Flight Inspection and Procedures

Flight inspection and procedures functions are performed by Aviation System Standards (AVN) at the MMAC, FAA Headquarters, the Air Traffic Control System Command Center (ATCSCC), and in the regions. The National Flight Procedures Office, located at the MMAC, is the central location for the development and standardization of instrument flight procedures and related technical support functions. The Flight Inspection Operations Division performs flight inspection functions and provides the tools and infrastructure to support in-flight inspection and evaluation of air navigation aids and instrument flight procedures. The FAA's flight inspection aircraft support domestic, foreign, and military worldwide navigational air inspection requirements.

This function procures and leases FAA flight inspection aircraft and provides FAA Academy flight simulators used to train aviation safety inspectors. The function also develops automated systems, including the instrument approach procedures automation (IAPA) system and the aviation standards information system (ASIS). The IAPA system provides automated tools to assist development of timely and accurate standard instrument approach procedures (SIAP).

Regulatory and Certification Activities

This function includes regulatory and certification activities not covered elsewhere. It provides the tools and processes needed to support ATS and other organizations in performing regulatory- and certification-related activities. A key system supporting this function is the obstruction evaluation/airspace and airport analysis (OE/AAA) system.

31.2 Tactical Support Functions

These functions are performed by one or more FAA organizations to support air traffic management and regulation and certification services.

Air Traffic Operations and Procedures

The tactical operations and procedures support function monitors day-to-day NAS operations. It also includes such activities as contingency planning and facility evacuation.

Flight Advisory and Hazardous Information Service

This service provides real-time information affecting flight conditions to pilots by issuing notices to airmen (NOTAMs). NOTAMs are collected, processed, and distributed via the weather message switching center replacement (WMSCR), the Consolidated NOTAM System, the National Airspace Data Interchange Network (NADIN), and other means. The Consolidated NOTAM System will be replaced by ODMS.

System Maintenance and Operations Support

System maintenance and operations (SMO) support provides onsite maintenance and repair services throughout the NAS. These services include site program implementation of new facilities and equipment; first-level technical engineering support for the NAS hardware and software; certification and verification of operational hardware and software; day-to-day technical assistance and coordination for hardware and software users; and certification of services provided to the air traffic environment, automation, communications, and surveillance.

System Support Operations

Tactical support includes developing hardware and software modifications, implementing approved changes, evaluating systems and system changes, and other tasks as required to ensure reliability and maintainability of the NAS. Operational support activities include maintaining operational software for all NAS systems; providing second-level hardware and software engineering support to field facilities; developing and implementing hardware and software enhancements; participating in systems operational test and evaluation and verification; and conducting system shakedown tests.

Logistics Support

This support function provides procurement, real estate, material management, and automated data processing support services to implement capital investment programs in the regions and centers. This function uses contracted support for many of its activities.

Training

The tactical training function provides on-the-job training for controllers and other specialists. This function supports technical training conducted or contracted out at regional or local facilities.

31.3 Business Operations

Business operations functions support the delivery of all FAA services. The following paragraphs provide high-level descriptions of several business operations functions.

Management and Planning

This function includes activities such as conducting special studies, evaluations, and appraisals; developing staffing standards; disseminating information and policy; and supporting the agency in organizational analysis, management studies, and management productivity. It implements the National Performance Review (NPR) Customer Service Initiative, supports strategic and business performance planning efforts, and develops the Government Performance and Results Act (GPRA) Annual Performance Plan.

Safety Data Analysis and Reporting

FAA management needs timely, accurate, and comprehensive information to support safety decisionmaking. The safety data analysis function provides the tools to identify previously hidden indicators of potential safety problems. The NAS Data Analysis Center (NASDAC) facility has been established at FAA Headquarters to support this function. Online services will be provided for FAA personnel and for the public.

Human Resources Management

This function develops plans and programs relating to recruitment; employment; compensation; benefits; performance management; training; hu-

man resource planning, evaluation, and development; and labor and employee relations. The function supports all training activities not addressed elsewhere.

Financial Resources Management

The financial resources management function develops plans and programs for accounting, budget, and financial management, including financial management systems. It prepares financial management reports, performs accounting operations, prepares and justifies budgets, sets travel policy, collects user fees, and supports financial reform initiatives. The function, under the guidance of the Chief Financial Officer, implements the agency's Internal Control Review Program and the Federal Integrity Act Program. It also designs and implements the new cost accounting system to study the possible implementation of user fees and meet other new requirements.

Information Resources Management (IRM)

This function plans for and develops corporate information systems and maintains corporate information technology management policy. All FAA organizations participate in this function. It manages crosscutting information technology activities and major information technology service contracts such as the integrated computer environment-mainframe and networking (ICE-MAN). This function also implements the Information Technology Management and Reform Act of 1996 (ITMRA). Major IRM/IT activities include the following:

- *Year 2000 (Y2K) Computer Program.* This activity provides for the renovation of all FAA systems that are currently not Y2K-compliant. Many FAA systems, including its core business systems as well as those that comprise the NAS, have been identified as mission-critical and will be affected by the Y2K problem. All FAA systems must be Y2K-compliant before the arrival of the millennium to ensure continuation of safe, efficient, and reliable air traffic services. FAA systems are undergoing a five-phase Y2K repair process, consisting of awareness, assessment, renovation, validation, and implementation. Through this process, all FAA systems will be certified as Y2K-compliant and implemented by June 30, 1999.
- *Corporate Systems Architecture.* This activity establishes, maintains, and enhances an agencywide systems architecture. It concentrates on three distinct elements: software engineering; technology and architecture; and data management, access, and information technology security.
  - The software engineering element focuses on improving the maturity level of FAA organizations and major system suppliers, developing an information architecture for the current Host system to support Host replacement activities, providing guidelines for using commercial off-the-shelf (COTS/nondevelopmental items (NDI) in ground-based systems, and developing guidelines and procedural changes necessary to streamline the software aspects of certification for avionics and ground-based systems. Also, the FAA will help RTCA Special Committee 190 elaborate guidance on use of DO 178B for ground-based systems and using COTS components. This activity will be supported by multiyear FAA programs to increase knowledge of how to certify COTS software components to DO 178B.
  - The technology and architecture element develops standards and implements an interoperable infrastructure to guide government, industry, and the FAA in purchasing, developing, and certifying software-intensive systems. It will permit applications to run on a variety of hardware platforms and minimize the cost of incorporating new standards in software and hardware.
  - The data management element supports establishment of secure electronic data interchange to ensure access to information, people, and organizations needed for decisionmaking.
- *NAS Management Automation Program (NASMAP).* This activity provides the infrastructure, architecture, and operational capability to structure and provide access to mis-

sion-critical data for those employees, managers, and executives who need the data for work or decision processes.

Acquisition Management

This function develops and maintains acquisition policy and guidance and implements acquisition reform. It provides contracting and procurement support for agency acquisitions.

Administrative Facilities Management

This function performs activities such as building space management, administrative telecommunications management, property management, utilities management, and other administrative management functions.

31.4 Costs

FAA estimates for R,E&D; operations (OPS); and facilities and equipment (F&E) costs for mission support and regulation and certification services are depicted in constant FY98 dollars in Figure 31-1. It is assumed that leases and projects requiring annual funding will continue indefinitely. Contracts that provide services or technical expertise will be funded as required, and these costs will increase as the level of modernization, defined in the NAS architecture, requires additional R,E&D, acquisition, system engineering, implementation, and regional support. Technology refresh costs are included for information technology systems, and OPS costs are included for fielded information technology systems.

31.5 Summary

The FAA is striving to maintain its capability to provide the best ATC services to its customers. Mission support services enable the agency to meet strategic and performance goals.

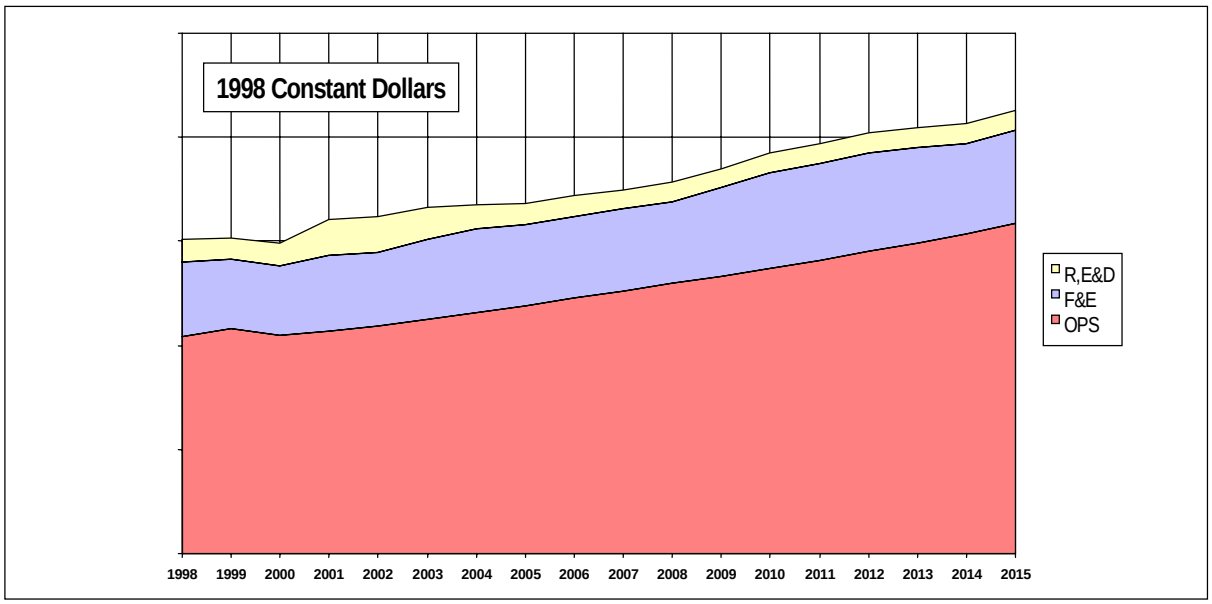

Figure 31-1. Estimated Mission Support Costs