FEDERAL AVIATION ADMINISTRATION

National Airspace System Capital Investment Plan Fiscal Years 2007 - 2011

Table of Contents

Table of Figures

Federal Aviation Administration National Airspace System Capital Investment Plan for Fiscal Years 2007–2011

1 Introduction

1.1 The Capital Investment Plan

The Federal Aviation Administration Capital Investment Plan (CIP) is a 5-year plan that describes the National Airspace System (NAS) modernization projects and the activities we intend to accomplish during that period. The CIP fulfills our obligations stated in the FY 2006 Transportation, Treasury, Judiciary, HUD and Related Agencies Appropriations Act to "… transmit to the Congress a comprehensive capital investment plan for the Federal Aviation Administration which includes funding for each budget line item for fiscal years 2007 through 2011, with total funding for each year of the plan constrained to the funding targets for those years as estimated and approved by the Office of Management and Budget."

The rapidly changing environment for air travel has made long-term planning more challenging. Airline operations dropped 13 percent in 2002 from 2000 levels as a result of the downturn brought on by September 11, 2001, but they are now returning to 2000 levels. Although growth is returning, changes in the airline industry structure are affecting the demand for air traffic services. More operations by low cost carriers with more direct flights, and the rapid expansion in regional airlines' use of turbo jet aircraft will result in a faster rate of increase in the number of operations at airports.

In the past, operations grew at a slower rate than the number of passengers carried, because a significant portion of the increase in passengers was absorbed by either using larger aircraft or flying with a higher percentage of seats filled. The trend toward increased operations is being accelerated because legacy airlines are cutting back service with their larger aircraft and shifting flights to their regional partners that provide service with smaller aircraft. The long-term upward growth trend and current industry adjustments suggest we will need more capacity to avoid an increase in delays. Modernizing the NAS is a key element in expanding capacity to accommodate the increasing demand.

The CIP projects are organized by budget line item consistent with the FY 2007 President's budget. The project funding estimates are based on several factors. For the larger projects, the estimated funding is the amount needed for known contract deliverables and associated support costs. For the projects that upgrade infrastructure, the estimated funding is either the cost for completing specific projects or the annual amounts needed to complete a systematic upgrade of existing facilities and equipment. The CIP is an important business tool because accurate financial planning stabilizes project management and cost control needed to assure success in completing and implementing on going projects for system modernization.

1.2 Strategic Planning and the CIP

Strategic plans create the core philosophy for agency management. They create a vision for the future and develop the objectives agencies use to define strategies and initiatives necessary to realize that vision. The FAA Strategic Plan is required by the Government Performance and Results Act, that requires all Federal agencies to develop a strategic plan. It identifies the most important overall agency goals in terms of the impact those goals will have on the general public. After the goals and objectives are identified, the strategic plan establishes specific performance targets to measure our level of success in meeting them.

1.2.1 The FAA Strategic Plan

The FAA strategic plan, FAA Flight Plan 2006-2010, identifies four specific goals to improve air travel and the agency's performance. The highest priorities for the FAA are:

- Increased Safety;
- Greater Capacity;
- International Leadership; and
- Organizational Excellence.

Each objective lists one or more specific actions to achieve it, and one or more measurable performance targets. We track targets and measure our performance against them to determine results.

Consistent with the President's Management Agenda, we have linked the projects in the CIP to a goal, objective, and performance target. This list of goals, objectives, and the related projects appear in Appendix A. Normally, we group several projects under a single objective and its related performance targets. This is because in a complex system, such as the air traffic control system, we need many projects to meet the objectives and their related performance targets. In addition, many projects are interdependent, and one project would not be successful in meeting the performance target without the completion of other supporting projects.

The detailed project information in Appendix B supplements the list of projects in Appendix A. Each project in Appendix B includes a Relationship to Flight Plan Goal section that explains how each project helps meet the Flight Plan goal. The section describes the contribution that the project makes toward meeting that goal, and the expected improvement in NAS services.

1.2.2 The Strategic Management Process

To supplement the broad goals of the FAA strategic plan, the Air Traffic Organization (ATO) uses the Strategic Management Process (SMP) to identify more detailed actions needed to meet Flight Plan goals and objectives. The SMP develops specific initiatives tied to four pathways. These pathways are based on the Flight Plan goals, and they guide the individual ATO service units in choosing projects that support the related performance targets. A key element in the SMP is developing metrics for each initiative so we can define and measure planned improvement in system performance.

The four pathways are:

- Achieve Operational Excellence
- Enhance Financial Discipline
- Increase Capacity Where Needed
- Ensure Viable Future

As shown in Figure 1, each of these pathways has several objectives and initiatives.

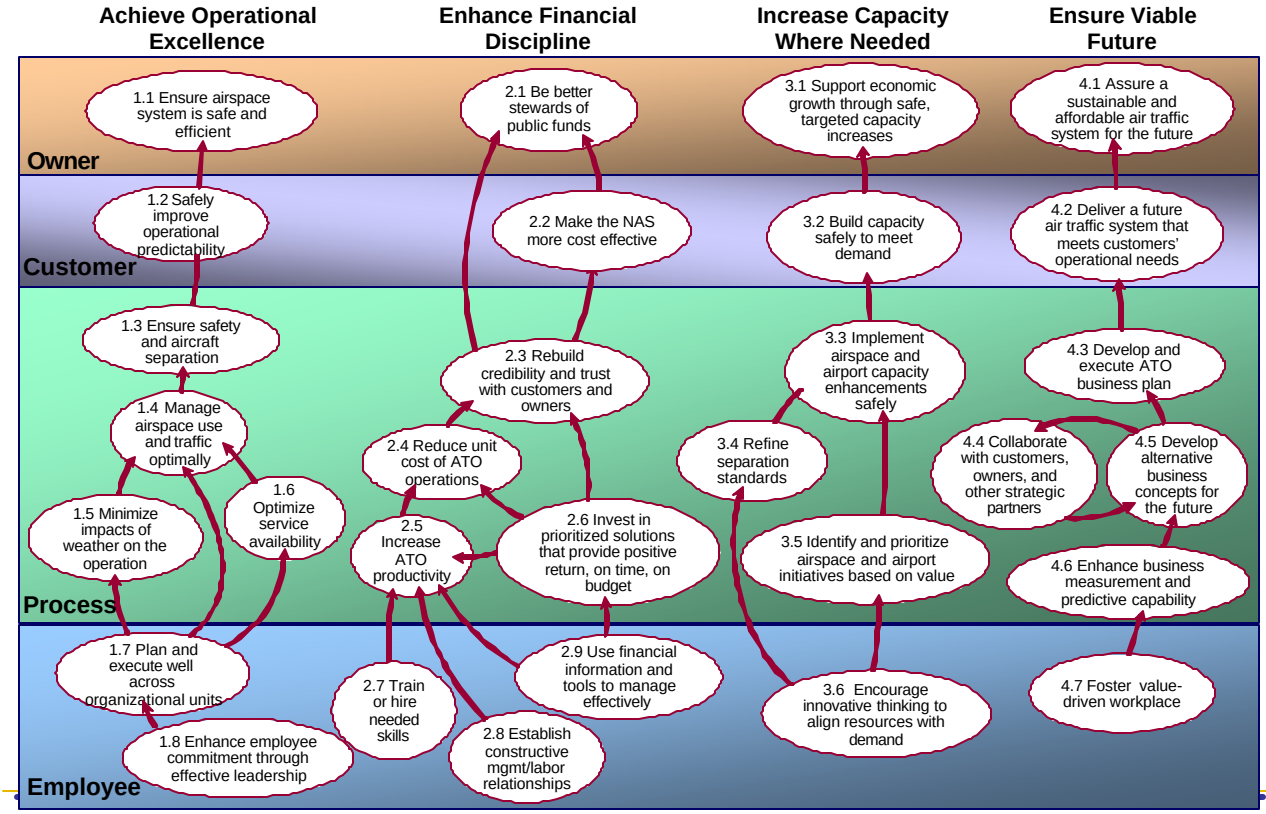


Figure 1 Strategic Management Plan Pathways

The first pathway (Achieve Operational Excellence) maintains the safe and reliable service, that the FAA provides to all our customers. This requires keeping the air traffic control system modernized and constantly seeking ways to improve safety. Given the large base of installed facilities and equipment, meeting the challenges of this pathway requires a large percentage of capital investment resources.

The second pathway (Enhance Financial Discipline) signals the transition to managing FAA more like a private sector business. It depends on accurately measuring costs, setting benchmarks for efficient performance, and making appropriate investments to reduce operating costs. This is necessary if we are to meet the challenges of future growth while controlling costs.

The third pathway (Increase Capacity Where Needed) meets the growing demands of air travel. Many large airports are nearing practical capacity and several more will reach that point within the next 10 to 20 years. While local authorities are responsible for expanding physical capacity of the airport, we must support capacity expansion and the increased complexity this will bring with investment in navigation and landing aids and improved automation.

The fourth pathway (Ensure Viable Future) relies partly on actions taken in the first three pathways, but it extends planning to the time when operations may exceed the capabilities of present systems. Managing the present system successfully is a first step in creating a solid base for expansion. Developing an accurate vision of what we need to support future levels of traffic must follow. Designing and building the system of the future relies on accurately assessing future traffic volume and on deploying equipment to handle those future operations. A sophisticated transition plan is the final step in ensuring that the air traffic system moves from its present architecture to its future form seamlessly without disrupting traffic flows.

Planned expenditures are linked to objectives and initiatives to ensure that resources are directed at identified priorities. More business-like management demands that we invest in projects with measurable returns. We are developing metrics for each objective and initiative to measure their progress. This will help ensure that projects do improve performance and deliver the intended results.

1.2.3 Next Generation Air Transportation System (NGATS)

Consistent with normal management practice, detailed planning focuses more on near-term projects to ensure that present initiatives are implemented successfully. However, as mentioned in the preceding section, aviation is changing and we have begun to develop strategies to cope with that change. The FAA has always done long-term planning, but projected growth of controller workload has emphasized our need to define a future concept of operations and develop a detailed architecture for the systems of the future. A special projects office is assessing future needs and designing the Next Generation Air Transportation System (NGATS).

The FAA reauthorization legislation, titled Vision 100 — Century of Aviation Reauthorization, required the Secretary of Transportation to establish an FAA Joint Planning and Development Office (JPDO) to manage work related to the NGATS. This office coordinates with other government agencies -- including the Departments of Defense, Homeland Security, and Commerce; the National Aeronautics and Space Administration; and the White House Office of Science and Technology Policy -- to study the needs of the future aviation system. The JPDO is evaluating future air traffic demand and the systems needed to accommodate that demand with minimal delay. It is defining the technology changes for the future and planning for the transition to newer more capable systems. To support future planning we have developed road maps that show planned modernization, which will be integrated into the Enterprise (formerly called the NAS) Architecture.

NGATS will take advantage of advanced technologies such as: Automatic Dependent Surveillance-Broadcast (ADS-B), System Wide Information Management (SWIM); Global

Positioning System (GPS) navigation; and enhanced automation systems for dynamic airspace use. ADS-B will allow a seamless surveillance picture, independent of radar locations and coverage. An airborne and space based surveillance and navigation capability based on ADS-B and GPS will break the ties to a ground based infrastructure. Once we adopt these newer systems for use in the NAS, we will need only a minimal number of back up surveillance and navigation systems.

Another aspect of the NGATS' long-term vision is sharing common knowledge of traffic situations to allow decision making when, where, and by whomever needs to make those decisions. We need to build a common set of information so we can use an internet-like network to make information accessible, usable, and secure in real time for everyone involved. We need to be able to communicate with each aircraft individually. Aircraft can then be contacted by any air traffic control (ATC) facility regardless of where the aircraft or the facility is. Beyond the five years covered by the CIP, automation systems will converge on a common platform, which will provide a base for new tools to evaluate airspace and to allocate workload.

Over the coming decade, the NGATS plan will include a concept for removing the geographical limitations of air traffic control facilities by using communications and automation to share air traffic information nationwide. The controllers' focus would shift from controlling individual flights to selecting options for the best use of the airspace for all the flights under their control. Instead of static facility assignments and daily flow planning to manage the demand, the ATO will dynamically apply resources to areas of high demand. Using dynamic airspace allocation, controllers can be assigned to support high traffic areas on an hour-by-hour basis, so the daily staffing can be optimized across the entire system. This initiative will support ATC workforce planning, by allowing the projected growth in traffic to be handled within the present workforce levels.

By 2022, we expect that NGATS investments will create a system that can handle twice the traffic of today. This will provide capacity benefits by spreading workload to avoid limitations associated with present airspace sector allocations. Projects that begin the NGATS effort, such as ADS-B and the SWIM are included in this CIP.

1.3 Important Factors Affecting Planning for the Future

1.3.1 Air Travel Demand

The demand for air travel is closely correlated to changes in the economy. The economy has grown in 2005, and economic growth is forecast to continue in 2006. Even with the significant fluctuations in fuel prices, inflation appears to be under control, and travel demand is returning to the growth trends of previous years. Last year's FAA aerospace forecast showed a favorable long-term economic forecast with an average annual Gross Domestic Product (GDP) growth of 3.2 percent for the next 12 years. Figure 2 below shows the historical growth in one component of air traffic workload over the 20 years, 1985 to 2004. The trend has been steadily upward even though there are short-term deviations from the overall trend line.

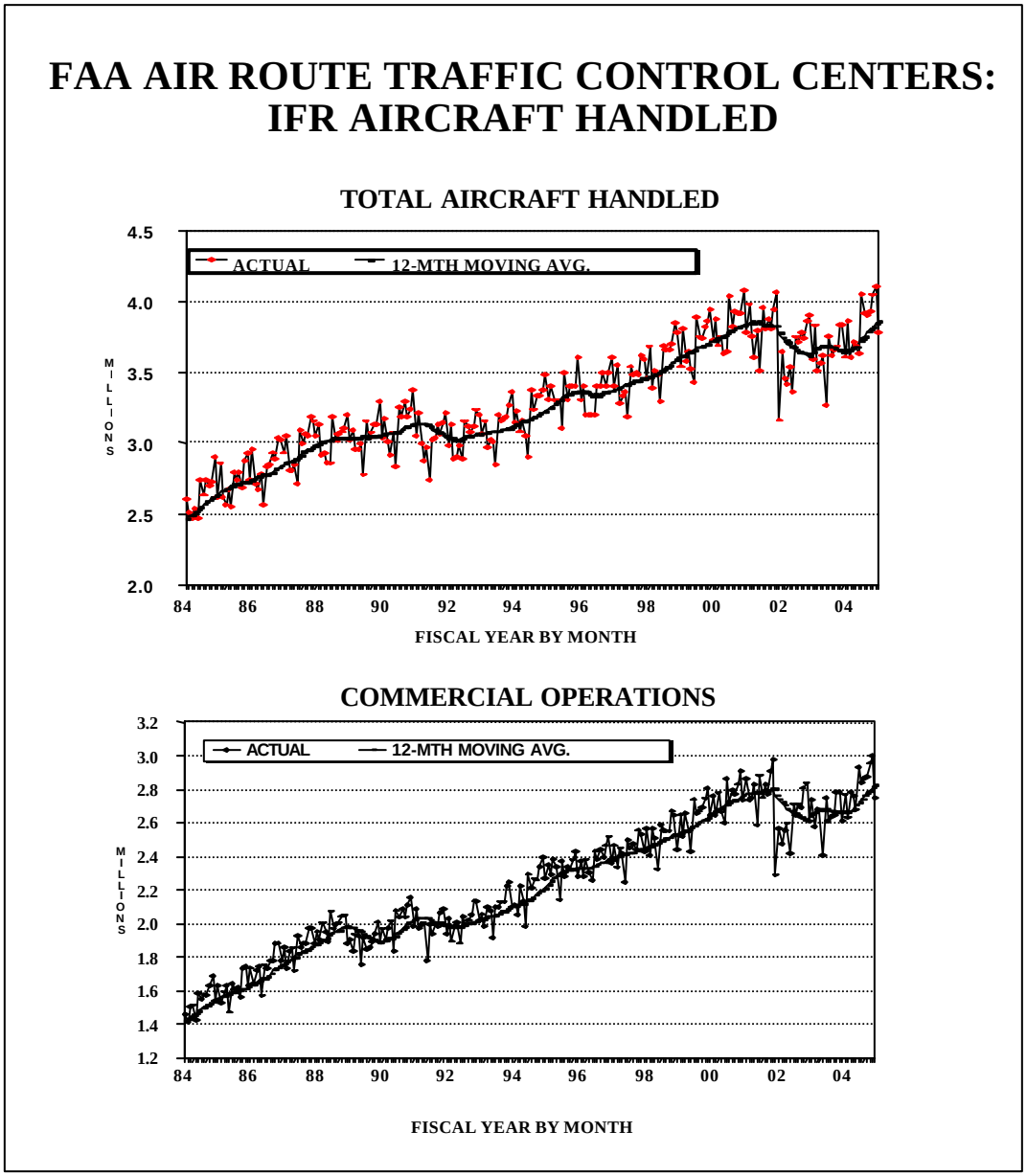


Figure 2 Instrument Flight Rules (IFR) Aircraft Handled by En Route Centers

1.3.2 Air Traffic Workload Growth

A significant driver of future workload growth is the increase in the ratio of operations to passengers carried. Low-cost and regional carriers now have a 43 percent share of the air travel market. Regional jets represent 37 percent of the traffic at the nation's 35 busiest airports. These aircraft carry fewer than 100 passengers. Because of this trend, we expect the growth in air traffic workload will be faster than it was in previous years.

1.3.3 Growth in En Route Operations

Last year's aviation forecast predicted operations handled by en route facilities (Air Route Traffic Control Centers) would grow 2.2 percent per year over the next 12 years. This sounds like fairly modest growth, but it translates to about 25 percent growth over the 12 years of the forecast. In the long term, this growth will create significant pressure on the air traffic control system and make it more difficult to accommodate the requests for efficient routes and altitudes that reduce operating costs for commercial operators. The increasing demand on the system, coupled with the complexity of introducing new technology at multiple locations creates significant challenges in modernizing the NAS.

Figure 3 shows the number of annual operations and the growth trend rate for both en route and terminal operations.

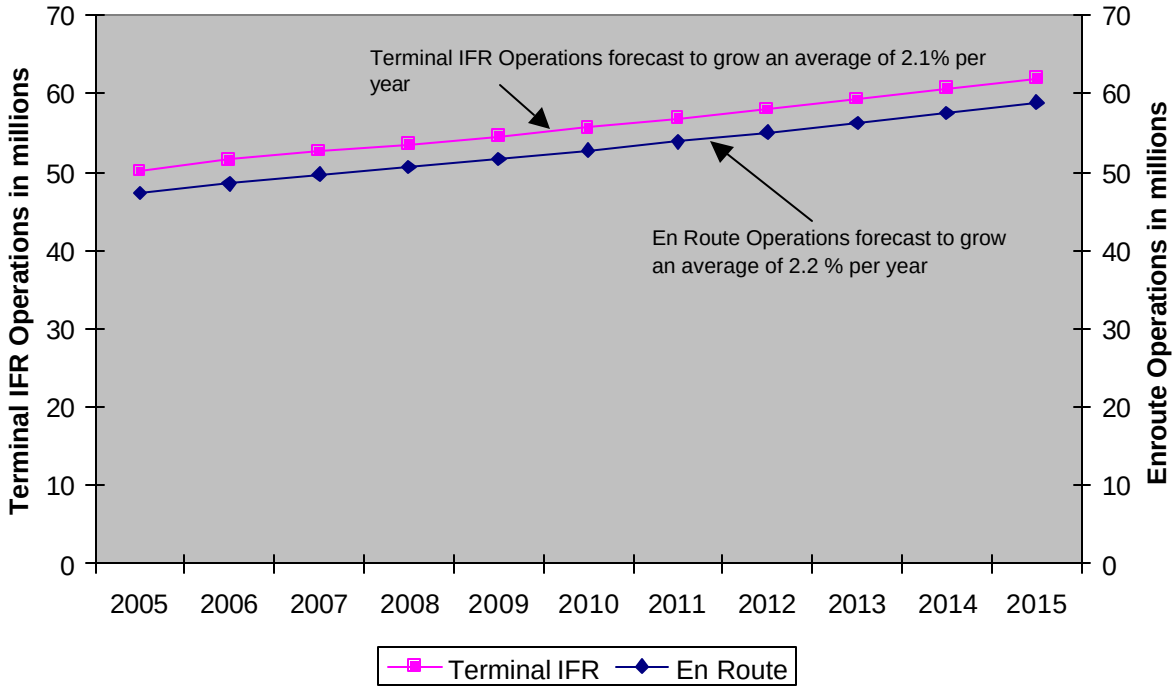


Figure 3 Growth Trends in Aircraft Operations

1.3.4 Growth in Terminal Operations

As shown in Figure 3, the 2005 forecast also estimated that instrument operations at airports would grow at an average rate of 2.1 percent per year over the next twelve years. Instrument operations are the most significant gauge of the workload at terminal facilities. This forecast growth in instrument operations is more noteworthy than the numbers might indicate. The top 35 airports, many of which are currently operating near capacity, handle 73 percent of aviation passengers and a significant percentage of instrument operations. Growth in operations at the predicted rate at these hub airports will translate into increased delays unless capacity is

increased. The major portion of the capacity increase must come from new runways. Eight new runways were commissioned over the period 2000 to 2005. The Operational Evolution Plan shows that at least seven more are planned to become operational by 2010.

Runways are constructed by airport authorities, and local financing for that construction is supplemented by grants from the Airport Improvement Program. However, it is important to note that these new runways require significant capital investment. Often airspace around the airports is reconfigured to accommodate a new runway, and that requires new navigational aids and precision landing systems. An additional expense related to the precision landing systems is the approach lights and visibility sensors. Capital investment may also be required to expand air traffic control facilities and add additional controller positions to handle the increased complexity of terminal airspace. The FAA must support these infrastructure investments to support capacity expansion, at the same time it is investing to improve its own efficiency by upgrading automation, communication, navigation, and surveillance systems to reduce maintenance costs and control obsolescence.

2 Allocating Capital Investment Among Competing Demands

To develop the budget, we use priority rankings based on economic analysis coupled with risk assessment and the project's support of Flight Plan goals. Because safety is FAA's primary mission, safety projects receive the highest priority. Projects that improve internal operational efficiency are also a high priority, because we need to control operating costs. Projects that reduce operating costs for aviation users must be balanced against the projects that improve internal efficiency. Analyzing and understanding the economic trade-offs between user benefits and internal benefits is essential in achieving a credible balance in allocating capital investment funds.

2.1 Maintaining Current Capacity

The FAA has a large base of installed equipment. We allocate a significant portion of capital investment to keep equipment updated so we can sustain high levels of reliability. Many facilities are operating near peak levels most of the day. We cannot allow present systems to deteriorate while designing and building new ones. If delays increase while we are developing and installing new equipment, the cost to users can be in the millions of dollars.

Because existing systems with electronic components have a finite life, we must upgrade them. Several factors contribute to the short life of automated air traffic control equipment. Electronic parts operate at high temperatures, and eventually they become weakened by successive heating and cooling cycles. Also, since technology continues to evolve, hardware and peripherals becomes obsolete at a rapid rate, and it becomes difficult to find spare parts to repair them. Obsolescence also makes it difficult to modify existing systems, because components designed for newer systems are not compatible with existing ones. Replacement needs create a challenge for FAA in balancing replacement costs with the costs of adopting newer, more capable technologies, which would allow us to reengineer the techniques used for air traffic control.

2.2 Controlling the Cost of Operations

Operating costs have increased at an average annual growth rate of 6.2 percent since 1996. We have taken preliminary steps to address this cost growth. In FY 2004, we decreased overall employment in the ATO by 3.7 percent and have taken steps to reduce maintenance costs. We are introducing cost measurement and cost reduction targets to measure progress in reducing costs further. The following projects are examples of initiatives to reduce the cost of operations for the FAA.

2.2.1 Federal Telecommunications Infrastructure (FTI)

The Federal Telecommunications Infrastructure contract provides commercial telecommunications services to support both voice and data communications at FAA operating facilities and to and from FAA headquarters. This contract uses an integrated approach to improve delivery of services. Costly legacy networks will be replaced by modern, reliable, and consolidated network infrastructure incorporating multi-service and multi-media capabilities at low cost.

2.2.2 Distance Learning

The Distance Learning Program enables us to train FAA employees at their workplace using computer based instruction rather than bringing them to the FAA Academy in Oklahoma City. Employees can take courses at their worksite and use interactive media to learn about new equipment and procedures being introduced into the NAS. The major economic benefit of distance learning is that it eliminates part of our costs for student travel and per diem by minimizing the number of employees who have to take resident training. In addition, distance learning increases training opportunities for FAA employees and increases their productivity by minimizing their time away from work.

2.2.3 Energy Cost Savings

The Energy Policy Act of 2005 established a goal for all Federal agencies to reduce their consumption of energy by 2 percent yearly for the ten-year period 2006 to 2015. To reach that goal the FAA/ATO Energy Management Program will adopt energy efficient technologies and provide more precise information on energy consumption to facility managers. Energy efficient lights and fixtures will replace existing lights at 100 facilities. Thermal barriers will be installed to reduce heating or cooling losses from 125 terminal buildings in areas with temperature extremes. Occupancy sensors coupled with automatic controls will reduce unnecessary use of heating, ventilation and air conditioning (HVAC) systems and lights at 25 facilities. Improving how we meter energy consumption will give facility managers more exact information on how energy is being used in their facility, and it will help them find how best to reduce energy consumption. The program is also installing clean and renewable power sources at 150 facilities. Currently we have four wind turbines, 50 solar panels, and seven fuel cells providing electric power. We will continue to install these new power sources. They will reduce dependence on the commercial power grid where grid power is undependable or very costly and improve facility security.

2.2.4 Competitive Sourcing

This program examined the most effective way to provide flight services to aviation users. Savings from contracting out the flight services function are projected to total $2.2 billion over 13 years. In FY 2006, FAA will complete the flight service station transition and explore other areas where it may be more cost-effective to contract for services.

2.2.5 Restructuring the Air Traffic Control (ATC) System

We are studying other potential avenues for controlling costs in the future. One possibility would be to reduce the number of air traffic control facilities or consolidate some automation functions to reduce operating costs. There are 20 en route centers and over 500 terminal facilities in the contiguous 48 states. We are studying whether other configurations of ATC facilities or reducing the number of these facilities would improve productivity and save operating costs. We need to address important issues such as: where to locate the remaining facilities; whether a nearby facility could back up one with an equipment failure; and the differences in savings between equipment consolidation and facility consolidation.

3 Safety and Security

This section will highlight some of the FAA's safety and security capital programs. Most of the projects in the Capital Investment Plan (CIP) support air traffic control functions, but there are several capital projects included in the CIP that support the FAA's safety mission. The monitoring and enforcement of safety standards remains with the FAA, and these activities are not part of the ATO mission. Safety projects include upgrading and improving databases of safety and aircraft design information. These databases help safety inspectors allocate their inspection hours to the most serious problems, and they are a ready source of regulatory data and past actions taken by the FAA to improve safety. Other safety projects include weather systems that enable controllers to warn pilots of severe weather problems and upgrades for inspection aircraft that check the accuracy of navigational aids and precision landing systems.

Responsibility for regulating airport security has shifted to the Department of Homeland Security, but we must maintain and improve our internal security. The air traffic control system is part of the nation's critical infrastructure, and we must protect it from damage and disruption. We must ensure both physical security of structures and equipment and information security for computer systems. We must also maintain back up systems for continuity of operations during natural disasters and human efforts to disrupt system operations. This includes secure facilities and emergency radio networks to maintain operational control when normal systems are unusable.

3.1 Aviation Safety Projects

The following projects represent some of the most important safety initiatives supported by capital investment.

3.1.1 Safety Databases

The Aviation Safety Analysis System (ASAS) and its two follow-on projects—the System Approach for Safety Oversight (SASO) and the Aviation System Knowledge Management Environment (ASKME)—are safety databases that provide information to aviation safety inspectors. These databases contain records of safety infractions by pilots and air carriers; safety regulations governing how to operate, manufacture, and repair aircraft; and directives and compliance records for commercial operators. Having this information readily available ensures that the FAA safety inspectors are aware of the past safety compliance of the people and organizations they are reviewing. It also increases the effectiveness of these inspectors and ensures that they have the latest information about FAA regulations and Advisory Circulars when they conduct inspections.

3.1.2 Safe Flight 21

The Safe Flight 21 program has been testing new operational concepts in Alaska that improve both safety and efficiency. Using automatic dependent surveillance (a surveillance technique that requires the aircraft to radio its position to a ground system) and ground based transmitters, we have been able to provide better services to aircraft even though Alaska has much less ground infrastructure than more populous states. Automatic dependent surveillance provides positive air traffic control for areas beyond the coverage of existing radars. This allows more precise separation of aircraft. It has also been used to find a downed aircraft quickly and save a pilot's life. The ground based transmitters have been used to transfer weather, air traffic and terrain information to the cockpit to help pilots avoid hazards and choose safe flight paths when they need to deviate from planned routes because of severe weather.

3.1.3 Runway Incursion Reduction Program

The Runway Incursion Reduction Program investigates technology that can help prevent runway incursions. Runway status lights are one of the technologies that have been tested. These lights give pilots signals similar to a traffic light. One of the signals tells them not to enter or cross an active runway. Another tells them that it is safe to proceed. Other technologies explored by this program include using bar coding to determine the best way to keep controllers informed of an aircraft's position on the airport's surface. As new and better techniques are developed to warn of potential runway incursions, they can move from development and testing to implementation.

The systems that are developed in this project will supplement the Airport Surface Detection Equipment (ASDE) that is discussed in the roadmap sections. The ASDE-3 is a radar-based system that displays the location of aircraft on or near the runway and ground vehicles that could pose a hazard so controllers can issue warnings to prevent a runway or taxiway accident. The ASDE-X uses a variety of technologies to provide the same information. Both support FAA efforts to reduce runway incursions and prevent accidents.

3.1.4 Weather Systems

We discuss these systems in the weather roadmap section, but we mention them here also, because most weather sensors help improve the safety of flight. The Terminal Doppler Weather radar, Weather Systems Processor, and the Low Level Wind Shear Alerting System all provide warnings of dangerous wind shear conditions to help pilots avoid flying into hazardous weather. Visibility sensors measure the distance pilots can see on a runway so that they know whether visibility is above or below the minimums needed for a safe landing at the airports where they intend to land. The weather sensing and reporting systems are integrated to produce weather forecasts so flights can be routed around severe weather and avoid turbulence and thunderstorm risks.

3.2 Security

There are several programs to protect FAA facilities and equipment and to prevent injury to employees and damage and disruption of air traffic control systems. The major projects are discussed below.

3.2.1 Facility Security Risk Management

Standards for facility security have become more rigorous in the past four years. The Department of Homeland Security, in conjunction with the General Services Administration has issued guidelines for improving the security of government buildings. We have analyzed all our facilities to determine if we are in compliance with these guidelines. We will upgrade existing buildings to meet the standards that apply, and will design new buildings with appropriate security safeguards, including set backs from roads, improved perimeter fencing, and more modern surveillance systems to prevent physical intrusion. The FAA plans to complete certification of existing buildings by the end of FY 2009. There will be an on going program after that to continually improve physical security as facilities are modernized or relocated. We must protect employees and critical equipment so we can keep operating during disasters and disruptions.

3.2.2 Information Security

The FAA must protect the NAS from both external and internal cyber threats. The number of incidents has been reasonably small so far, but the critical nature of FAA's infrastructure requires elaborate security precautions to prevent intrusions. As FAA has moved from proprietary software to using commercial off-the-shelf software, our vulnerability to hacking has increased. As part of our existing information technology security program, we are working to strengthen the firewalls that prevent intrusion and to upgrade anti-virus software and other safeguards.

It is essential that information security be included in the design of new equipment. It is substantially easier to design these features into a new system than to add them after the system is operational. The Office of the Chief Information Officer will develop requirements for new system design and issue certification for those systems that comply. We are also working on

adaptive quarantine, which allows information systems to isolate any components affected by a virus or worm until the system is safe to use. Presidential Directive/HSPD-12 sets the policy for a common identification standard and mandates government-wide implementation of secure and reliable forms of both physical and logical identification. The FAA must develop and integrate enterprise-wide access control services. The Office of the Chief Information Officer is responsible for developing the logical access portion of the HSPD-12 requirement.

3.2.3 Emergency Communications

In case of natural disasters or human caused disruptions to services, the FAA must maintain communications among its facilities. The NAS Recovery Communications (RCOM) project provides an emergency communications network using high frequency radio. It also provides secure communications for voice and facsimile messages. Mobile communications devices are provided for short-range communications. We are continually upgrading and testing these systems so that they will work when they are needed.

4 Enterprise Architecture: A Guide for Migration to the System of the Future

Office of Management and Budget policy requires all Federal agencies to produce a detailed enterprise architecture describing the information technology systems they use and their plans for future improvements or replacements. The FAA enterprise architecture provides a clear picture of the complete set of systems used in present and future air traffic control facilities. The FAA can use it to analyze opportunities to standardize and coordinate our use of these systems. Developing the enterprise architecture requires a disciplined approach in identifying current systems and projecting how they will evolve. It defines the data transfers between systems and the exchange protocols. It also encourages standardizing hardware and software, so systems operate more efficiently and we can perform our missions more productively.

4.1 The FAA Enterprise Architecture

The FAA has prepared a system architecture for several years, so we have a solid base for an enterprise architecture. The existing NAS architecture contains a description of the current systems and plans for how to configure the future air traffic control system. The new enterprise architecture will add information to the existing base to serve a broader group of executives and system developers. It will contain several views of the system from executive to operational. These views are layered, with detail increasing from the lower numbered views to the higher numbered ones. We will also have a disciplined process for updating these views. Keeping data in the enterprise architecture current is essential to making it usable throughout the organization.

4.2 Roadmaps to the Future System

The detailed roadmaps shown in the following sections are an integral part of the enterprise architecture. These roadmaps show the progression from the present system to the infrastructure needed to support the system of the future. The roadmaps reflect long-range planning that

extends beyond the five-year period covered in the CIP. The roadmaps will ensure an orderly transition to the Next Generation Air Transportation System (NGATS). Modernization will occur in incremental steps, but it is important to show the beginning and ending configurations so changes are synchronized for all the functions portrayed in the roadmaps.

Modernization shown in the roadmaps is based on creating a system that can handle future demand. We conducted a systematic review of what changes would support expected future levels of air traffic based on the assumption that current technology was not adequate. Many of the enhancements will take place after 2011.

4.2.1 Automation

The FAA uses automation for several purposes. The initial en route automation systems were installed in the 1970s and updated in the late 1990s. They help controllers by presenting information on their displays as well as depicting aircraft position. They show aircraft identification, speed, altitude and whether the aircraft is level, climbing or descending. They also provide maps with information on routes, restricted areas, and several other fixed features of the controller's sector. The terminal automation systems installed and upgraded since the 1970s provide similar information for the controllers handling aircraft approaching or departing airports. Automation also supports many functions that are essential to controlling air traffic such as showing the data from weather sensors, giving the status of runway lights and navigational aids, and printing flight plans. System capacity would be substantially less without these automation aids.

The automation roadmap shown in Figure 4, depicts systems that we are using in 2006 and the progression to more capable systems over the planning period. One of the important future year changes shown in the roadmap is reducing the number of automation systems by consolidating functions in larger shared systems. We are installing some of the new systems shown; but, for some projects, the roadmaps show conceptual changes that are still in the planning stages.

Automation Roadmap

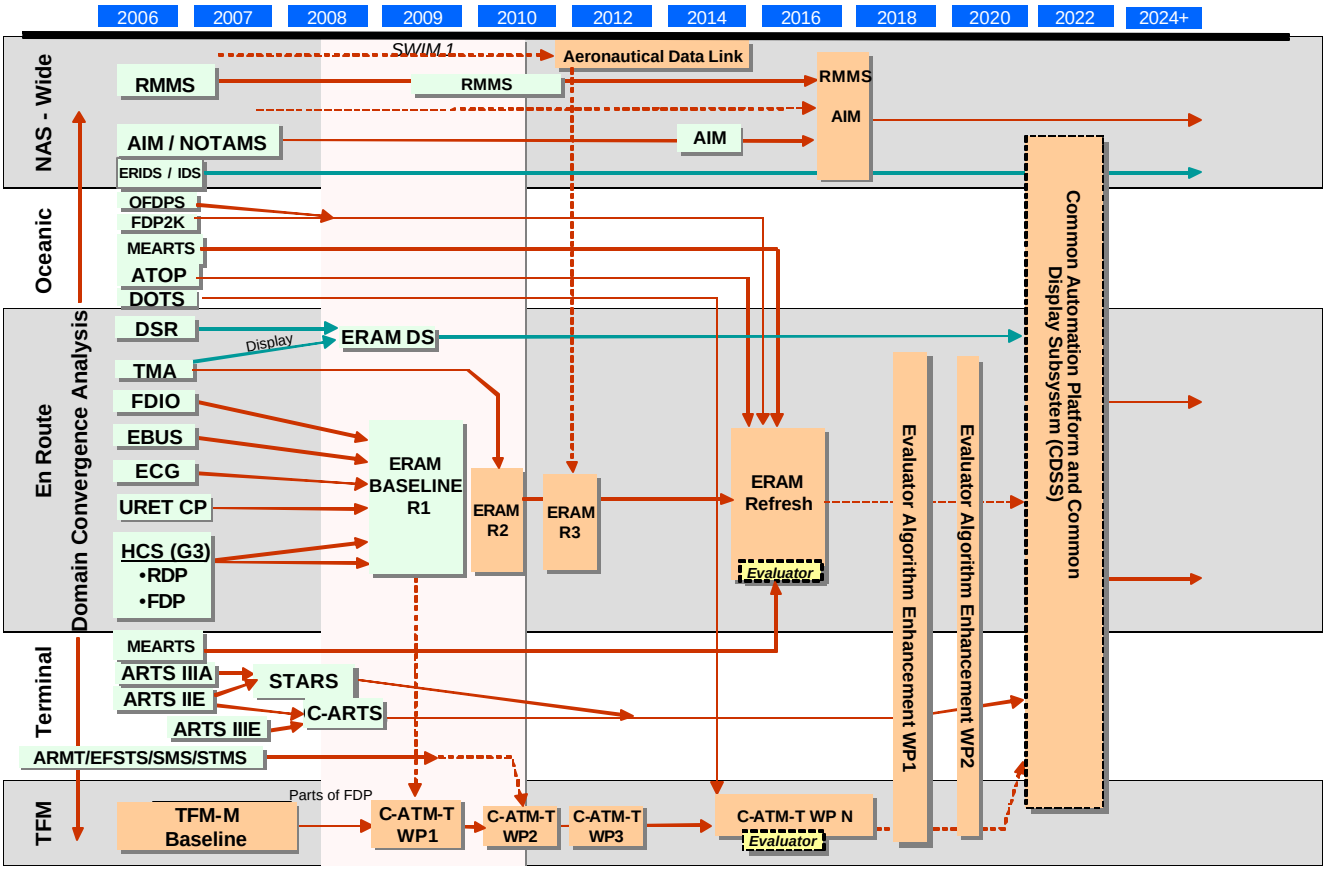


Figure 4 Automation Roadmap

Figure 5 shows the projected CIP expenditures on automation roadmap projects.

FAA future budget projections are not released to the public.

Figure 5 Expenditures in the Automation Functional Area

There are several information systems that provide relevant information to air traffic facilities. The Notices to Airmen (NOTAMs) system provides status information on runways and other infrastructure to inform pilots of runway closures, status of navigation aids and flight restrictions. The Remote Maintenance Monitoring System (RMMS), which is part of the NAS Infrastructure Management System (NIMS), provides equipment operational status information to maintenance personnel. These systems will use the System Wide Information Management (SWIM) system to share data beginning about 2009.

Many parts of the current en route system are being replaced under the larger En Route Automation Modernization (ERAM) program. Some of the early stages of the replacement program are complete. We have replaced the original back up system, which sustains operations if the main en route automation system fails, with a system called EBUS (en route back up system). A support computer system, which formats radar data and flight information for the main en route computer (called the Host Computer System), has been replaced by the En Route Communications Gateway (ECG) and is now operational.

We are replacing en route systems for several reasons. The displays we use now are out of production, and their failure rates are increasing. The automation software is written in an obsolete language, which cannot be ported from the Host Computer System (HCS) to the next generation of computers. The existing system cannot dynamically process changes in flight plans, and it will not support the most advanced traffic management tools we need to handle the expected growth in air traffic demand.

ERAM is a large program, with an estimated capital cost of about $2.2 billion; but the FAA Investment Analysis, completed in 2004, estimated that it would yield $8.8 billion in benefits. The benefits come mainly from avoided maintenance costs and increases in the number of aircraft that can use the same segment of airspace simultaneously. Replacing the hardware and software will reduce maintenance costs by $1.8 billion. User benefits of $5.3 billion result from improved operating efficiency because ERAM will allow faster processing of route requests and in flight route changes. The remaining $1.7 billion in benefits comes from safety improvements and reduced FAA staffing from converting paper processes to electronic information systems.

As the roadmap shows, we have started planning for a Common Automation Platform that we can use for both en route and terminal air traffic. The system would use common processors, and there would be a seamless transition from terminal to en route and back to terminal. This system would also share information with the System Wide Information Management (SWIM) system, which would collect and share data with facilities that are part of the air traffic control system and with authorized users.

Automation systems used in the terminal environment are a mix of the Automated Radar Terminal System (ARTS) models II and III, and the Standard Terminal Automation Replacement System (STARS). There are about 170 terminal automation systems currently in place, and about 50 are STARS. The Stars program is currently approved to install 9 additional systems. The FAA is studying several options for terminal automation. We have deferred full replacement of the ARTS with STARS until we complete further analysis on the benefits of collocating terminal facilities.

The Advanced Technology and Oceanic Procedures (ATOP) system for oceanic air traffic control is fully operational at New York and Oakland. The third, at Anchorage, Alaska, should become operational in spring 2006. The ATOP equipment is expected to remain in service until 2022. ATOP provides controllers a more precise display of aircraft position, which allows reduced separation of aircraft flying over the oceans. Reduced separation results in more aircraft receiving the most fuel-efficient altitudes and routes. The most recent update of benefits prepared by the integrated product team estimates total user benefits of $2.6 billion.

The Traffic Flow Management (TFM) hardware and software is installed at traffic management units at the centers and large terminal control facilities. These units coordinate with the Air Traffic Control System Command Center (ATCSCC) in Herndon, Virginia to manage traffic flows across the NAS. The TFM advanced software tracks aircraft under positive control and calculates the anticipated demand on system capacity with present and future levels of operations. It also relies on detailed weather forecasts to predict delays, and, if necessary, to help choose the best routes to avoid severe weather. A key for success of the system is cooperation with airspace users. The ATCSCC is in contact with airline operations centers and shares information with users to reach agreement on the best way to avoid delays.

4.2.2 Communications

Communications is essential to air traffic control. Radio, ground telecommunications lines and satellite links connect pilots with controllers and provide interfacility and intrafacility

communications. Voice switches in air traffic facilities allow controllers to select the channels they need to communicate with one another and with pilots. Radios in these facilities and those at remote locations, that extend the range of communication beyond the limits of direct radio transmission, are connected to the voice switches. Emergency systems provide communications when the primary systems fail.

There is a limited band of frequencies assigned for air traffic communications. As the volume of traffic increases, the number of frequencies available limits our flexibility to add control sectors. There are several solutions to expanding the number of channels available. We are waiting for industry agreement on the most suitable technology for handling future growth and the expanding levels of information exchange needed to maintain efficient operations in the future.

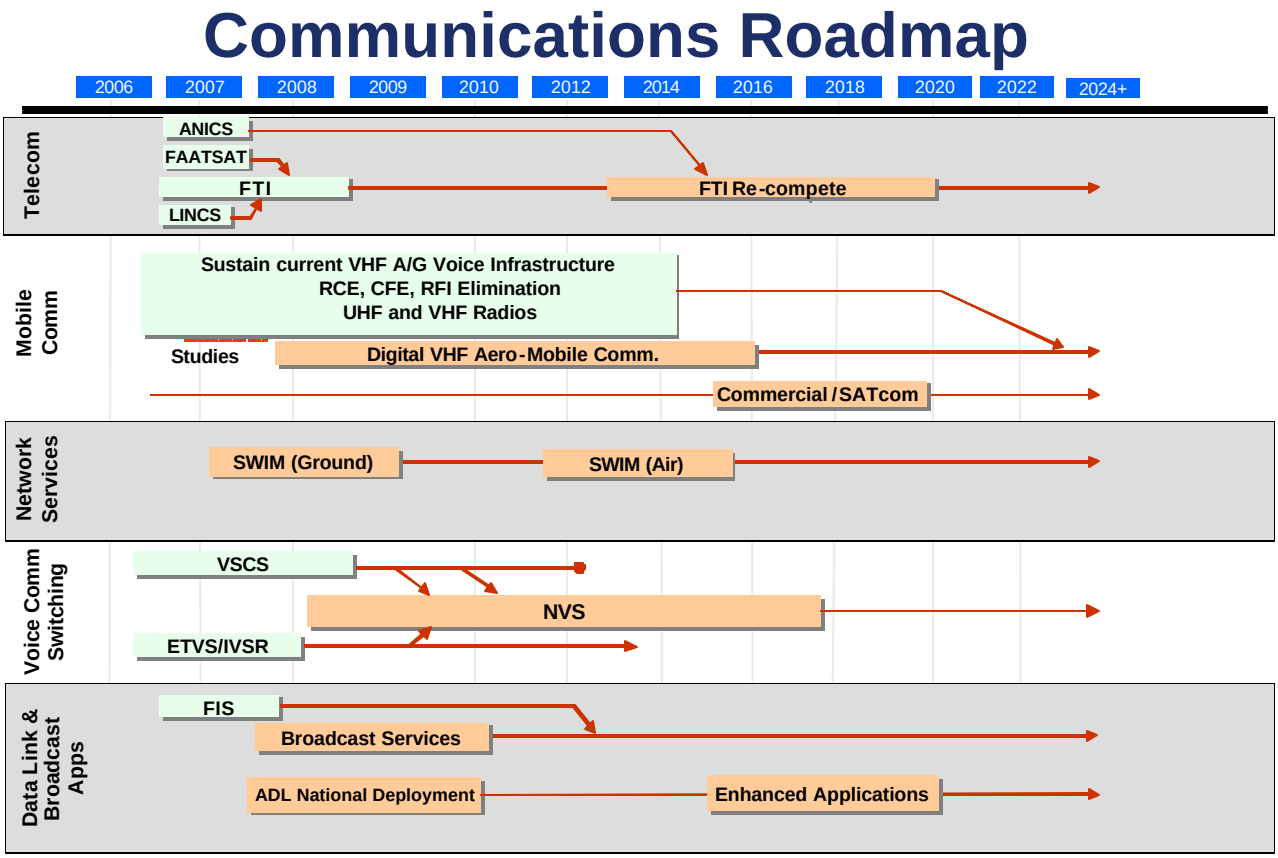


Figure 6 Communications Roadmap

Figure 7 shows the projected CIP spending for replacing communications systems and improving and modernizing communication channels.

FAA future budget projections are not released to the public.

Figure 7 Expenditures in the Communication Functional Area

The FAA relies on commercial telecommunications companies to provide links between its facilities and to transfer messages from remote radio sites to control facilities. The FAA contracts with a communications provider to provide the land and satellite communications links to connect headquarters and field facilities. These telecommunications lines carry both operational and administrative messages. The recent single contract awarded through the FAA Telecommunications Infrastructure (FTI) program reduces costs and allows a higher level of security and accountability for internal users of telecommunications services.

As shown in Figure 6, the FAA has large voice switches in the en route centers that controllers use to choose the best lines to communicate with pilots, other controllers in their own facility, and controllers in nearby facilities. This includes radio communications that are routed to the centers from remote radio facilities, because en route facilities control aircraft that may be 300 miles or more away. This is beyond the range for direct radio communication. Because of increasing maintenance costs on the current switches, we must replace some components to maintain system reliability. The program for component replacement is called the Voice Switching and Control System (VSCS) Technical Refresh. In future years, we will begin replacing the VSCS with the NAS voice switch. We will design this new switch so we can use it in both en route and terminal facilities. It will be a flexible design that can be built to the right size for the facilities using it. Standardizing switches reduces training, maintenance and spare parts costs.

The terminal facilities also rely on voice switches so controllers can communicate with aircraft and controllers in other facilities. These switches are less elaborate, but they must operate at the same high reliability as the large switches in the centers. We have purchased three sizes of these switches and replaced many of the older terminal switches. By 2009, we plan to begin developing the NAS voice switch to replace existing terminal switches as they reach the end of their service life.

Most existing aircraft radios have a single channel on each frequency for voice communication. Since the allocated radio frequency bands are already being used, we cannot rely on obtaining additional frequencies to increase the number of channels for communication. One technique to

provide more capacity, which is currently used internationally, is further dividing the frequency band around the nominal frequency. Modern radios are more sensitive and can use a narrower frequency band with little interference, but there are limits to this technology. A second approach is to provide more channels on each available frequency by sharing use of the frequency through message timing and sequencing. The FAA is buying radios with this capability, which can also support the existing single channel radios commonly in use. There is an international study underway by ICAO (International Civil Aviation Organization) to determine which new technology should eventually be adopted. International carriers should agree by 2015. The new technology cannot be used until compatible equipment is installed in aircraft.

Commercial airlines make extensive use of data link for communications between aircraft and airline operations centers. The ATO has an experimental program to test how data link would work for transmission of routine air traffic control messages. We are not considering using data link for immediate communications to pilots giving heading, altitude and other air traffic direct changes. There are many advantages to data link, including eliminating pilot read back errors when they confirm clearance information with controllers, and reducing controller workload. In addition, the data link would allow the pilot and controller to exchange more information. We will decide whether to implement data link in 2008. Implementation will depend on users equipping their aircraft with compatible equipment.

We plan to continue funding smaller communications programs, upgrading and modernizing systems when necessary. We will continue to upgrade and relocate remote receive and transmit stations that extend the range of radio communications with pilots to meet changing flight patterns. We have installed a satellite communications system in Alaska, because it has less ground telecommunications infrastructure than more densely populated states, and this system will be modernized.

We will continue to upgrade and relocate remote receive and transmit stations that extend the range of radio communications with pilots to meet changing flight patterns.

4.2.3 Surveillance

To provide separation services to aircraft, air traffic controllers must have an accurate display of all aircraft under their control. Controller displays use radar and transponder information to show the location of aircraft and portray flight data. Terminal facilities use several models of the Airport Surveillance Radar (ASR). These radars use reflected electromagnetic energy to show aircraft location. The primary information used by controllers is provided by another technology called the beacon interrogator. This system sends a signal to aircraft equipped with a transponder. The transponder sends a reply, which gives the aircraft call sign, altitude and speed and allows the beacon interrogator to determine its position.

In the en route environment, similar systems are used to detect aircraft position. Air Route Surveillance Radars (ARSR) are the long range radars that provide position information using reflected energy, and Air Traffic Control Beacon Interrogators (ATCBI) send signals that aircraft respond to with position information and data identifying the aircraft, speed, and altitude.

There are two systems used on the airport surface. The Airport Surface Detection Equipment (ASDE) provides a display of aircraft and ground vehicles in the airport operating areas (runways and taxiways) and helps controllers manage aircraft on the ground to prevent runway incursions. There are two ASDE models, the ASDE-3, which relies on radar surveillance, and the ASDE-X, which uses various technologies to achieve the same purpose.

The Precision Runway Monitor (PRM) uses rapid-update radar to provide the accuracy controllers need to handle simultaneous parallel approaches on closely spaced runways.

Figure 8 is the roadmap for surveillance systems.

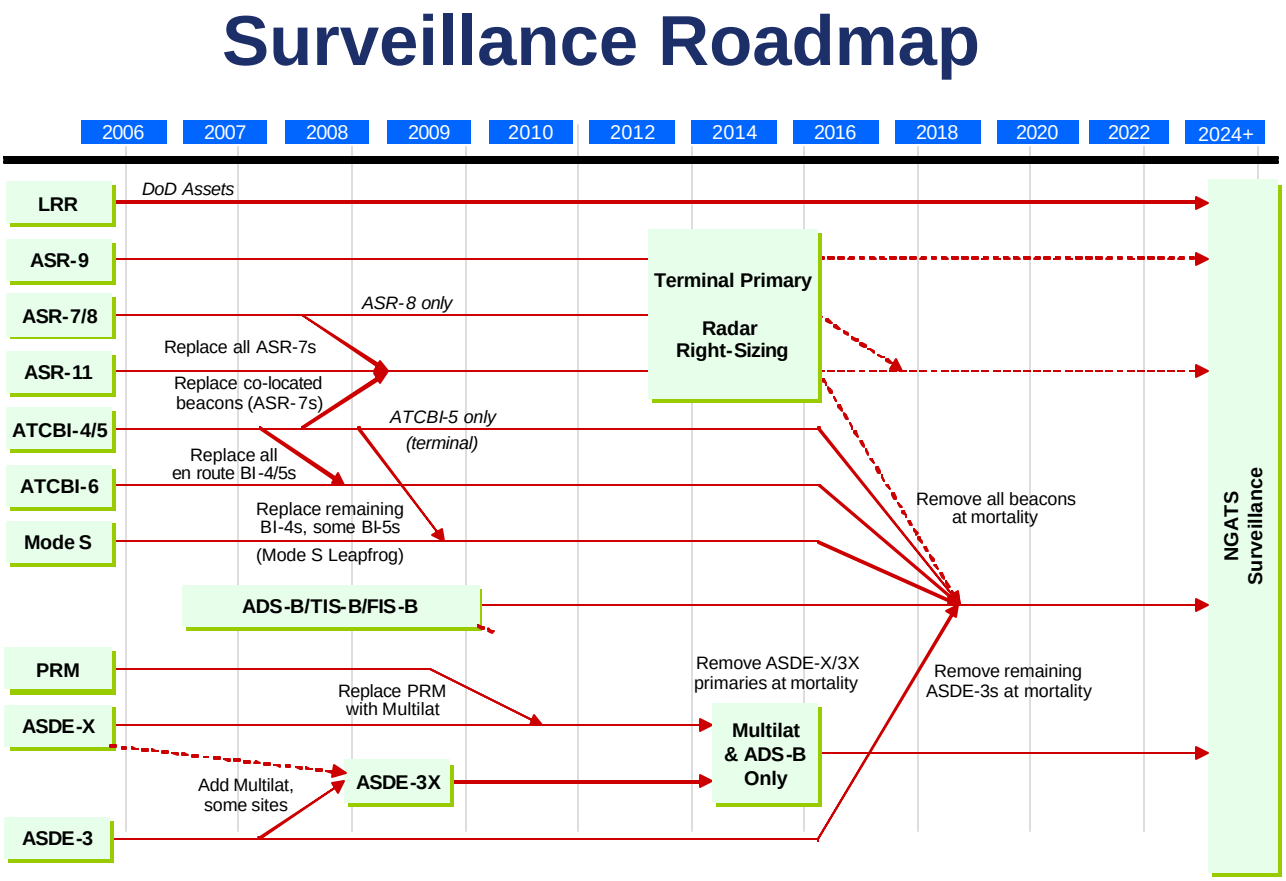


Figure 8 Surveillance Roadmap

Figure 9 shows the CIP costs associated with upgrading the surveillance units.

FAA future budget projections are not released to the public.

Figure 9 Expenditures in the Surveillance Functional Area

The ASR-9 radars installed at airports will remain in service at least through 2017 and possibly longer. Most of these radars were installed in the 1990s, and they are undergoing a service life extension program over the next several years. The older ASR-7s are being replaced by the ASR-11. Terminal radars are designed to display traffic within 60 miles of the airport, and these primary radars are more critical in the terminal areas. Smaller aircraft that do not have a transponder and do not fly under positive control in low altitude airspace outside the terminal control areas could stray into controlled airspace and not be detected without primary radar. Replacing these radars depends on future facility configuration studies. Plans do not call for the long-range primary radars to be replaced, but they will remain in service and receive service life extension upgrades as necessary.

Many of the older beacon interrogators were upgraded by the Mode-S system. The Mode-S system can address aircraft individually rather than just send out a signal that triggers all aircraft transponders. Also, the Mode-S aircraft transponder sends information to other aircraft, whose collision avoidance systems calculate the relative position of the transmitting aircraft and warns pilots when aircraft are too close. The Air Traffic Control Beacon Interrogator Model 6 (ATCBI-6) program will replace the older en route airspace beacon interrogators. These systems are the primary surveillance systems for air traffic control. Information transmitted by aircraft transponders is processed to show aircraft position, identification, and flight data on controllers' displays to help them be more precise in ensuring aircraft separation. We will decommission the Mode-S and ATCBI-6, when Automatic Dependent Surveillance systems are fully operational.

The ASDE-X surveillance systems have been installed at 10 airports, and a total of 35 systems will be operational by 2011. They will remain in service until Automatic Dependent Surveillance systems are fully operational. They use a triangulation technique to locate and display the position of aircraft both in the air approaching runways and on the ground. They also detect the location of ground vehicles in the operations area near the runways and taxiways.

The Precision Runway Monitor (PRM) has been installed at five airports. It is used at airports with closely spaced parallel runways to increase capacity during marginal weather conditions. The PRM systems use rapid update radars and special displays so controllers have precise location information to ensure separation of aircraft making simultaneous approaches to two closely spaced parallel runways. Controllers can maintain a safe margin of separation because

the frequent updates allow them to detect deviations from the approach path in time to warn pilots. PRM allows both runways to be used to full capacity rather than having to reduce airport arrivals during low visibility conditions and use staggered approaches.

The FAA is beginning to use a new technology for showing the location of aircraft. Automatic Dependent Surveillance-Broadcast (ADS-B) relies on a radio signal transmitted from an aircraft to report the position determined by its navigation system. This concept has been tested successfully in low traffic density airspace, and it has been shown to be effective. It is especially valuable in areas with poor or no radar coverage.

In existing applications of ADS-B, the navigation system in the aircraft reports its position based on signals from the satellite system called GPS (Global Positioning System). This is a system of 24 satellites orbiting the earth. Each satellite provides a signal, and navigation receivers process signals from three or more satellites to calculate a precise (less than 50 feet of error) position. Ground stations installed at several locations receive aircraft ADS-B messages and relay the information to air traffic control facilities. The position information appears on air traffic controller displays. The ADS-B ground-based transmitters can also broadcast information to the cockpit. During testing in Alaska, we provided weather, traffic, and terrain information to pilots by data link to improve safety. Significant future work is necessary before ADS-B can be adopted for widespread use. Using ADS-B could reduce the need for beacon interrogators. Reducing the number of beacon systems would reduce maintenance and avoid a portion of future replacement costs.

4.2.4 Navigation

There are two major categories of ground navigational aids, en route and precision approach and landing systems. Radio navigation aids guide pilots in en route flight. Precision landing guidance system and associated equipment enable pilots to land in limited visibility. The primary en route system is the Very High Frequency Omnidirectional Radio Range with Distance Measuring Equipment (VOR and DME). There are over 1,000 VORs spread across the United States. In addition to providing position information, these navigational aids are used to define airways, which are based on the straight lines from VOR to VOR. These routes provide structure for the air traffic control system. They help controllers predict the future flight path of aircraft. En route navigation aids allow pilots to know their location when they cannot see the ground. The precision landing aids, called Instrument Landing Systems (ILS), guide pilots to runway ends in very limited visibility. There are over 1,000 ILS installed in the United States. They are essential to airlines for maintaining schedule reliability during poor weather. Figure 10 shows the roadmap for navigation aids.

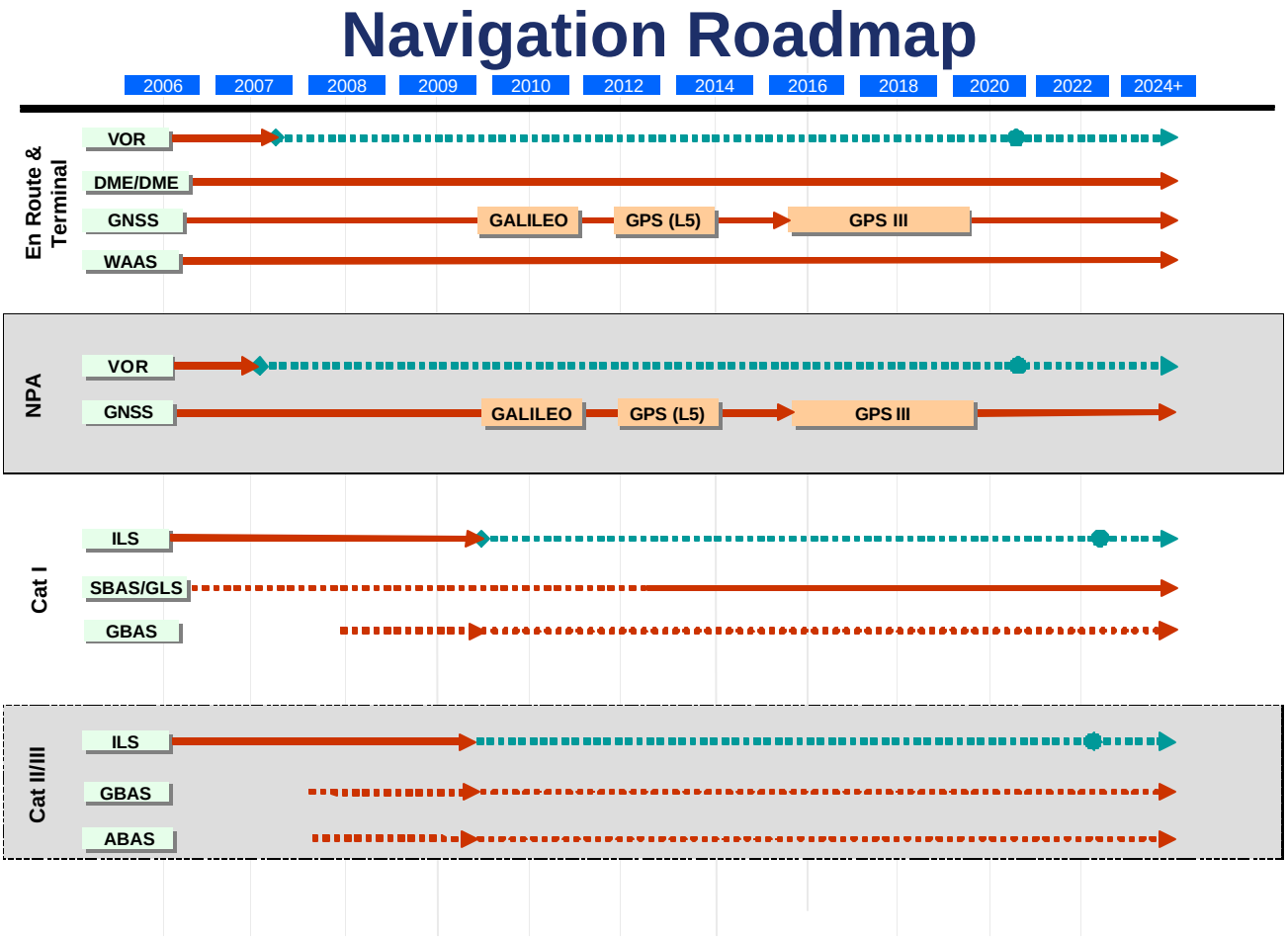


Figure 10 Navigation Roadmap

Figure 11 shows the future capital investments for navigation systems included in the CIP.

FAA future budget projections are not released to the public.

Figure 11 Expenditures in the Navigation Functional Area

Present plans call for a reduction from 1,000 VORs to about 500 systems, which is the minimum operational network. Reducing the VOR/DMEs to 500 assumes that GPS will come into broader use within the NAS, and the remaining VORs will serve as a back up for GPS. Pilots need back ups because some aircraft will not be equipped with GPS navigation receivers, and occasionally GPS cannot provide an accurate fix. Back up navigation systems are also needed in case of a GPS failure, either loss of the signal or failure of the aircraft equipment that receives and processes that signal.

The FAA is installing low power DMEs near airports to support recommendations of the Civil Aviation Safety Team to provide improved precision landing guidance to aircraft. As part of that program, the DME will replace a portion of the outer markers used with the Instrument Landing Systems. The outer markers provide a signal to the pilot as his aircraft passes over a fixed point on approach to an airport to verify that the aircraft is on the proper glide slope for landing.

There are over 1000 Instrument Landing Systems (ILS) currently in operation. We install a limited number of new ILSs every year to provide precision approaches to newly constructed runways and to provide approach guidance at existing runways which qualify because of increased operations. Precision approaches supported by GPS augmented with Wide Area Augmentation System or Local Area Augmentation System corrections may eventually replace some ILSs; however, the technology has not reached the stage where these approaches can be used in place of an ILS. We will maintain the existing and newly installed ILSs over the period covered by the roadmap.

An ILS requires several other supporting systems to be usable for precision approaches. Runway lights and approach lights must be installed to support ILS installed at new runways. Runways with precision approach guidance also have visibility detectors that measure visibility on the runway, so pilots know whether it is above minimum visual requirements for an ILS approach. Existing lighting and visibility systems associated with ILS must be maintained and upgraded.

4.2.5 Weather Systems

Weather information is essential to aviation. Pilots need to know the effect winds aloft will have on their speed; whether or not there will be sufficient visibility for them to land at their destination airport; and whether severe weather will affect the flight. Thunderstorms and turbulence can damage aircraft and cause injuries to passengers. The FAA has a significant role in collecting weather data and distributing it and National Weather Service information to aviators.

There are two major categories of weather information systems. The first is the weather sensors that measure several atmospheric parameters including: temperature, wind speed and direction, relative humidity, and cloud heights. Sensors provide real time information to air traffic facilities and to centralized weather forecasting systems. The second category of weather systems is the weather display systems, which process weather data and provide visual representations of weather patterns. An advanced feature of some systems is that they project the future movement of weather affecting operations. The first weather roadmap (Figure 12) shows the current and planned status of weather sensors.

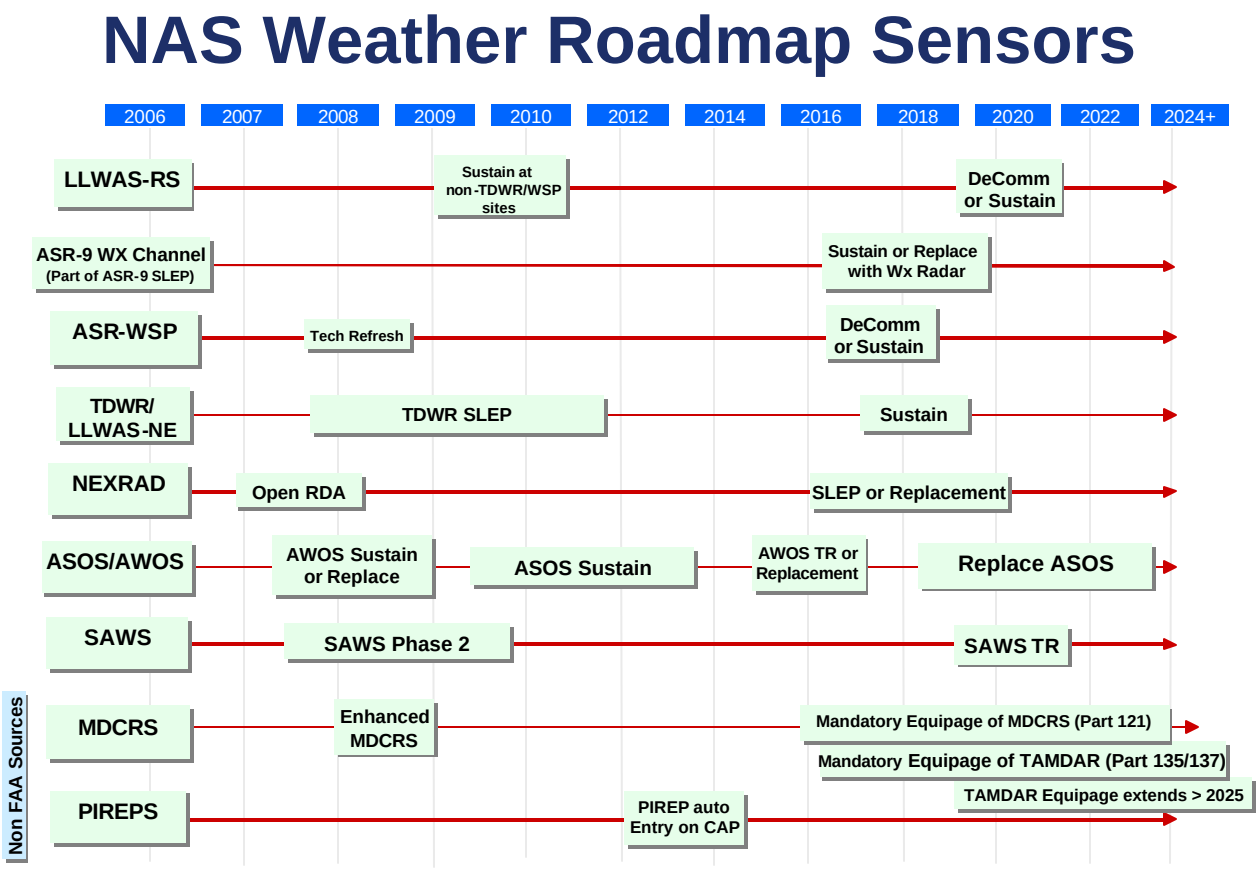


Figure 12 Weather Sensor Roadmap

There are three different sensors that detect wind shear, which is a significant hazard to landing aircraft. The most sophisticated is the Terminal Doppler Weather Radar (TDWR). There are 47 of these radars and most are located about 10 miles from a runway end. Using Doppler technology, the radars can detect the rapid changes in wind speed and direction that increase hazards for an aircraft approaching a runway. For medium-sized airports, a lower cost alternative is the Weather System Processor (WSP), which interprets data from the terminal surveillance radar to identify wind shear. To supplement these radar systems, there are wind sensors that measure wind direction and velocity at six to ten points around the runways. The wind sensors and the associated computer systems that determine whether there are significant changes in the wind at different locations near the airport are called the Low-Level Wind Shear Alerting System (LLWAS). The LLWAS serve locations that do not have radar as well as locations where they supplement the radars with point specific wind measurements to verify the location of any existing wind shears. The roadmap shows that all these vital safety systems will remain in place through the planning period, but all will need modernization to control maintenance costs and maintain availability.

The Automated Surface Observing Systems (ASOS) and other variants such as the Automated Weather Observing System (AWOS) and the Stand Alone Weather Sensing (SAWS) system, have up to 14 sensors that measure weather data. These systems feed data directly to air traffic control facilities and support automated broadcast of weather information to pilots. They also provide regular updates for the forecast models that predict future weather problems. These sensors will remain in operation and will be upgraded to sustain and improve the quality of weather observations. Snow and ice can affect the accuracy of observations, and there are several improvements to these systems that can minimize the effect of ice and snow.

The Meteorological Data Collection and Reporting System (MDCRS) and other non-FAA systems collect data from aircraft in flight. The winds and humidity at high altitudes are very useful for forecasting movement and intensity of weather systems. Sensors on the aircraft measure the outside air temperatures and water content of the atmosphere and combine that information with the wind computed in the aircraft navigation system and radio this information to the ground stations. Using aircraft to report weather expands the number of observations available to meteorologists and improves their forecasts.

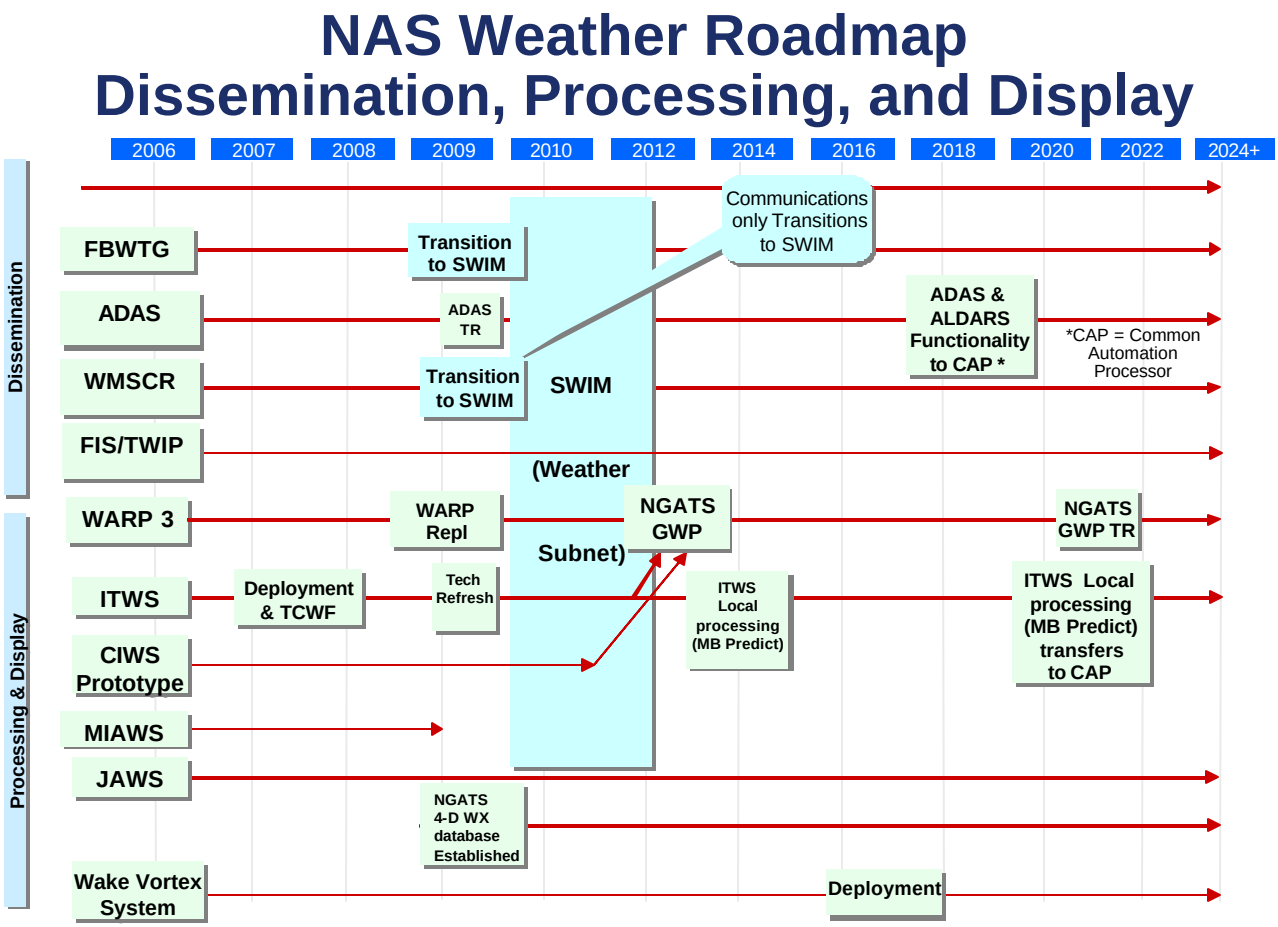


Figure 13 Weather Dissemination, Processing and Display Roadmap

Figure 14 shows the planned expenditures included in the CIP for weather sensors and weather dissemination and processing systems.

FAA future budget projections are not released to the public.

Figure 14 Expenditures in the Weather Functional Area

Weather distribution and display systems consolidate weather information and send it to the National Weather Service and air traffic computer systems. Weather display systems compile radar data and other observations to produce a visual display of weather location, including

color-coded information on the intensity of any severe weather. The weather information can also be shown on controllers' displays and at various weather forecaster workstations. It provides an immediate picture of the current weather and the data for forecasting the future location and intensity of weather systems.

The Weather and Radar Processor (WARP) used in en route control facilities gets its information from the National Weather Service's Next Generation Weather Radars (NEXRAD); from automated weather sensors located at airports; and from other sources such as weather satellites. It compiles the information for interpretation by the Center Weather Service Unit forecasting stations. Planning has begun to modernize the existing WARP processors, which are becoming obsolete.

The central weather distribution facilities called the Weather Message Switching Centers (WMSCR) must be maintained until the ATO transitions to the System Wide Information Management (SWIM) network. The two WMSCR facilities collect weather data and transmit it to FAA operational facilities. The FBWTG (FAA Bulk Weather Telecommunications Gateway) is a similar link between the National Weather Service and the Air Traffic Control System Command Center. Since weather information is time critical, these facilities must function in near real time and have high reliability to ensure important weather information reaches the en route and terminal facilities that will be impacted.

The AWOS Data Acquisition Service (ADAS) radio links transmit weather data from automated sensors to FAA facilities. These radio links will eventually transmit data to SWIM. We plan to upgrade this system in 2010.

The Integrated Terminal Weather System (ITWS) consolidates weather information from automated sensors and surrounding radars to provide real time weather information for terminal control facilities. The system also projects movement of severe weather systems up to 20 minutes into the future. Tower and Terminal Radar Approach Control (TRACON) controllers use the information to make more precise estimates of when runways should be closed and subsequently reopened. They also use the information to plan for a switch in terminal arrival patterns to avoid excessive maneuvering as aircraft approach an airport. The ITWS will be installed at 22 airports.

We are developing two enhancements to weather systems, but we have not decided whether to implement them. The Corridor Integrated Weather System (CIWS) portrays weather along busy corridors between major cities and helps controllers recommend altitudes and flight paths that help pilots avoid severe weather. The Medium Intensity Airport Weather System (MIAWS) is a weather radar processor that displays enhanced weather data at medium activity airports. It is less expensive than TDWR or WSP, and it uses data from NEXRAD radars to improve prediction of weather hazards for airports that do not qualify for TDWR or WSP. In 2006 we will decide whether to deploy these systems.

4.3.6 Facilities

The ATO has thousands of manned and unmanned facilities, which we must modernize regularly. The largest facilities are the 20 en route centers, which house hundreds of employees. The centers also house the equipment needed to control aircraft flying in the en route airspace between terminal control areas. The other operational facilities with significant staffing are the over 500 tower and TRACON facilities that control traffic departing and arriving at airports. There are also several thousand unmanned facilities that contain radar equipment, remote communication links, and navigational aids. We need significant funding to upgrade older facilities and replace facilities that are damaged.

At the en route centers, automation equipment is continually being upgraded, and the centers must be renovated to accept the new equipment. Another major program replaces the electrical power generating and conditioning equipment that ensures that power surges do not damage the sensitive electronic equipment. Back up generators provide electrical power if commercial power is lost. Major renovations include upgrading heating and air-conditioning systems and replacing roofs. We expect to spend at a level consistent with previous years to keep these facilities modernized.

Between $100 and $200 million is spent annually to construct new towers and renovate existing towers and terminal radar control (TRACON) facilities. As airports grow and build new runways and hangers, the old towers no longer have clear sight lines to the operating area, and we need to build new taller towers. When the number of controller workstations is increased to accommodate increased traffic, many towers and TRACONs do not have adequate interior space to handle the new equipment and controller positions necessary to manage the air traffic at that facility. This can require either a new facility or extensive modernization. As with the centers, there are several towers at which we need to modernize infrastructure such as heating and air conditioning systems and elevators.

The FAA is evaluating potential avenues for controlling facility costs in the future. One possibility would be to optimize the network of air traffic control facilities. It may be feasible to reduce the number of facilities or consolidate some automation functions, so operating costs can be reduced. Studies are underway to determine if alternative configurations of air traffic facilities or reducing the number of facilities would improve productivity and save operating costs.

There are several navigation and surveillance systems installed on and in the area near the larger airports. They are linked to the tower and maintenance workstations by airport cable loops. These loops provide operating status of the systems and allow adjustments to be made from the control facilities. Because they are buried in the ground, the cables deteriorate and need to be replaced. We are replacing them with optical fiber, which has more capacity and a longer life.

Figure 15 shows the planned expenditures for facilities projects that contribute to modernizing the air traffic control system.

FAA future budget projections are not released to the public.

Figure 15 Expenditures in the Facilities Functional Area

4.2.7 Support Contracts and ATO Employee Costs

The FAA budgets in a single line item for the costs of its employee who support capital investment programs. These employees supervise installing new equipment, maintain documentation, test new equipment, and perform support functions for capital investment. These costs are budgeted on an annual basis at the request of Congress to avoid large unobligated balances that would occur if they were included in project funding requests. This work is essential for successfully implementing new and upgraded equipment. On-site engineers and technicians ensure that the equipment is installed properly and that installation doesn't interfere with on-going air traffic control functions. Documentation improves efficiency when making repairs or upgrades and reduces the time spent planning for future modernization.

The FAA has several support contracts that help our employees plan modernization of existing systems; manage the transition to new equipment; and oversee the installation of that new equipment. The System Engineering and Technical Assistance (SETA) and the Center for Advanced Aviation System Development (CAASD) contracts help us plan modernization and simulate the impact on air traffic of implementing new concepts and new equipment. The Technical Services Support Contract (TSSC) provides field engineers that oversee the site preparation for and installation of new equipment. These engineers and technicians help the FAA keep installation on schedule for the many projects with equipment deliveries. The National Implementation Support Contract (NISC) helps plan our transition to new equipment. Partly this requires developing detailed schedules for preparing facilities to receive new equipment and partly it's developing the engineering drawings to depict physical changes in electrical wiring, plumbing, and physical layout for the new equipment. Since air traffic control functions must continue during the transition, we must plan carefully to have preliminary steps fully completed before installation begins so we minimize any disruption as we transition to new critical control equipment.

Another category of support contracts covers leasing, modifying or modernizing buildings to house engineering and training functions. FAA also leases or purchases computer automation to assist those engineering functions. Examples include leases for the Mike Monroney Aeronautical Center and licenses for software used for the William J. Hughes Technical Center. Also needed is the support contract to provide spectrum engineering to allocate radio frequencies and to prevent interference with existing frequencies. These projects help sustain the infrastructure for testing new equipment and help to analyze system needs and develop the system of the future. We also have environmental projects to remove asbestos, improve fire/life safety, prevent fuel tanks from leaking and clean up environmental pollution.

Figure 16 shows the planned expenditures for the specific mission support projects that will help us modernize the air traffic control system.

FAA future budget projections are not released to the public.

Figure 16 Expenditures in the Mission Support Functional Area

5 Conclusion

Although there have been short periods of decline in air travel and the aviation operations that support that travel, the long-term trend for operations has been up, and we expect growth to continue. Growth will put pressure on the capacity at large airports, and it will require more runways and more sophisticated management of air traffic activity. We will need new and better equipment and procedures to accommodate the anticipated growth. Capital investment will play an important role in modernizing the NAS, so we can make new capacity available.

Annual business planning addresses the near-term considerations and the immediate steps necessary to accommodate growth. The Joint Planning and Development Office (JPDO) will develop the long-term vision for the future configuration of the air traffic control system. Near-term capital investment will address immediate needs, but continued support for capital improvements will be essential to ensure a smooth transition to the JPDO architecture and prepare the NAS for the future.

In the future we will have to balance investment between projects to add capacity and projects to reduce operating costs. New capacity is needed, but operating costs must also be reduced. This Capital Investment Plan shows the steps needed to both expand capacity to handle future travel demand and modernize facilities and equipment to control costs.

As the roadmaps show, we must make a large, coordinated effort to build a system that can handle future air travel demand and prevent increases in delays. We have begun work on some of the initiatives, but several important steps follow. Continuing to enhance the collaborative air traffic management technology program will improve the interaction between commercial carriers and the FAA and help reduce delays. The SWIM program will help us share information so those decisions will be more informed with real time information on system status. Introducing Automatic Dependent Surveillance and data link communication will improve efficiency and reduce workload. It will take these initial efforts and a continuing commitment to modernization to achieve the goal of building a system able to handle future growth. This CIP provides the roadmaps that define the more capable system envisioned and the systematic changes needed to implement the individual components of that system.

6 Appendices to the Capital Investment Plan

The CIP contains four appendices:

Appendix A
- Lists FAA strategic goals, objectives, and performance targets
- Associates CIP projects with strategic objectives and performance targets

Appendix B
- Provides CIP project descriptions and relationship of project to strategic goals
- Lists FY 2007–2011 — Performance Output goals
- Shows System Implementation Schedules

Appendix C
- Provides estimated expenditures 2007–2011 by Budget Line Item (BLI)

Appendix D
- Defines acronyms and abbreviations

Federal Aviation Administration

National Airspace System

Capital Investment Plan

Appendix A

Fiscal Years 2007 – 2011

(Page intentionally left blank)

APPENDIX A

GOAL MATRIX

This year's, Capital Investment Plan (CIP) projects have been connected to the goals, objectives and performance targets in the Federal Aviation Administration (FAA) Flight Plan 2006-2010. As such, Appendix A has been revised to reflect the alignment of projects with FAA goals and objectives consistent with the new FAA Flight Plan 2006-2010. In general, many FAA capital investments will contribute to more than one, goal, objective and performance target. Appendix A will reflect an alignment of that project to the goal, objective and performance target(s) where its contribution is most significant. Only CIP projects with Fiscal Year (FY) 2007-2011 funding are included in this Appendix.

For clarification, the following definitions are provided as general description of the elements of the FAA Flight Plan 2006-2010 and can be used in a systematic way to relate the objectives and performance targets to projects in the CIP.

BLI numbers with an X (i.e., 1A09X) are used to designate programs/projects that are not in the FY 2007 President's Budget (Facilities & Equipment). Accordingly, their inputs are reflected as follows:

- Programs/projects representing new starts or future programs not currently in the President's budget will report future year Performance Output Goals based on projected funding.

STRATEGIC GOAL

A general statement of the broad agency purpose in carrying out its mission, such as: "To achieve the lowest possible accident rate and constantly improve safety."

OBJECTIVE

A statement of a specific emphasis area that will contribute to the overall goal, such as: "Reduce the commercial airline fatal accident rate."

PERFORMANCE TARGET

A quantifiable measure of the improvement in a goal area that sets a target for specific improvements in outcomes that affect FAA customers, such as: "Reduce the airline fatal accident rate by 80 percent from the 1994-1996 baseline to a three-year rolling average rate of 0.010 per 100,000 departures by FY 2007".

1. STRATEGIC GOAL: INCREASED SAFETY

FAA Strategic Goal: To achieve the lowest possible accident rate and constantly improve safety.

- **FAA Objective 1:** Reduce the commercial airline fatal accident rate.
  - **FAA Performance Target 1:** Reduce the airline fatal accident rate by 80 percent from the 1994-1996 baseline to a three-year rolling average rate of 0.010 per 100,000 departures by FY 2007.
  - **FAA Performance Target 2:** Reduce the three-year rolling average fatal accident rate below 0.010 per 100,000 departures by FY 2010.

FY 2007 BLI	CIP #	CIP Name
1A01E	M42.01-00	Safer Skies – ATDP
2B02	W03.03-01	Terminal Doppler Weather Radar (TDWR) – SLEP
2B18	W09.01-00	WSP Technology Refresh / Product Improvement
2D06	N04.03-00	Approach Lighting System Improvement Program (ALSIP)
2E04A	M12.00-00	Aircraft Related Equipment Program
2E04B	M12.01-02	Aircraft Related Equipment – Airbus Simulator Replacement
3A02	A17.00-00	Aviation Safety Analysis System (ASAS)
3A08	A25.01-00	System Approach for Safety Oversight (SASO)
3A09	A26.01-00	Aviation Safety Knowledge Management Environment (ASKME)

- **FAA Objective 2:** Reduce the number of fatal accidents in general aviation.
  - **FAA Performance Target 1:** By FY 2009, reduce the number of general aviation and nonscheduled Part 135 fatal accidents to no more than 319 (from 385, which represents the average number of fatal accidents for the baseline period of 1996-1998).
  - **FAA Performance Target 2:** By FY 2009, reduce accidents in Alaska for general aviation and all Part 135 operations from the 2000-2002 average of 130 accidents per year to no more than 99 accidents per year.

FY 2007 BLI	CIP #	CIP Name
1A01D	M35.01-00	General Aviation/Vertical Flight Technology – ATDP
1A01G	W10.01-00	Wind Profiling and Weather Research Juneau
1A02A	M36.01-00	Safe Flight 21 – Alaska Capstone Initiative
1A02B	M08.31-00	Alaska MIH & Video Equipment – Alaska Weather Cameras
1A03	C20.03-00	Aeronautical Data Link – Flight Information Service (FIS)
1A10	S10.03-01	ADS-B NAS-Wide Implementation
2C02	A07.00-00	FSAS Operational and Supportability Implementation System (OASIS)
2C03A	F05.03-00	AFSS Facilities Sustainment
2C03B	F05.04-01	Alaska FSS Modernization

(Continued)

- **FAA Objective 2:** Reduce the number of fatal accidents in general aviation.

FY 2007 BLI	CIP #	CIP Name
2D03	N12.01-00	Wide Area Augmentation System (WAAS)
2D03	N12.01-06	Wide Area Augmentation System (WAAS) – Survey and Procedures
2D03X	N12.01-05	Wide Area Augmentation System (WAAS) – GLS Segment
2E07	C17.01-01	Alaskan NAS Interfacility Communications System (ANICS) Satellite Network – Phase II
2E07	C17.02-01	Alaskan NAS Interfacility Communications System (ANICS) Satellite Network – ANICS Modernization – Phase I
4A10A	A08.01-00	NAS Airspace System Resources – NAS Aeronautical Information Management Enterprise System (NAIMES)
4A10B	A08.01-01	NOTAMS Infrastructure / Distribution (NOTAM Distribution Program (NDP))

- **FAA Objective 3:** Reduce the risk of runway incursions.
  - **FAA Performance Target:** By FY 2010, reduce Category A and B (most serious) runway incursions to a rate of no more than 0.450 per million operations.

FY 2007 BLI	CIP #	CIP Name
1A01A	S09.02-00	Runway Incursion Reduction Program (RIRP) – ATDP
2B01	S09.01-00	Airport Surface Detection Equipment – Model X
2B15	S11.01-01	Runway Status Lights

- **FAA Objective 4:** Ensure the safety of commercial space launches.
  - **FAA Performance Target:** No fatalities, serious injuries, or significant property damage to the uninvolved public during licensed space launch and reentry activities.

FY 2007 BLI	CIP #	CIP Name
None	None	Currently no Facilities & Equipment project support this Target

- **FAA Objective 5:** Enhance the safety of FAA's air traffic systems.
  - **FAA Performance Target 1:** By FY 2010, reduce Category A and B (most serious) operational errors to a rate of no more than 3.18 per million activities.
  - **FAA Performance Target 2:** By FY 2010, apply Safety Risk Management to at least 22 significant changes in the NAS

FY 2007 BLI	CIP #	CIP Name
3B02B	M20.01-00	NAS Training – Equipment Modernization – Training Simulators

***** END OF INCREASE SAFETY STRATEGIC GOAL*****

2. STRATEGIC GOAL: GREATER CAPACITY

FAA Strategic Goal: Work with local governments and airspace users to provide capacity in the United States airspace system that meets projected demand in an environmentally sound manner.

- **FAA Objective 1:** Increase capacity to meet projected demand.
  - **FAA Performance Target 1:** Achieve an average daily airport capacity of 104,338 arrivals and departures per day by FY 2008 and maintain through FY 2010 at the 35 OEP airports.
  - **FAA Performance Target 2:** Commission as many as eight new runway projects, increasing the annual service volume of the 35 OEP airports by at least 1 percent annually, measured as a five-year moving average, through FY 2010.
  - **FAA Performance Target 3:** Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

FY 2007 BLI	CIP #	CIP Name
1A01B	M08.28-00	System Capacity, Planning, and Improvements – ATDP
1A01C	M08.29-00	Operations Concept Validation – ATDP
1A01F	M08.27-00	NAS Requirements Development – ATDP
1A01H	M08.28-02	Airspace Management Lab – ATDP
1A01I	M08.28-04	Airspace Redesign – ATDP
1A01J	M08.36-01	Wake Turbulence
1A04	C21.01-01	Next-Generation VHF A/G Communication System (NEXCOM) – Segment 1A
1A05	A24.03-00	Traffic Management Advisor (TMA) – Single Center
2A01	A01.10-01	En Route Automation Modernization (eRAM)
2A01	A01.10-02	En Route Automation Modernization (eRAM), Radar Position Tech Refresh – R Side Upgrades
2A02	A01.09-01	En Route Automation Program – En Route System Modification
2A03	W02.02-00	Next Generation Weather Radar (NEXRAD) – Open System Upgrades
2A04	W04.03-00	Weather and Radar Processor (WARP) – WARP Replacement
2A05	F06.01-00	ARTCC Plant Modernization/Expansion – ARTCC Modernization
2A07	C04.00-00	Radio Control Equipment (RCE)
2A07	C06.01-00	Communications Facilities Enhancement – Expansion
2A07	C06.03-00	Communications Facilities Enhancement – Air/Ground Communications RFI Elimination
2A07	C06.04-00	Communications Facilities Enhancement – UHF Replacement
2A08	S02.03.00	Secondary Surveillance – ATC Beacon Interrogator (ATCBI) Replacement
2A08	S02.03-02	Air Traffic Control Beacon Interrogator (ATCBI-6) – Beacon Only Buildings
2A09	S04.02-03	Long Range Radar (LRR) Program – LRR Improvements – Infrastructure Upgrades

(Continued)

- **FAA Objective 1:** Increase capacity to meet projected demand. (continued)

FY 2007 BLI	CIP #	CIP Name
2A10 / 2B13/ 2B14/ 2D05	M08.05-00	Regional Projects
2A11	W07.01-00	Integrated Terminal Weather System (ITWS) – ITWS Development/Procurement
2A16	A01.12-02	En Route Communications Gateway – Technology Refresh
2A17	C01.02-01	Voice Switching and Control System (VSCS) – Tech Refresh
2B03	A04.01-00	Standard Terminal Automation Replacement System (STARS) – Development and Procurement
2B03	A04.01-01	Standard Terminal Automation Replacement System – Technology Refresh
2B03	A04.01-02	Standard Terminal Automation Replacement System – Terminal Enhancements
2B04A	A03.04-01	Terminal Sustainment
2B04B	A01.11-01	Flight Data Input/Output (FDIO) Replacement
2B04C	A03.04-03	Electronic Flight Strip System (EFSTS)
2B05	F01.02-00	ATCT/TRACON Establish/Sustain/Replace – ATCT/TRACON Replacement
2B06	F01.01-00	ATCT/TRACON Establish/Sustain/Replace – ATCT/TRACON Modernization
2B06	F02.10-00	Large TRACONs - Advanced Facility Planning
2B07	C05.02-00	Terminal Voice Switch Replacement (TVSR)
2B09	S03.01-04	ASR-9/Mode S – Service Life Extension Program – Phase 1A
2B09	S03.01-05	ASR-9/Mode S – Service Life Extension Program – Phase 1B Transmitter Mod
2B10	S03.02-01	Terminal Digital Radar (ASR-11) – ASR-7/ASR-8 Replacement, DOD Takeover, New establishments
2B10X	S03.02-04	Terminal Radar (ASR) Program – ASR-11 – Tech Refresh
2B11	F04.01-00	DOD/FAA ATC Facility Transfer/Modernization – Original Program
2B11	F04.02-00	DOD Base Closures
2B12	S08.00-00	Precision Runway Monitor (PRM)
2B12	S08.01-01	Precision Runway Monitor (PRM) – Multilateration Technology
2B16	A04.05-00	Terminal Automation Modernization Replacement (TAMR) – Phase 2
2B16X	A04.05-02	Terminal Automation Modernization Replacement (TAMR) – Phase 2 Tech Refresh
2B17	C05.03-01	NAS Voice Switch
2C01	W01.02-02	Automated Surface Observing System (ASOS) – Pre-Planned Product Improvements (P3I)
2D01	N06.00-00	Very High Frequency Omni-directional Range (VOR) Collocated with Tactical Air Navigation (VORTAC)
2D02	N03.01-00	Instrument Landing Systems (ILS) – Instrument Landing Systems (ILS)

(Continued)

- **FAA Objective 1:** Increase capacity to meet projected demand. (continued)

FY 2007 BLI	CIP #	CIP Name
2D04	N08.02-00	Runway Visual Range (RVR) – Replacement/Establishment
2D07	N09.00-00	Distance Measuring Equipment (DME)
2D08	N04.01-00	Visual Navaids - Visual Navaids for New Qualifiers
2D09	A14.00-00	Instrument Approach Procedures Automation (IAPA)
2D10	N04.04-00	Visual Navaids – Sustain, Replace, Relocate
2E02A	F12.00-00	FAA Buildings & Equipment Sustain Support – Modernize/ Improve
2E02B	F12.01-01	Seismic Safety Risk Mitigation
2E06	F10.00-00	Airport Cable Loop Systems Sustained Support
2E09	F11.00-00	Power Systems Sustained Support
3A04	M17.00-00	Test Equipment Modernization/Replacement
4A02	M08.06-00	Program Support Leases
4A06	M15.01-00	NAS Spectrum Engineering Management – NAS Spectrum Engineering Sustained Support
4A06	M15.02-00	NAS Spectrum Engineering Management – Frequency Interference Support/Resolution
4A06	N12.03-01	GPS Signal Monitoring

- **FAA Objective 2:** Increase or improve aviation capacity in the eight major metropolitan areas and corridors that most affect total system delay. For FY 2006, those areas are: New York, Philadelphia, South Central Florida, Chicago, Washington/Baltimore, Atlanta, Los Angeles Basin, and San Francisco Bay Area.
  - **FAA Performance Target 1:** Achieve an average daily airport capacity for the eight major metropolitan areas of 68,750 arrivals and departures per day by FY 2010.

FY 2007 BLI	CIP #	CIP Name
None	None	Currently no Facilities & Equipment project support these Targets

- **FAA Objective 3:** Increase on-time performance of scheduled carriers.
  - **FAA Performance Target 1:** Through FY 2010, maintain an 87.4 percent on-time arrival for all flights arriving at the 35 OEP airports, no more than 15 minutes late due to NAS related delays.

FY 2007 BLI	CIP #	CIP Name
1A09	A27.01-00	System-Wide Information Management (SWIM)
2A06	A05.01-06	Air Traffic Management (ATM) – TFM Infrastructure – Infrastructure Modernization
2A06	A05.01-10	Collaborative Air Traffic Management Technologies (CATMT)
2A06	A05.05-01	Route Availability Planning Tool (RAPT)
2A13	A10.03-00	Advanced Technologies and Oceanic Procedures (ATOP)
2D11	N04.02-00	Visual Navaids – Replace Visual Approach Slope Indicator (VASI) with Precision Approach Path Indicator (PAPI)
2E03	M08.04-00	Air Navigation Aids Facilities – Local Projects
4A09	M03.02-00	CIP Systems Engineering & Technical Assistance – MITRE

- **FAA Objective 4:** Address environmental issues associated with capacity enhancements.
  - **FAA Performance Target 1:** Reduce the number of people exposed to significant noise by 1 percent per year through FY 2010, as measured by a three-year moving average, from the three-year average for calendar years 2000-2002
  - **FAA Performance Target 2:** Improve aviation fuel efficiency per revenue plane-mile by 1 percent per year through FY 2010, as measured by a three-year moving average, from the three-year average for calendar years 2000-2002

FY 2007 BLI	CIP #	CIP Name
None	None	Currently no Facilities & Equipment project support these Targets

*****END OF GREATER CAPACITY STRATEGIC GOAL*****

3. STRATEGIC GOAL: INTERNATIONAL LEADERSHIP

FAA Strategic Goal: Increase the safety and capacity of the global civil aerospace system in an environmentally sound manner.

- **FAA Objective 1:** Promote improved safety and regulatory oversight in cooperation with bilateral, regional, and multilateral aviation partners.
  - **FAA Performance Target 1:** By FY 2010, continue to reduce the five-year rolling average commercial air carrier fatal accident rate in key regions or countries experiencing substantial growth in aviation operations by 10 percent from the 2000-2005 baseline.
  - **FAA Performance Target 2:** Conclude at least eight (new or expanded) bilateral safety agreements that will facilitate an increase in the ability to exchange aviation products and services by FY 2010.
  - **FAA Performance Target 3:** Secure a yearly increase of 20 percent in external funding for international aviation activities from the United States and international government organizations, multilateral banks, and industry.

FY 2006 BLI	CIP #	CIP Name
None	None	Currently no Facilities & Equipment project supports this Objective and Performance Targets

- **FAA Objective 2:** Promote seamless operations around the globe in cooperation with bilateral, regional, and multilateral aviation partners.
  - **FAA Performance Target 1:** By FY 2010, expand the use of Global Positioning System-based technologies and procedures to five more countries.

FY 2007 BLI	CIP #	CIP Name
None	None	Currently no Facilities & Equipment project supports this Objective and Performance Targets

*****END OF INTERNATIONAL LEADERSHIP STRATEGIC GOAL*****

4. STRATEGIC GOAL: ENVIRONMENTAL STEWARDSHIP

DOT Strategic Goal: Reduce pollution and other adverse effects of transportation and transportation facilities.

- **DOT Objective 1:** Adopt transportation policies and promote technologies that reduce or eliminate environmental degradation.

FY 2007 BLI	CIP #	CIP Name
2B08	F13.03-00	Fire Life Safety for Air Traffic Control Tower and Environmental and Occupational Safety and Health Compliance
2E01	F13.01-00	NAS Facilities OSHA & Environmental Standards Compliance – Fuel Storage Tanks
3A01	F13.02-00	NAS Facilities OSHA & Environmental Standards Compliance – Environmental Cleanup / HAZMAT

*****END OF ENVIRONMENTAL STRATEGIC GOAL*****

5. STRATEGIC GOAL: HOMELAND AND NATIONAL SECURITY

DOT Strategic Goal: Balance homeland and national security transportation requirements with the mobility needs of the Nation for personal travel and commerce.

- **DOT Objective 1:** Support and implement U.S. security strategies and plans related to transportation.

FY 2007 BLI	CIP #	CIP Name
3A05	C18.00-00	National Airspace System Recovery Communications (RCOM)
3A06	F24.00-00	Facility Security Risk Management
3A07	M31.00-00	NAS Information Security – Information Systems Security

*****END OF SECURITY STRATEGIC GOAL*****

6. STRATEGIC GOAL: ORGANIZATIONAL EXCELLENCE

FAA Strategic Goal: Ensure the success of the FAA's mission through stronger leadership, a better trained and safer workforce, enhanced cost-control measures, and improved decision-making based on reliable data.

- **FAA Objective 1:** Make the organization more effective with stronger leadership, increased commitment of individual workers to fulfill organization-wide goals, and a better prepared, better trained, safer, diverse workforce.
  - **FAA Performance Target 1:** Increase Employee Attitude Survey scores in the areas of management effectiveness and accountability by at least 5 percent by FY 2010.
  - **FAA Performance Target 2:** By FY 2010, reduce the time it takes to fill mission-critical positions by 25 percent over the FY 2003 baseline
  - **FAA Performance Target 3:** Reduce the total workplace injury and illness case rate to no more than 2.85 per 100 employees by the end of FY 2006, representing a cumulative 3 percent annual reduction from the FY 2003 baseline (3.12) set in the Safety, Health and Return to Employment (SHARE) Presidential Initiative.
  - **FAA Performance Target 4:** Reduce grievance processing time by 25 percent by FY 2010.
  - **FAA Performance Target 5:** Maintain air traffic controller annual hiring within 5 percent of the Air Traffic Controller Workforce Hiring Plan

FY 2007 BLI	CIP #	CIP Name
2A14A	M29.00-00	ATOMS Local Area/Wide Area Network
3B02A	M20.00-00	National Airspace System (NAS) Training – Equipment Modernization
3B03	M10.00-00	Distance Learning

- **FAA Objective 2:** Improve financial management while delivering quality customer service.
  - **FAA Performance Target 1:** Develop and implement a centrally managed cost control and productivity improvement program to lead the agency in reducing costs.
  - **FAA Performance Target 2:** Each FAA organization will contribute at least one measurable and significant cost reduction and/or productivity improvement activity each year, including but not limited to, cost efficiencies in the areas of:

    Strategic sourcing for selected products and services

    Complete consolidation of facilities and services such as accounting offices, real property management, helpdesks, and Web services; and

    Elimination or reduction of FAA use of obsolete technology by either removing from service or transferring from federal operation 100 Navaids.
  - **FAA Performance Target 3:** Obtain an unqualified opinion on the agency's financial statements (Clean audit with no material weaknesses) each fiscal year.

(Continued)

FY 2007 BLI	CIP #	CIP Name
1A01K	M46.01-01	ATO Strategy and Evaluation – ATDP
1A01L	F13.04-01	Energy Cost Savings
1A01M	M45.01-00	Market Based Competitive Sourcing
1A06/ 1A07	F14.00-00	System Support Laboratory Sustained Support
1A08	F16.00-00	William J. Hughes Technical Center Infrastructure Sustainment
2A12	C26.01-00	FAA Telecommunications Infrastructure
2A14B	M29.01-00	Schedule Optimization Tool
2B19	M07.02-00	NAS Infrastructure Management System (NIMS) – Phase 2
2B19X	M07.02-01	NAS Infrastructure Management System (NIMS) – Phase 2 Tech Refresh
2E05	F17.00-00	Computer Aided Engineering Graphics (CAEG) Replacement
2E08	F26.01-01	Decommissioning
3A03	M21.04-01	Logistics Center Support System (LCSS)
3B01	F18.00-00	Aeronautical Center Infrastructure Modernization
4A01A	M03.01-00	CIP Systems Engineering & Technical Assistance – SETA and Other Contractors
4A01B	M08.01-00	Provide ANF/ATC Support (Quick Response)
4A03	M05.00-00	NAS Regional/Center Logistics Support Services
4A04	F19.00-00	Mike Monroney Aeronautical Center – Leases
4A05	M22.00-00	NAS Implementation Support Contract (NISC)
4A07	M02.00-00	Technical Support Services Contract (TSSC)
4A08	M08.14-00	Resource Tracking Program (RTP)

FAA Objective 3: Make decisions based on reliable data to improve our overall performance and customer satisfaction.

- **FAA Performance Target 1:** By FY 2008, 90 percent of major system acquisition investments are within 10 percent of annual budget, and maintain through FY 2010.
- **FAA Performance Target 2:** By FY 2008, 90 percent of major system acquisition investments are on schedule and maintain through FY 2010.
- **FAA Performance Target 3:** Increase agency scores on the American Customer Satisfaction Index.
- **FAA Performance Target 4:** Achieve zero cyber security events that disable or significantly degrade FAA services

FY 2007 BLI	CIP #	CIP Name
1A01N	M47.01-01	Dynamic Capital Planning

*****END OF ORGANIZATIONAL EXCELLENCE STRATEGIC GOAL*****

Federal Aviation Administration

National Airspace System

Capital Investment Plan

Appendix B

Fiscal Years 2007 – 2011

(Page intentionally left blank)

APPENDIX B

DETAILED PROGRAM PLAN DATA

LINKING FAA CIP PROJECTS TO GOALS

As stated in Appendix A, this year's Capital Investment Plan (CIP) projects are connected to the goals, objectives, and performance targets in the FAA Flight Plan 2006-2010. Since projects are linked to a single objective, the data provided in Appendix B describes how these projects contribute to the performance targets under those objectives.

FORMAT

Appendix B is organized by budget line item (BLI) consistent with the President's Budget to Congress for fiscal year (FY) 2007. Several CIP projects may be included in one BLI. In those cases when all of the CIP projects pertain to one specific purpose, they are grouped. However, when the CIP projects have different purposes, they are described with separate CIP entries.

Programs/projects in Appendix B contain a Program Description and Relationship to Performance Target description. FY 2007 Performance Output Goals and FY 2008-2011 Performance Output Goals for all Facilities and Equipment (F&E) funded CIP projects are reported as outlined below.

BLI numbers with an X (i.e., 1A09X) are used to designate programs/projects that are not in the FY 2007 President's Budget (Facilities & Equipment). Accordingly, their inputs are reflected as follows:

- Programs/projects representing new starts or future programs not currently in the President's budget will report future year Performance Output Goals based on projected funding.

CIP Programs/projects are required to reflect FY 2007-2011 Performance Output Goals, with the exception of the following:

- Programs/projects that do not exceed $5M annually.
- Programs/projects that fund support contracts (such as CAASD, SETA, NISC) or fund program support leases.

Where, 'None' is reflected in the 2007-2011 Performance Output Goals sections, it denotes that no funding was allocated for that fiscal year.

EXAMPLE

The following example illustrates how the project data provided is used to support the FAA Flight Plan Goal, Objective, and Performance Target, along with a sample format of CIP project inputs:

PROGRAM DESCRIPTION

ASDE-X is a modular surface surveillance system that processes multiple radar sources, multilateration, and Automatic Dependent Surveillance-Broadcast (ADS-B) sensor data to provide seamless airport movement area coverage and aircraft identification to air traffic controllers. ASDE-X is being deployed to airports with no surface surveillance systems and….

RELATIONSHIP OF PROGRAM TO FAA STRATEGIC GOAL, OBJECTIVE, AND PERFORMANCE TARGET

- **FAA Strategic Goal – Increased Safety.**
- **FAA Objective 3 –** Reduce the risk of runway incursions.
- **FAA Performance Target 1 –** By FY 2010, reduce Category A and B (most serious) runway incursions to a rate of no more than 0.450 per million operations.

RELATIONSHIP TO PERFORMANCE TARGET

The ASDE-X system provides air traffic controllers with a visual representation of the traffic situation on the airport surface movement area and arrival corridors in the form of aircraft and vehicle position information and flight identifications or call signs. This increased awareness of the situation on the airport surface movement area is essential in reducing runway collision risks…

PROGRAM PLAN FY 2007 – PERFORMANCE OUTPUT GOALS

- Achieve Operational Readiness Date (ORD) at 4 out of 35 ASDE-X sites.

SYSTEM IMPLEMENTATION SCHEDULE

Within this section system deployment and operational period from 2005 through 2015 for major system acquisitions will be graphically reflected. For example:

Air Traffic Control Beacon Interrogator - Model 6 (ATCBI-6)

First site ORD: July 2002 -- Last site ORD: November 2008

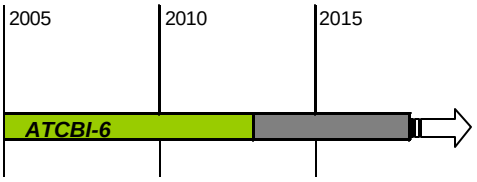


Table of Contents

ACTIVITY 1: ENGINEERING, DEVELOPMENT, TEST, AND EVALUATION

1A01, ADVANCED TECHNOLOGY DEVELOPMENT AND PROTOTYPING

FY 2007 Request $45.1M

- A, Runway Incursion Reduction Program (RIRP) – ATDP, S09.02-00
- B, System Capacity, Planning, and Improvements – ATDP, M08.28-00
- C, Operations Concept Validation – ATDP, M08.29-00
- D, General Aviation / Vertical Flight Technology – ATDP, M35.01-00
- E, Safer Skies – ATDP, M42.01-00
- F, National Airspace System Requirements Development – ATDP, M08.27-00
- G, Juneau Airport Wind System (JAWS), Alaska Weather Research, W10.01-00
- H, Airspace Management Lab – ATDP, M08.28-02
- I, Airspace Redesign – ATDP, M08.28-04
- J, Wake Turbulence, M08.36-01
- K, ATO Strategy and Evaluation – ATDP, M46.01-01
- L, Energy Cost Savings, F13.04-01
- M, Market Based Competitive Sourcing, M45.01-00
- N, Dynamic Capital Planning, M47.01-01

A, RUNWAY INCURSION REDUCTION PROGRAM (RIRP) – ATDP, S09.02-00

Program Description

The RIRP provides for continued research, development, and operational evaluation of technologies to increase runway safety. In accordance with standing National Transportation Safety Board recommendations and initiatives, research emphasis is on technologies that provide direct safety warnings to pilots and aircrews and that can be applied cost effectively at small to mediumairports. Additionally, the program explores alternative small airport surface detection technology and the application of these technologies toward pilot, controller and vehicle operator situational awareness tools. When appropriate, solutions are prototyped and tested in an operational setting to validate their technical performance and operational effectiveness.

The RIRP directly supports FY2005-2009 Flight Plan objectives which call for the continued development, testing and deployment of Runway Status Lights (RWSL) at Airport Movement Area Safety System (AMASS) and Airport Surface Detection Equipment – model X (ASDE-X) airports. This initiative is presently underway with the operational evaluation of ASDE-X-driven RWSL at Dallas-Ft. Worth airport. Additional test sites must be established to evaluate RWSL under specific airport and surveillance system configurations (e.g. ASDE-3/AMASS) and thus satisfy the specified Flight Plan initiative. By way of example, airport configuration variants that need to be developed and evaluated are intersecting runways, closely spaced parallels, and Land and Hold Short Operations.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Increased Safety.**
- **FAA Objective 3 –** Reduce the risk of runway incursions.
- **FAA Performance Target 1 –** By FY 2010, reduce Category A and B (most serious) runway incursions to a rate of no more than 0.450 per million operations.

Relationship to Performance Target

Reducing the risk and severity of runway incursions is a safety goal specifically outlined in the FAA Flight Plan. Accordingly, RIRP is developing and evaluating a RWSL system for ASDE-X and AMASS airports. RWSL is intended to address the runway safety risk that remains at the 59 busiest airports. Current analyses project that a risk of 242 fatalities resulting from runway accidents during the period 2005-2031 will remain after the deployment of AMASS and ASDE-X is completed. RWSL will add an additional layer of safety to reduce that risk. It will also contribute toward the reduction of Category A and B (most serious) runway incursions required by the Flight Plan to be reduced to 0.0390 per million operations by 2010.

Program Plans FY 2007 – Performance Output Goals

- Conduct surveillance system performance analyses required to support implementation of RWSL at three initial sites.
- Complete evaluation of RWSL performance for intersecting/converging runways.
- Complete evaluation of low cost surface surveillance alternatives for small airports.
- Complete evaluation of Final Approach Runway Occupancy Signal implementation alternatives.

Program Plans FY 2008-2011 – Performance Output Goals

- Continue to survey industry for emergent surface technologies to enhance runway safety.
- Initiate efforts to harmonize FAA approved surface technology enhancements with international standards.
- Complete perform analyses required to support implementation of RWSL throughout the NAS.
- Explore and evaluate two new emergent surface technologies to enhance runway safety.

B, System Capacity, Planning, and Improvements – ATDP, M08.28-00

Program Description

The System Capacity, Planning, and Improvements program identifies, evaluates, and formulates system capacity improvements for the NAS. This program sponsors airport capacity projects where experts from the FAA and industry are assembled in design teams to develop recommendations for improving capacity, increasing efficiency, achieving Agency targets, and reducing delays at specific airports. In addition to capacity design team studies, this program also supports the Agency's mission to measure and improve system performance. The Performance Data Analysis and Reporting System (PDARS) is a fully integrated performance measurement tool designed to help the FAA improve the NAS by tracking the daily operations of the air traffic control (ATC) system. The tracking and monitoring capabilities of PDARS support studies and analysis of air traffic operations. The Air Traffic Organization (ATO) Strategic Management Process is another measurement tool used to efficiently and effectively formulate and execute ATO strategies and objectives. The new large aircraft is also a highly visible activity within this program. Program support for the integration of the A380 into the NAS includes identifying the impact and developing proposed solutions to the planned introduction of the aircraft. Issues include evaluating the structural and operational modifications possibly required to accommodate this aircraft at U.S. airports.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 1 –** Achieve an average daily airport capacity of 104,338 arrivals and departures per day by FY 2008 and maintain through FY 2010 at the 35 OEP airports.

Relationship to Performance Target

This program will facilitate the design and improvements of new runways, airfield improvements, air traffic procedures, and other technological implementations to improve airport capacity and increase

efficiency. The Airport Design Teams evaluate alternatives for increasing capacity at specific airports that are experiencing or projected to experience significant flight delays. Capacity studies are the outcomes of these Design Teams and the studies provide recommendations and solution sets for improving capacity at the airport.

Program Plans FY 2007 – Performance Output Goals

- Continue evaluating alternatives for increasing capacity at specific airports that are projected to experience significant flight delays.
- Continue the development of PDARS with the installation of five Operational Evolution Plan (OEP) Ground Stations and two International Civil Aviation Organization sites.
- Provide facility and system level metrics to support Agency goals and objectives.
- Connect PDARS to Microprocessor En Route Automated Radar Tracking System.
- Provide a system that connects a common set of understandable corporate level performance targets and activities to daily operations.

Program Plans FY 2008-2011 – Performance Output Goals

- Connect PDARS to ASDE-X per deployment.
- Develop waterfall and support gate to gate performance analysis.
- Conduct ground movement analyses at U.S. airports to determine whether the operation of an new large aircraft would adversely impact the operation of other aircraft at that airport.
- Continue the development of the Future Airport Capacity Task reports to identify airports where additional capacity development may be necessary.
- Coordinate international cooperative efforts to improve system capacity and efficiency via the Design Team Programs Facilitation Group and the International Terminal Benchmark Study.
- Update the Airport Capacity Benchmark Report to analyze the number of flights that the 35 OEP airports can accommodate during optimum and reduced weather conditions.

C, OPERATIONS CONCEPT VALIDATION – ATDP, M08.29-00

Program Description

Operational Concepts are the first step in the Enterprise Architecture process as recommended by the Office of Management and Budget (OMB). This program develops and does initial validation of operational concepts that are key to ATO's modernization programs and the goals of the Next Generation Air Traffic System (NGATS) vision. The program office works with stakeholders to develop and maintain the RTCA "NAS Concept of Operations and Future Vision" and the International Civil Aviation Organization (ICAO) "ATM Global Concept", which are common reference points for modernization. It also provides the detailed second level concepts required for validation and requirements development. Examples of second level concepts include those for En Route, Traffic Flow Management (TFM), Surface, Communications, and Flight Data Management. Second level concepts identify the personnel and functional changes necessary for the ATO to provide customer service in ways that increase productivity and reduce net cost. This information helps the aviation community to develop new procedures and anticipate the changes in aircraft equipment to use with new technology being implemented in the NAS. Information developed includes system specification, roles and responsibilities, procedures, training, and certification requirements. The operational concept development and validation outputs provide for continued development and support of NAS modernization through: (1) concept/scenario development; (2) concept validation; (3) simulation and analysis; (4) system design; (5) metric development; and (6) modeling.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 1 –** Achieve an average daily airport capacity of 104,338 arrivals and departures per day by FY 2008 and maintain through FY 2010 at the 35 OEP airports.

Relationship to Performance Target

Developing the operational procedures early in the design phase of new equipment reduces the number of adaptations and allows users to prepare in advance for implementing technology that will increase capacity and reduce delays.

Program Plans FY 2007 – Performance Output Goals

- Conduct analyses and develop concept to support an end-to-end datalink strategy. Establish and validate the procedures for the utilization of datalink and its impact to the roles of the service provider.
- Conduct analyses and develop requirements for the next generation ICAO and US flight plan for the future builds of the FAA automation system (ERAM) and to support the definition of the NGATS Evaluator.
- Expand the concept development and validation to include increased opportunities to right size the ATC infrastructure for cost efficiency and productivity.
- Expand the concept development and validation of the multi-sector planner to identify opportunities for the utilization of new systems and capabilities.
- Continue RTCA support.

Program Plans FY 2008-2011 – Performance Output Goals

- Expand the gate-to-gate concept for increased coordination and integration of operations across time horizons in a net-centric System Wide Information Management environment including detail operation concepts for the NGATS Evaluator.
- Conduct analyses and develop concept to support the applications of the 4-D trajectory management and Airborne Separation Assistance System for all flight domain.
- Conduct analyses and develop concept for end-to-end traffic flow management.
- Continue RTCA support.
- Develop Criteria for evaluation of the standard controller platform to support reduced maintenance, training, and increased flexibility in establishing and implementing changes to controller roles and responsibilities.
- Develop Concept of Use for the advance flight deck.

D, GENERAL AVIATION / VERTICAL FLIGHT TECHNOLOGY – ATDP, M35.01-00

Program Description

The General Aviation/Vertical Flight Technology (GAVF) program conducts research to adapt satellite navigation and automatic dependent surveillance technology for use of light general aviation aircraft and helicopters in low altitude airspace; develops instrument approach and departure procedures for heliports; and evaluates cockpit technology to enhance pilot situational awareness. Procedures and regulations are developed to separate slower, highly maneuverable aircraft from transport aircraft, thereby improving safety while increasing overall system capacity and reducing delays. This program also evaluates techniques that enable aircraft operating under visual flight rules to navigate at a higher level of precision and awareness of the proximity of other aircraft and obstacles.

In FY 2007, the GAVF program will enhance simultaneous non interfering (SNI) operations demonstration in New York metropolitan area by adjusting existing SNI routes, creating new routes, and providing vertical guidance to the four point-in-space approaches to New York City (NYC) heliports. Data will be collected on benefits and costs of NYC SNI routes and Automatic Dependent Surveillance-B (ADS-B)

Flight Information Service (FIS) and Traffic Information Service (TIS) services. Terminal Instrument Procedures data will be collected for Wide Area Augmentation System (WAAS) helicopter lateral and vertical guidance steep angle instrument approaches and departures at heliports using improved lighting. Recommended criteria and inspector guidance material will be developed for performance-based visual flight rules routes. Tests will be conducted of low cost head-mounted-displays for enhanced and synthetic vision to determine the potential for improving precision approach minimums at heliports.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Increased Safety.**
- **FAA Objective 2 –** Reduce the number of fatal accidents in general aviation.
- **FAA Performance Target 1 –** By FY 2009, reduce the number of general aviation and nonscheduled Part 135 fatal accidents to no more than 319 (from 385, which represents the average number of fatal accidents for the baseline period of 1996-1998).

Relationship to Performance Target

The GAVF program contributes to the FAA's safety goal and performance target for general aviation accident reduction by expediting implementation of satellite navigation and automatic dependent surveillance technology for use by light general aviation aircraft and helicopters to reduce controlled flight into terrain accidents and midair collisions. To reduce landing accidents, instrument approaches to heliports will be developed using satellite navigation technology. The program also addresses the safety issue related to helicopters using the same routes, approaches, and airport runways as transport aircraft.

E, SAFER SKIES – ATDP, M42.01-00

Program Description

Safer Skies stems from a joint effort between the FAA and users to reduce aviation accident rates by analyzing causes of accidents, evaluating pilot actions, and evaluating equipment failures and then developing and implementing intervention strategies to prevent or reduce factors that cause most aviation accidents. The FAA and its partners (industry representatives, other Government agencies, and employee groups) have identified 12 Safer Skies focus areas, many interventions, and numerous safety activities. Commercial accident-reduction efforts involve six focus areas: Approach/Landing Accident Reduction (ALAR), Controlled Flight Into Terrain (CFIT), Uncontained Engine Failure, Runway Incursion, Loss of Control, and Commercial Weather Needs. General aviation focus areas include CFIT, Weather, Runway Incursion, Aeronautical Decision Making, Loss of Control, and Survivability as they pertain to general aviation aircraft. Each focus area contains many interventions; each intervention in turn may contain many additional specific activities and product deliverables.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Increased Safety.**
- **FAA Objective 1 –** Reduce the commercial airline accident rate.
- **FAA Performance Target 1 –** Reduce the airline fatal accident rate by 80 percent from the 1994-1996 baseline to a three-year rolling average rate of 0.010 per 100,000 departures by FY 2007. **FAA Performance Target 2 –** Reduce the three-year rolling average fatal accident rate below 0.010 per 100,000 departures by FY 2010.

Relationship to Performance Target

The Safer Skies program contributes to the FAA's safety goal by analyzing causes of accidents and developing and implementing intervention strategies to prevent or reduce factors that are the leading causes of aviation accidents. The recommendations support capital investments in the focus areas identified by Safer Skies, and these investments are approved based on an economic analysis that shows benefits will exceed costs.

Program Plans FY 2007 – Performance Output Goals

- Develop, for Mountain Pass Program, 25 additional approach charts and text information to allow safe navigation of mountain passes by general aviation.
- Support development of guidance for safe operation of unmanned aerial vehicles within the NAS.
- Support evaluation of helicopter emergency medical emergency services loss of control accident reduction.
- Continue analyzing the Traffic Alert and Collision Avoidance System for logic issues and implementation of revisions.
- Continue developing and implementing Safer Skies interventions for commercial and general aviation in areas of CFIT, Runway Incursion, ALAR, Loss of Control, and Weather focus areas.

Program Plans FY 2008 – 2011 Performance Output Goals

- Develop, for Mountain Pass Program, 25 approach charts and text information to allow safe navigation of mountain passes by general aviation.
- Continue Weather Programs, assessing existing and emerging weather-related technologies that affect commercial and general aviation operations.
- Continue support for development of guidance for safe operation of unmanned aerial vehicles within the NAS.
- Continue developing and implementing Safer Skies interventions for commercial and general aviation in areas of CFIT, Runway Incursion, ALAR, Loss of Control, and Weather focus areas.

F, NAS REQUIREMENTS DEVELOPMENT – ATDP, M08.27-00

Program Description

This program develops aviation weather requirements for the entire NAS. The purpose is to decrease avoidable weather delays in en route, terminal and oceanic operating areas. It evaluates new technologies and procedures to determine how to transition to more advanced capabilities that will expand NAS capacity and reduce delays caused by weather.

The funding supports contract services to analyze weather delays, prepare new concepts of operation, determine how these new concepts would be implemented, and develop plans to transition to new equipment and procedures. This often involves determining the steps necessary to implement technologies developed in research and development programs into operating systems in the NAS. It also requires coordination with the National Weather Service (NWS) and international organizations to ensure the new systems are compatible with NWS and international standards and operating procedures.

As part of developing requirements, this program must define performance standards, evaluate human factors, check that procedures are compatible with new technology, analyze impact on controller and pilot workloads, analyze maintainability of new equipment, and determine if new capabilities are consistent with the NAS Architecture.

In 2006, this program will evaluate the Collaborative Convective Forecast Product to determine whether it improves the ability to predict severe weather phenomena such as large thunderstorms and provides better warnings to controllers and pilots. It will also develop improved requirements for new weather systems and air traffic procedures. Concepts of use and implementation plans will be developed for three new applications that will move from research and development into operational use. This program will also provide weather impact analysis and determine future improvement opportunities in support of the Joint Program Development Office (JPDO) weather integrated product team (IPT) that is developing the Next Generation Air Transportation System (NGATS).

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 1 –** Achieve an average daily airport capacity of 104,338 arrivals and departures per day by FY 2008 and maintain through FY 2010 at the 35 OEP airports.

Relationship to Performance Target

This program facilitates the movement of aviation weather products that are designed to increase capacity from research and development into operational use. Additionally, it provides for studies that will establish metrics and determine weather provider needs. The studies will help determine opportunities to improve weather products, leading to increased capacity. It also facilitates policy development for long-range efforts to reinvent the air transportation system

G, JUNEAU AIRPORT WIND SYSTEM (JAWS), ALASKA WEATHER RESEARCH, W10.01-00

Program Description

This program aims to develop and deliver turbulence alert functionality to the Juneau International Airport, Alaska. Plans include algorithm tuning, operation of the prototype, and development of the end-state system. Juneau Area Wind System (JAWS) provides data intended for use by non-meteorologists. Wind data from JAWS will be directly fed to the Juneau Airport Traffic Control Tower (ATCT). It will also feed the Juneau Automated Flight Service Station (AFSS), Juneau National Weather Service (NWS), and the Anchorage Center Weather Service Unit (Anchorage Air Route Traffic Control Center (ARTCC)). Wind data will be available to other Alaska aviation users such as Alaska Airlines and at end-state to the general aviation community via the Internet.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Increased Safety.**
- **FAA Objective 2 –** Reduce the number of accidents in general aviation.
- **FAA Performance Target 2–** By FY 2009, reduce accidents in Alaska for general aviation and all Part 135 operations from the 2000-2002 average of 130 accidents per year to no more than 99 accidents per year.

Relationship to Performance Target

With improved information to the ATCT, aviation users may be able to avoid the hazards that are the major causes of accidents in Alaska.

Program Plan FY2007 – Performance Output Goals

- Operate JAWS prototype

Program Plans FY2008 – FY2011 Performance Output Goals

- Operate and maintain JAWS prototype.
- Complete safety mitigation activities.
- Procure supply support spares.

H, AIRSPACE MANAGEMENT LABORATORY – ATDP, M08.28-02

Program Description

Airspace management and its technology support the FAA's plan to improve NAS efficiency and performance while sustaining the current high levels of safety. The NAS design (e.g., sectors and routes) must be reviewed continuously to identify performance improvement alternatives. It is essential that the agency deploy decision support tools and aeronautical data that will enable NAS performance improvements to be engineered for enhanced air traffic control flight operations. Therefore, the agency needs the capability to operate an analysis, data collection, modeling, measurement, and simulation tools laboratory that includes development and use of geo-spatial analysis tools, statistical methods for operations management and decision sciences, and environmental (noise) impact analysis tools.

This initiative will enhance the agency's ability to manage and use aeronautical information to support airspace management goals. Capabilities will include data collection, performance measures, analysis, and airspace redesign as well as standardization of aeronautical information and processes to support these functions. By focusing on aeronautical information management, data quality and workflow processes, this project will directly affect the success of current operations, area navigation (RNAV) development, and airspace design alternatives nationally and at local high-density traffic areas such as the New York metropolitan area.

Furthermore, the Airspace Management Laboratory is the FAA's primary collection point and repository for traffic information. The centralized collection of post-operational traffic data and metrics is used extensively within airspace management by many FAA organizations and throughout the U.S. Government for decision support. The lab develops environmental design tools that are used as part of an airspace project to mitigate aircraft noise and to reduce aircraft emissions. The lab's analytical and design capabilities facilitate using advanced air traffic control decision support tools to support agency NAS improvement initiatives.

Working with the National Geo-spatial Intelligence Agency and other FAA partners, Aeronautical Information Management (AIM) will converge on a single U.S. data model to produce, track, and distribute aeronautical data for the United States. Eurocontrol's Aeronautical Information Exchange Model (AIXM) will be the protocol to facilitate the convergence. The FAA is working with ICAO and our AIM partners to make version 5 of AIXM the first global aeronautical exchange mechanism.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 1** – Achieve an average daily airport capacity of 104,338 arrivals and departures per day by FY 2008 and maintain through FY 2010 at the 35 OEP airports.

Relationship to Performance Target

This program provides process automation to support management and analysis of aeronautical data; develops and supports airspace tools that enable redesign and analysis of airspace and traffic flows; and, collects and manages traffic data used in analysis of airspace designs and for performance metrics.

Optimizing the NAS core capability is one of the FAA's highest priorities. The agency is investing in core capability ATC/ Air Traffic Management (ATM) decision support tools to improve system performance through increased flexibility, predictability and safety. The core tools depend heavily on high-quality data and the structure of the airspace. Supporting this initiative's data quality, modeling, and analysis capability goals will centralize national redesign activities and maximize the effect of implementing capability enhancements. This initiative will benefit the American public by improving system efficiency through the use of airline-desired flight profiles. In turn this will reduce airline operating costs and flight delays. Within the domain of system redesign and maturity, savings due to reduced air traffic control operating

costs will be realized by better balancing workload demand generated by user-desired flight profiles and by reducing facility operating costs.

I, AIRSPACE REDESIGN – ATDP, M08.28-04

Program Description

The National Airspace Redesign (NAR) is the FAA initiative to review, redesign and restructure the nation's airspace. NAR will leverage new technologies, equipage, infrastructure and procedural developments to maximize benefits and system efficiencies. Modernization of airspace through NAR is characterized by the migration from constrained ground-based navigation to the freedom of a Required Navigation Performance (RNP)-based system. There are four components to NAR: Regional Optimization, Regional Redesign, High Altitude Redesign and Oceanic Redesign. Implementation of NAR projects frequently results in changes in sector designs and number of sectors. This translates into requirements for changes in the supporting ground infrastructure. This program implements the changes in the infrastructure that are required for NAR to fully achieve its benefits

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 1 –** Achieve an average daily airport capacity of 104,338 arrivals and departures per day by FY 2008 and maintain through FY 2010 at the 35 OEP airports.

Relationship to Performance Target

As part of improving efficiency, NAR will increase system capacity by reducing any limitations that the airspace places on the system. Basically, the capacity impact of NAR is to remove as many airspace constraints as possible. Congestion, complexity and limited departure points in the current airspace can result in restrictions, limiting airport departure throughput. Inefficient en route holding and arrival routes can limit airport arrival throughput. NAR is striving to address these issues on both locally and system-wide

Program Plans FY 2007 – Performance Output Goals

- Implement initial sectors for Chicago Airspace Project.
- Implement ZHU Houston Area Air Traffic System sectors.
- Implement additional terminal/en route/oceanic changes.

Program Plans FY 2008-2011 – Performance Output Goals

- Implement additional terminal/en route/oceanic changes.
- Implement initial NAR airspace stratification changes.

J, WAKE TURBULENCE, M08.36-01

Program Description

This program will develop air traffic control decision support tools and the supporting infrastructure to safely reduce the wake turbulence separation between aircraft departing on an airport's closely spaced parallel runways. National Aeronautics and Space Administration (NASA) is exploring various concepts for the departure separation decision support tool and will develop a prototype for evaluation early in FY 2007. The prototype will be evaluated in an airport environment but will not be at a design maturity for immediate integration into the NAS. If the prototype successfully demonstrates benefit, the Wake Turbulence Program will initiate the development engineering to integrate the prototype's capabilities into

the NAS. Implementation of the integrated capability is planned for FY 2010 after an extensive 2-year evaluation.

The Wake Turbulence Program has also developed a pulsed Light Detection and Ranging system that is able to track aircraft-generated wake vortices. This sensor and others collect detailed information on how wake vortices travel and decay in varying weather conditions. NASA will use this information in designing its prototype decision support tool and associated supporting system (which may include new crosswind sensors).

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 1** – Achieve an average daily airport capacity of 104,338 arrivals and departures per day by FY 2008 and maintain through FY 2010 at the 35 OEP airports.

Relationship to Performance Target

This program aims to develop and implement a technology based solution to reduce the required wake separation for aircrafts departing on an airport's closely spaced parallel runways. This solution will allow, when the crosswind is favorable, the lifting or reduction of the wake turbulence separation time constraint that translates to 6 to 10 more departures per hour for an airport that uses its closely spaced parallel runways for departures and has a significant percentage of 757 and heavier aircraft traffic. The direct result is an increase in airport average daily arrival/departure capacity.

Program Plans FY 2007 – Performance Output Goals

- Complete data analysis from NASA prototype site.
- Complete evaluation of terminal airspace crosswind prediction algorithm
- Complete system requirements definition.

Program Plans FY 2008 – 2011 Performance Output Goals

- To be determined by FAA investment decision – late FY 2007.

K, ATO STRATEGY AND EVALUATION – ATDP, M46.01-01

Program Description

ATO Strategy and Evaluation – The ATO Strategic Management Process (SMP) provides strategic direction across the entire organization to ensure that the ATO focuses its entire F&E budget on the most important strategic and core business activities that are aligned with the FAA Flight Plan goals and objectives. In particular, strategies need to be formulated to achieve the objectives in the strategic pathway – Ensure a Viable and Affordable Future ATC System. Two fundamental drivers in strategy developments are accurate traffic forecasts and the business outlook. Accurate forecasting is critical to set ATO performance metrics and ensure that our Service Delivery Points get the best traffic demand projections to support workload planning and develop more detail bottoms-up budgets for performance accountability and tracking. More detail traffic forecasts, coupled with revenue and cost projections, also helps us develop a more comprehensive business outlook. Best value and low risk strategies need to be developed and implemented to best respond in a cost-effective and productive manner to the future business environment.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Organizational Excellence.**
- **FAA Objective 2 –** Improve financial management while delivering quality customer service.
- **FAA Performance Target 1** – Develop and implement a centrally managed cost control and productivity improvement program to lead the agency in reducing costs.

Relationship to Performance Target

This project will support development of the ATO Business Plan, which is a strategic plan to ensure that ATO spending for strategic and core activities is aligned with its mission and objectives. The Business Plan will project aviation activity and the types of operational services that will be needed to safely and efficiently manage air traffic. It will be based on the goals and objectives of the Strategic Management Process, which has established pathways to success. These pathways emphasize the core needs of the organization such as: (1) maintaining safe and efficient operations; (2) increasing capacity; (3) controlling costs; and (4) ensuring a viable future. By identifying key objectives for these pathways and allocating resources to carry them out, it will sustain and improve the quality of service while simultaneously implementing management tools to control costs and improve productivity.

L, ENERGY COST SAVINGS, F13.04-01

Program Description

The ability of the NAS to provide reliable, maintainable, cost-effective services and facilities depends upon available, effective and sustainable NAS infrastructure. Given the current technology and performance of the equipment, systems and facilities that comprise the NAS, our ability to sustain the existing levels of activities and infrastructure-provided services effectively and efficiently will be greatly diminished unless an optimum mix of new efficient technologies combined with trained staff and building automation systems are integrated into the NAS. The Energy Policy Act of 2005 reinforces these aggressive energy efficiency and water conservation requirements for federal agencies already established by Executive Orders 13123 and 13212.

This program implements FAA Executive Orders 13123, for energy conservation, occupational safety and health, environmental, and fire life safety in accordance with FAA Executive Order 13212 and the Energy Policy Act of 2005 and other public laws and negotiated labor agreements. The result will be a safe, healthful, and environmentally sound work place. The Business benefits will be: 1) Reductions in energy consumption, Avoided operations costs; 2) Minimized F&E costs through optimization; 3) Innovative, reliable, risk management strategic planning; 4) Maximized asset utilization.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Organizational Excellence.**
- **FAA Objective 2 –** Improve financial management while delivering quality customer service.
- **FAA Performance Target 1** – Develop and implement a centrally managed cost control and productivity improvement program to lead the agency in reducing costs.

Relationship to Performance Target

Actions to comply with Energy Program mandates will improve operational sustainability, reduce cost and increase productivity. Two aspects of financial discipline are to reduce (optimize) current operations costs and also to reduce life cycle costs. Tens of millions of dollars the FAA spends each year for operations, could be reallocated by optimizing energy technology and maintenance resources to advance sustainability and increase productivity. Superior technology increases reliability of facilities and systems, reducing the need in redundancy of building systems by improving the primary system reliability. The estimated value of twenty year life cycle savings is more than $1billion.

Program Plans FY 2007 – Performance Output Goals

The objective is to install those energy saving technologies that will assure the most dramatic and immediate operations costs reductions. Evaluating emerging technologies and monitoring consumption will be addressed as funding becomes available.

- Install Efficient Lighting – Benefit: $7,058,191/Cost: $447,200.
- Install Efficient Filters – Benefit: $7,249,500/Cost: $500,000.
- Install Controls – Benefit: $3,000,000/Cost: $2,000,000.
- Install Chiller Free Cooling – Benefit: $5,007,407/Cost: $7,052,800.

Program Plans FY 2008-2011 – Performance Output Goals

The objective is to emphasize life cycle cost-efficient technologies, measurement and verification and evaluation of emerging technologies.

- Install Efficient Filters - Benefit: $7,249,500/Cost: $500,000 per year.
- Install Chiller Free Cooling - Benefit: $14,521,481/Cost: $9,500,000 per year.

System Implementation Schedule

- Efficient Lighting
  - First site – Chicago Midway ATCT, November 2007.
  - Last site – Greater Pittsburgh International ATCT, September 2008.
- Efficient Filters
  - First site – Lambert St. Louis International ATCT, October 2007.
  - Last site – San Francisco International ATCT, September 2011.
- Controls
  - First site – Cincinnati International ATCT, December 2007.
  - Last site – Orlando International ATCT, September 2007.
- Chiller Free Cooling
  - First site – Boston Logan International ATCT, January 2007.
  - Last site – Detroit Metro Wayne County ATCT, September 2011.

M, MARKET BASED COMPETITIVE SOURCING, M45.01-00

Program Description

As one of the five government wide reforms under the President's Management Agenda, the competitive sourcing initiative calls on agencies to strive to create a market-based government advocating an environment of competition, innovation and choice. The primary tool for achieving this competition is the OMB Circular A-76, "Performance of Commercial Activities". The FAA has established the Office of Competitive Sourcing Acquisitions to use A-76 as a means of determining whether selected FAA services can be provided more cost effectively to users of the NAS. Circular A-76, establishes the policies and procedures for competing commercial activities and determining the best service providers.

Consequently, the FAA has established the Office of Competitive Sourcing Acquisitions to conduct A-76 studies to determine whether selected FAA services can be provided more cost effectively to users of the NAS. Through data provided by the Federal Activities Inventory Reform Act, the FAA is able to determine which FAA functions are inherently governmental in nature and which services are commercial in nature. The commercial activities identified in the Federal Activities Inventory Reform Act are available for consideration under the A-76 study for competition.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Organizational Excellence.**
- **FAA Objective 2 –** Improve financial management while delivering quality customer service.
- **FAA Performance Target 1** – Develop and implement a centrally managed cost control and productivity improvement program to lead the agency in reducing costs.

Relationship to Performance Target

Market-Based Competitive Sourcing is the most significant cost-control measure in the FAA. The outcome of the competition is a contract award that caps annual costs for Automated Flight Service Station services and mandates a minimum 22 percent cost savings over a 5-year period. The FAA ensures these cost-control measures by including contractual requirements to cap annual spending at $435 million and a 22 percent cost reduction over a 5-year period. This equates to a minimum, anticipated savings of $479M during the first five years of the contract.

Program Plans FY 2007 – 2011 Performance Output Goals

- Continue A-76 acquisition to include Screening Information Request and source selection activities.
- Complete source selection activities and initiate transition to the service unit and the successful vendor.
- Complete transition activities to successful vendor.
- Initiate next A-76 competition.

N, DYNAMIC CAPITAL PLANNING, M47.01-01

Program Description

This program will upgrade the analytical tools used to assess and rank capital investment projects in the Facilities and Equipment budget requests. The Office of Management and Budget (OMB) recommended a number of actions to the ATO to improve the management and performance of the capital budget, and this program will support the ATO's efforts to implement those improvements. During the development of the capital budget and in the follow on evaluation of the programs, additional tools are needed to make decisions based on quantifiable data, and analytical modeling techniques using best business practices. Collecting and analyzing data on program acquisitions through all phases of the life cycle, will improve accountability and management decision-making.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Organizational Excellence.**
- **FAA Objective 3 –** Make decisions based on reliable data to improve our overall performance and customer satisfaction.
- **FAA Performance Target 1 –** By FY 2008, 90 percent of major system acquisition investments are within 10 percent of annual budget, and maintain through FY 2010.

Relationship to Performance Target

The project will allow the initial procurement of financial analysis tools and consultant support to allow a better evaluation of programs through all phases of the acquisition life cycle. The improved data will lead to better decisions on program implementation, improvements in ATO's performance, and the resulting higher level of customer satisfaction.

1A02, SAFE FLIGHT 21 (SF-21)

FY 2007 Request $19.7M

- A, Safe Flight 21 – Alaska Capstone Initiative, M36.01-00
- B, Alaska MIH & Video Equipment – Alaska Weather Cameras, M08.31-00

A, SAFE FLIGHT 21 – ALASKA CAPSTONE INITIATIVE, M36.01-00

Program Description

Safe Flight 21 – Alaska Capstone Initiative: A technology-focused safety program seeking near term safety enhancements in aviation. The program provides Automatic Dependent Surveillance-Broadcast (ADS-B) equipped pilots with highly-accurate weather data, terrain proximity, and aircraft proximity to terrain and other traffic in order to reduce mid-air collisions. Additionally, ADS-B technology provides improved surveillance and two-way communication (to and from aircraft) to assist with search and rescue activities. The program has realized a forty-seven percent (47%) reduction in accidents with ADS-B equipped Part 135 aircraft from 2000-2004.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Increased Safety.**
- **FAA Objective 2 –** Reduce the number of fatal accidents in general aviation.
- **FAA Performance Target 1 –** By FY 2009, reduce the number of general aviation and nonscheduled Part 135 fatal accidents to no more than 319 (from 385, which represents the average number of fatal accidents for the baseline period of 1996-1998).
- **FAA Performance Target 2 –** By FY 2009, reduce accidents in Alaska for general aviation and all Part 135 operations from the 2000-2002 average of 130 accidents per year to no more than 99 accidents per year.

Relationship to Performance Target

The Alaska Capstone program contributes to improved safety by providing highly-accurate weather, traffic and terrain data to an ADS-B equipped multifunction display in the aircraft's cockpit. With ADS-B data in the cockpit, pilots have improved see-and-avoid capabilities, along with enhanced situational awareness. Along with an improved air-to-ground infrastructure, this technology allows dispatchers/operators better means to monitor aircraft, and allows air traffic controllers expanded surveillance coverage to provide improved ATC services.

Program Plans FY 2007 – Performance Output Goals

- Install and commission minimum operational performance standards (MOPS) compliant ADS-B ground-based transceivers (GBT) at additional locations throughout the state.
- Develop additional low-level routes and airport approach/departures supported by space-based navigation.
- Continue expansion of Automated Weather Sensors Systems (AWSS).

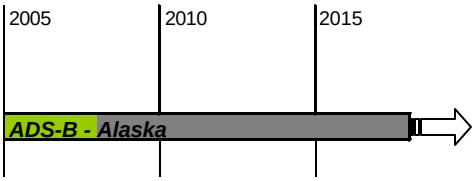
Program Plans FY 2008-2011 – Performance Output Goals

- Continue installation and commissioning MOPS compliant ADS-B GBTs at additional locations throughout the state.
- Develop additional low-level routes and airport approach/departures supported by space-based navigation.
- Complete expansion of AWSS.
- Begin decommissioning of NAVAIDs.

System Implementation Schedule

Automatic Dependent Surveillance-Broadcast (ADS-B) - Alaska

First site IOC: January 2001 -- Last site IOC: TBD



B, ALASKA MIH & VIDEO EQUIPMENT – ALASKA WEATHER CAMERAS, M08.31-00

Program Description

In the state of Alaska, flying is equivalent to driving in the continental US (CONUS). Small aircraft are used in many ways –to bus children to/from school and as ambulance transportation to medical facilities. Alaska's "skyways" are equivalent to the road infrastructure found throughout the CONUS. Weather cameras are equivalent to highway web-cams found on Department of Transportation (DOT) websites in the lower 48. These weather cameras provide real-time weather images at remote airports and mountain passes to pilots, allowing them to make informed decisions on whether it is safe to fly. Images are updated every ten minutes and stored for six hours and are accessible to the public via the FAA weather camera website http://akweathercams.faa.gov.

As the Alaska Flight Service System migrates to a web-based, central database managed aviation information network, weather cameras will play a central role in providing near real-time visual information of weather and airport conditions. The program provides a cost effective means of information gathering and dissemination, allowing pilots and dispatchers to assess current conditions. The National Weather Service (NWS) uses these cameras to support aviation and marine forecasts/warnings. Weather cameras have been identified as a priority technology for safety-enhancing technologies in two of the eight Arctic nations, specifically Russia and Canada. Additional funding is needed to support installations in Juneau and the Ketchikan area and pass sites en route to the North Slope of Alaska. These areas have minimal automated weather reporting, a high volume of commercial and general aviation traffic, and an elevated accident rate.

To follow up on FY 2006 evaluation activities aimed at expanding the capabilities of the weather cameras, we plan to conduct the following test and demonstration activities: 1) Conduct demonstration of weather camera array concept in Yakutat to support the Alaska Flight Service Station (FSS) Modernization Plan. 2) Conduct demonstration using weather camera images as primary source of visibility information when co-located with Automated Weather Sensor System (AWSS)/Advanced Weather Observation System (AWOS) using visibility markers. 3) Conduct demonstration of a direct uplink of weather camera images to avionics display.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Increased Safety.**
- **FAA Objective 2 –** Reduce the number of fatal accidents in general aviation.
- **FAA Performance Target 2 –** By FY 2009, reduce accidents in Alaska for general aviation and all Part 135 operations from the 2000-2002 average of 130 accidents per year to no more than 99 accidents per year.

Relationship to Performance Target

Rapidly changing terrain and weather phenomena in Alaska do not permit the effective use of automated weather systems. One of the strategies in the FAA Flight Plan 2006-2010 for reducing the number of fatal accidents in general aviation includes expanding and accelerating implementation of safety programs in Alaska. The FAA will continue to enhance aviation safety throughout the Alaska region by supplying visual meteorological information to pilots and expanding the use of weather cameras. Pilots and flight service specialists routinely use weather camera images prior to and during flight. When used to

corroborate current and forecasted weather, pilots make informative "go or no go" decisions. In an independent study (December 2002 to March 2003 by Parker Associates, Inc.) 68 percent of pilot's decisions to cancel or delay their flights were based on weather camera information, resulting in less aircraft accidents from severe weather.

Program Plans FY 2007 – Performance Output Goals

- Install 12 additional weather cameras.
- Co-locate eight weather cameras at AWSS sites.
- Conduct demonstration of weather camera array concept in Yakutat to support Alaska FSS Modernization Plan.
- Conduct demonstration using weather camera images as primary source of visibility information when co-located with AWSS/AWOS using visibility markers.

Program Plans FY 2008-2011 – Performance Output Goals

- Install 8 additional weather cameras.
- Continue Weather Camera Installations and maintenance.

1A03, AERONAUTICAL DATA LINK (ADL) APPLICATIONS

FY 2007 Request $1.0M

- Aeronautical Data Link – Flight Information Service (FIS), C20.03-00

Program Description

The FIS program includes two key elements. The first is a national data link system that broadcasts graphic and text FIS data, including weather products to the cockpit. The second is a national system for collecting and disseminating automated meteorological (AUTOMET) reports from aircraft operations.

The FIS data link (FISDL) system provides pilots timely access to FIS data that is consistent with FIS information available to air traffic controllers and flight service specialists in the NAS. The FISDL service implementation is through a FAA/Industry agreement based on the FAA Airborne FIS Policy Statement (May 1998) and a supporting FIS Data Link Requirements Document (February 1999). The FAA is providing access to the aeronautical spectrum, and program quality assurance and control. An industry service provider is furnishing the data processing and communications infrastructure. FISDL is a very high frequency broadcast service. As the NAS modernization evolves, the FISDL service will transition to the planned FAA Automatic Dependent Surveillance-Broadcast Universal Access Transceiver (UAT) network, or other suitable FAA data link, such as the Next Generation Air-to-Ground Communications data link.

The automated meteorological (AUTOMET) reports will provide coverage over data-void regions and will supplement similar data collected from airline operations through the Meteorological Data Collection and Reporting System. The FIS program is developing implementation strategies for establishing a national AUTOMET system for collecting and disseminating weather reports from low altitude commuter and package carrier operations through on-board automation and data link communications. This task builds on the Tropospheric Airborne Meteorological Data Reporting (TAMDAR) sensor sponsored by NASA. Flight evaluations of the TAMDAR sensor will be completed during FY 2006. Contract award for establishing a national AUTOMET collection system is targeted for FY 2008.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Increased Safety.**
- **FAA Objective 2 –** Reduce the number of fatal accidents in general aviation.
- **FAA Performance Target 1 –** By FY 2009, reduce the number of general aviation and nonscheduled Part 135 fatal accidents to no more than 319 (from 385, which represents the average number of fatal accidents for the baseline period of 1996-1998.

Relationship to Performance Target

Hazardous weather is a major factor in general aviation accidents. Timely access to FIS weather data information through the FISDL system allows pilots to make early decisions to continue or divert a flight; this leads to safer flight operations. The national collection of AUTOMET data will enable increased resolution and accuracy in National Weather Service aviation weather forecasts. These improved forecasts will be used by the Integrated Terminal Weather System (ITWS) and the Weather and Radar Processor (WARP) to support NAS operations, which will result in improved predictions of hazardous weather conditions that impact the NAS.

Program Plans FY 2007 – Performance Output Goals

- Expand service from FISDL network (159 ground sites) to include cockpit display of Temporary Flight Restriction (TFR) NOTAMS.
- Publish standards and guidance documents to include RTCA documents and FAA Advisory Circulars and Technical Standards Orders to support cockpit use of TFR and other aeronautical information products, and to support collection and dissemination of AUTOMET (TAMDAR) data.
- Publish AUTOMET system requirements document and establish strategy for implementation.
- Establish strategy for transition of the FISDL service to an FAA alternative such as Flight Information Service-Broadcast (FIS-B) via the planned Automatic Dependent Surveillance-Broadcast UAT network.

Program Plans FY 2008-2011 – Performance Output Goals

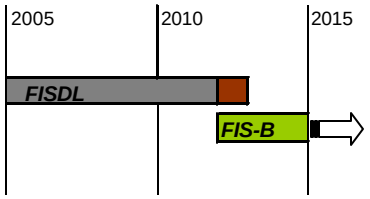
- Expand service from FISDL network (159 ground sites) to include graphic icing and turbulence products.
- Award contract for national AUTOMET service with at least 60 aircraft providing 12,000 AUTOMET (TAMDAR) reports per month.
- Publish plan for transition of FISDL service to an FAA alternative (i.e., FIS-B service via the planned UAT network).
- Complete termination of the FISDL service by September 2011 with transition to the FAA FIS-B service via the planned UAT network.
- Pending funding starting in FY 2009, expand AUTOMET service to include at least 150 aircraft providing 30,000 AUTOMET (TAMDAR) reports per month.

System Implementation Schedule

Flight Information Services Data Link (FISDL)

First site IOC: July 2000 -- Last site IOC: December 2004

First Site Decom: January 2011 -- Last Site Decom: September 2011
Replacement System: FAA Flight Information Service–Broadcast (FIS-B) via UAT network



1A04, NEXT GENERATION VHF AIR-TO-GROUND COMMUNICATIONS SYSTEM (NEXCOM)

FY 2007 Request $25.0M

- Next-Generation VHF A/G Communications System (NEXCOM) – Segment 1a, C21.01-01

Program Description

The NEXCOM program replaces and modernizes the aging and obsolete NAS air-to-ground (A/G) analog radio communications infrastructure. Replacement aims to eliminate existing NAS limitations that will impact air traffic system capabilities to effectively meet and manage the projected U.S. air traffic requirements of the future. These limitations include FAA very high frequency (VHF) radio frequency

spectrum saturation, inadequate A/G radio equipment maintainability and reliability, and lack of A/G information security and communications control.

The FAA is currently fielding its new multimode, digital radios. However, in recognition of the need for international harmonization on the best technical solution to the global spectrum congestion problem, the FAA decided in FY 2004 to defer the development and implementation of the NEXCOM ground system (Segment 1b).

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 3 –** Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

Relationship to Performance Target

NEXCOM will reduce the number of unplanned outages by replacing existing communications equipment with modern digital communications A/G equipment. It will also increase capacity by expanding the number of communication channels within the spectrum assigned to the FAA. This capability increases the capacity to meet current and near-term air traffic control radio communication demands.

Program Plans FY 2007 – Performance Output Goals

- Procure and begin installing 2,004 (9,796 out of 15,800-62%) additional Multimode Digital Radios.

Program Plans FY 2008-2011 – Performance Output Goals

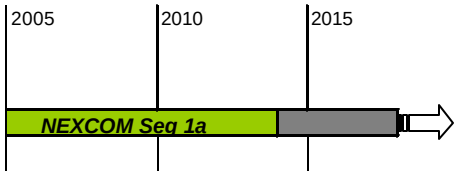
- Procure and begin installing 4,000 (27,600 total-100%) additional Multimode Digital Radios out through 2013.

System Implementation Schedule

Next-Generation VHF A/G Communications System (NEXCOM) – Segment 1a

First site IOC: July 2002 -- Last site IOC: September 2013

First Site Decom: July 2022 -- Last Site Decom: September 2032



1A05, TRAFFIC MANAGEMENT ADVISOR (TMA)

FY 2007 Request $37.6M

- Traffic Management Advisor (TMA) – Single Center, A24.03-00

Program Description

TMA is an automated decision-support system that allows air traffic controllers to sequence aircraft in a way that reduces airspace congestion and optimizes airport arrival capacity. TMA processes all arrival aircraft flight plans, weather data, and local airport operating procedures to produce the most efficient airport arrival sequence. The TMA system allows air traffic control procedures to progress from an aircraft distance-based sequencing to a more efficient time-based sequencing. The automation capability of TMA allows air traffic controllers to more precisely meter arriving aircraft by computing a specific time for each to "cross" a fixed point in the airport landing route while maintaining the minimum safe distance between each type of aircraft. This is referred to as time-based metering. This optimization allows more aircraft to land during peak airport operations, with peak capacity increases of 3% or more over the pre-installation baseline. TMA is based on commercial-off-the-shelf hardware and operating system software.

TMA-SC has been deployed to Minneapolis, Oakland, Los Angeles, Denver, Miami, Atlanta, Houston, Chicago, Albuquerque, Memphis, Seattle, Boston and Fort Worth en route centers. The last 7 en route centers will be deployed in FY 2007. These centers are Salt Lake City, Jacksonville, Washington, Cleveland, New York, Indianapolis and Kansas City. The TMA system will also be sustained at all deployed sites.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 1 –** Achieve an average daily airport capacity of 104,338 arrivals and departures per day by FY 2008 and maintain through FY 2010 at the 35 OEP airports.

Relationship to Performance Target

TMA-SC contributes to the FAA's greater capacity goal by improving capacity utilization at selected airports by an average of 3 percent. The program includes a software tool that traffic management coordinators use to plan traffic flows to major airports. It also helps controllers adjust aircraft spacing to optimize use of runways at major airports. Through time-based metering, TMA provides optimal arrival flows by dynamically feeding an arrival rate consistent with the airport acceptance rate.

Program Plan FY 2007 – Performance Output Goals

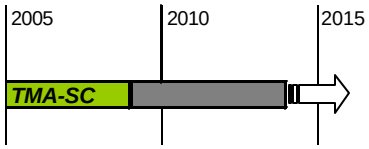
- Initial Daily Use at seven sites; Salt Lake City, Jacksonville, Leesburg, Cleveland, New York, Indianapolis and Kansas City.
- Planned Capability Achieved at Memphis

Program Plan FY2008-2011 – Performance Output Goals

- Planned Capability Achieved at seven sites; Salt Lake City, Jacksonville, Leesburg, Cleveland, New York, Indianapolis and Kansas City.
- Transition last seven TMA-SC sites to the Operations budget.

System Implementation Schedule

Traffic Management Advisor – Single Center (TMA-SC)
First site PCA: December 2000 -- Last site PCA: September 2008



1A06/1A07, NAS IMPROVEMENT OF SYSTEM SUPPORT LABORATORY AND WILLIAM J. HUGHES TECHNICAL CENTER FACILITIES

FY 2007 Request $13M

- System Support Laboratory Sustained Support, F14.00-00

Program Description

The William J. Hughes Technical Center (WJHTC) System Support Laboratory provides the environment to implement, test, and integrate new systems into the NAS. Once accepted, the systems become part of the FAA's test bed and are used to support the operational field sites over the lifecycle of the operational systems. This program provides the F&E funding to sustain the agency's centralized test bed infrastructure. These test beds consist of the En Route System Support Facility; Terminal System Support Facility; Oceanic System Support Facility; Flight Service Station and Weather Systems; Communications Systems; Radar Systems; Navigation and Tracking Systems; Target Generator Facility; Cockpit Simulation Facility; Human Factors Laboratory; and the fleet of specially instrumented aircraft. The test beds are also used for field support to the Operational Sites and for developmental activities associated with Research

and Development programs. Maintaining a centralized core of test beds reduces the overall cost to the FAA and increases efficiency of all phases of program activities. Centralized test beds ensure that the highly capable services of the WJHTC are available when individual programs need them.

The Improvement of the System Support Laboratory Program upgrades and enhances the test beds. It also procures unique equipment and systems that can interface and switch the various systems into multiple test and field support configurations. Without this flexibility, numerous separate system configurations would need to be created, which would undermine the cost-efficient concept of centralized test beds.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Organizational Excellence.**
- **FAA Objective 2 –** Improve financial management while delivering quality customer service...
- **FAA Performance Target 1** – Develop and implement a centrally managed cost control and productivity improvement program to lead the agency in reducing costs.

Relationship to Performance Target

This centralized set of systems and equipment forms the FAA's research, development, testing, and field support infrastructure. With this system centralization, each Integrated Product Team/Business Unit need not establish and maintain the infrastructure to support its individual programs and fielded systems. It also enables the FAA to evaluate concepts and programs that span more than one domain of the NAS (e.g., NGATS, OEP). The overall cost to the FAA is therefore kept to a minimum. A centralized knowledge base can also be integrated across program lines and the data can move easily during concept exploration, development, implementation, and field support activities.

1A08, WILLIAM J. HUGHES TECHNICAL CENTER INFRASTRUCTURE SUSTAINMENT

FY 2007 Request $4.2M

- William J. Hughes Technical Center Building and Plant Support, F16.00-00

Program Description

The FAA William J. Hughes Technical Center (WJHTC) owns and operates about 1.58 million square feet of test and evaluation, research and development, and administrative facilities, plus numerous project test sites. The value of the buildings and infrastructure is about $187.1 million. The FAA must have an annual program of capital improvements and modernization for these buildings and supporting infrastructure. Example projects include: (1) replacing old heating, ventilation, and air-conditioning systems; (2) upgrading the electrical distribution systems; and (3) upgrading fire-suppression systems to current life safety codes. The average annual expenditure to sustain the WJHTC is about 2.2 percent of the Center's value.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Organizational Excellence.**
- **FAA Objective 2 –** Improve financial management while delivering quality customer service.
- **FAA Performance Target 1 –** Develop and implement a centrally managed cost control and productivity improvement program to lead the agency in reducing costs.

Relationship to Performance Target

Infrastructure Sustainment at the WJHTC will control costs while delivering quality customer service by replacing old systems and equipment before serious problems occur. It will also reduce energy consumption on a per-square-foot basis, which contributes to reducing costs. This line item will update facilities and facility support systems to ensure that the laboratories and other facilities operate properly and

can handle utility loads of the systems being tested. Since the WJHTC plays a key role in developing and testing new equipment that will be used in the NAS, it is critical that the facilities operate efficiently. WJHTC effectiveness in testing and approving equipment reduces delays in implementing NAS systems and the costs of air traffic delays.

Program Plans FY 2007 – Performance Output Goals

- Expand Building 277 (construction).
- Repave Amelia Earhart Boulevard (construction).
- Complete Phase 2 of the Building 300 mechanical equipment replacement program.
- Re-mediate the WJHTC storm-water system (design/permits).

Program Plans FY 2008-2011 – Performance Output Goals

- Replace the Building 300 Atrium handrail system (safety issue).
- Renovate the Building 301 primary mechanical systems.
- Re-mediate mechanical/electrical code and safety deficiencies in the Research & Development Area.
- Replace three electrical substations in Building 300.
- Replace the glazing in Building 300.
- Construct a combined heating and power plant at the WJHTC.
- Replace WJHTC motor control centers and electrical transformers.
- Install a solar heating system at Building 296.
- Renovate Buildings 275, 305, and 316.
- Create a water distribution loop and re-mediate the WJHTC storm water system.
- Upgrade the electrical duct bank to the Research and Development Area.
- Replace Center underground, primary electrical cables.

1A09, SYSTEM-WIDE INFORMATION MANAGEMENT (SWIM)

FY 2007 Request $24.0M

- System Wide Information Management, A27.01-00

Program Description

The FAA is developing a System Wide Information Management (SWIM) network for NAS modernization to perform network enabled Air Traffic Management (ATM) operations, as defined by the Next Generation Air Transportation System (NGATS) program. The SWIM network will provide shared situational awareness, collaborative decision making, 4-D trajectory operations, NAS interoperability and global information sharing seamlessly and securely. It will enable new levels of redundancy from currently installed systems and will have data formats and architectures that readily accept new applications. As a result, SWIM will provide present and future NAS systems with greater capacity, while simultaneously reducing FAA operations costs. Because SWIM will provide precise information sharing among users, the ability exists to make prompt and efficient decisions for pilot separation and consolidation of ATM operations. It will provide Air Traffic the ability to conduct business in a highly proactive mode of operation.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity**
- **FAA Objective 3 –** Increase on-time performance of scheduled carriers.
- **FAA Performance Target 1** – Through FY 2010, maintain an 87.4 percent on-time arrival for all flights arriving at the 35 OEP airports, on more than 15 minutes late due to NAS related delays.

Relationship to Performance Target

Information management is a key element to meeting the need for greater capacity in the NAS. The international aviation community, other government agencies and industry are all moving to network-enabled operations, linking individual systems together and allowing them to inter-operate. Initial SWIM development shows existing technology capabilities to support high demand tasks such as a common air surveillance picture for large portions of the NAS. In support of capacity improvement, SWIM will manage surveillance, weather, aeronautical information, flight and NAS status information for ATM. Operational efficiencies will be achieved through improvement in information management by providing shared situational awareness, extending planning horizons, improving user services, and enhancing collaborative decision making. Information on all FAA and NAS community systems (airlines, other government agencies, military, etc.) will be available on a real time, secure, compartmentalized basis to all authorized users. The sharing of existing information will eliminate duplication and redundancy and permit a reduction in facility/communications infrastructure.

Program Plans FY 2007 – Performance Output Goals

- Conduct investment analyses, requirements development, and architecture refinement of SWIM core services.
- Establish a SWIM development operations center at William J. Hughes Technical Center (WJHTC).
- Develop and validate interface standards and the data architecture framework.

Program Plans FY 2008-2011 – Performance Output Goals

- Continue full-scale development of SWIM system architecture at the WJHTC, FAA Orville building (FOB-10A) and the National Capital Region Coordination Center.

1A10, ADS-B NAS WIDE IMPLEMENTATION

FY 2007 Request $80.0M

- ADS-B NAS Wide Implementation, S10.03-01

Program Description

The Automatic Dependent Surveillance-Broadcast (ADS-B) NAS-wide Implementation program offers the FAA an emerging technology directed at enhancing safety, capacity, productivity, and efficiency, while lowering Agency, operator, and user costs. ADS-B technology is the initial step in creating a more flexible air transportation system, as envisioned in the Joint Planning and Development Office's (JPDO) Next Generation Aviation Transportation System (NGATS) Plan to create a seamless surveillance and shared situational awareness picture for both ground and air operations throughout the NAS. To meet both the current and future needs, the NAS needs to provide this seamless surveillance and shared situational awareness picture on the surface before takeoff, throughout the flight, and until final shutdown. Life-cycle investments in radar do not meet the NGATS objectives to increase situational awareness, nor do they provide a capability where the aircraft can participate in decisions needed to increase efficiency, while reducing the impact on capacity during reduced visibility operations. ADS-B is an integrated approach to answer future NAS needs using a broadcast of the aircraft's position as the basis for providing surveillance, while providing the cockpit with a situational picture. This approach, supported by expanded use of broadcast services and related displays, provides enhancements for safety, an increase in low visibility capability and productivity for the FAA, with a substantial cost savings in meeting our basic surveillance requirements. The ADS-B NAS-wide Implementation program will continue planning for implementation and developmental activities in 2006, with NAS-wide implementation beginning in 2007 and continuing over the next fifteen years.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Increased Safety.**
- **FAA Objective 2 –** Reduce the number of fatal accidents in general aviation.
- **FAA Performance Target 1** – By FY 2009, reduce the number of general aviation and nonscheduled Part 135 fatal accidents to no more than 319 (from 385, which represents the average number of fatal accidents for the baseline period of 1996-1998).

Relationship to Performance Target

ADS-B technology enhances safety by increasing the volume of airspace where accurate position information on aircraft can be used for separation assurance. It provides information to controllers and to other aircraft to help avoid airspace conflicts. The Ground Based Transcievers (GBTs) (part of the infrastructure) can also be used to transmit aeronautical information (textual and graphical NAS status products such as weather, Temporary Flight Restrictions, Special Use Airspace) and the radar location of non-ADS-B equipped aircraft to aircraft equipped with ADS-B and cockpit displays. This improves pilot's situational awareness, and the additional information will help avoid accidents.

Program Plans FY 2007 – Performance Output Goals

- Begin initial ADS-B NAS Wide Implementation in the lower 48 states:
  - Continue procurement and installation of ground stations across the CONUS to supplement the systems installed under the research program.
  - Begin deployment of ADS-B infrastructure in the Gulf of Mexico in support of high altitude operations.
- Continue development and implementation of the required ADS-B control facilities.
- Continue specification development and introduction of ADS-B derived positional information onto en route and terminal surveillance automation platforms (En Route Automation Modernization (ERAM), Common Automated Radar Terminal System, (CARTS) Advanced Technologies and Oceanic Procedures (ATOP) Standard Terminal Automation Replacement System (STARS), and Airport Surface Detection Equipment – Model X (ASDE-X).

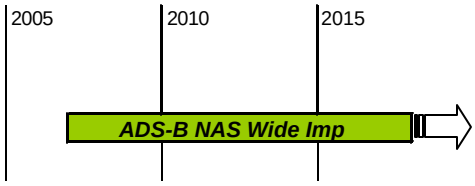
Program Plans FY 2008-2011 – Performance Output Goals

- Continue installation of ground stations across the CONUS.
- Begin upgrading ground infrastructure with both 1090 Mhz and UAT (978 Mhz) data links.

System Implementation Schedule

Automatic Dependent Surveillance-Broadcast (ADS-B) National Airspace System (NAS) Wide Implementation

First site IOC: 2007 -- Last site IOC: TBD



ACTIVITY 2. PROCUREMENT AND MODERNIZATION OF AIR TRAFFIC CONTROL FACILITIES AND EQUIPMENT

A. EN ROUTE PROGRAMS

2A01, EN ROUTE AUTOMATION MODERNIZATION (ERAM)

FY 2007 Request $375.7M

- En Route Automation Modernization (eRAM), A01.10-01
- En Route Automation Modernization (eRAM) – Radar Position Tech Refresh – R Side Upgrades, A01.10-02

Program Description

The En Route Automation Modernization (ERAM) program comprises four segments: Enhanced Backup Surveillance (EBUS), En Route Information Display System (ERIDS), ERAM Release 1, and ERAM Releases 2/3 (maintenance and upgrade releases). The first segment, EBUS, will be completed during FY 2006.

ERIDS – The En Route Information Display System (ERIDS) distributes important information such as Notices to Airmen, Pilot Reports, aeronautical charts and airport information, instrument approach and departure procedures, letters of agreement, and local procedures to air traffic controllers electronically to improve productivity and efficiency. Additionally, ERIDS reduces, and in some cases eliminates the time spent to process, print, manage, and distribute paper. Three prototype ERIDS systems were completed in FY 2003. National deployment of 20 systems will begin in FY 2006 and be complete in FY 2008.

ERAM Release 1 – ERAM Release 1 replaces the current Host Computer System with new software and hardware to enable improvements in airspace capacity, efficiency, and safety that cannot be realized with the current system. Additionally, today's Host Computer hardware can only be maintained through 2012. Designed to handle traffic growth through the year 2020, ERAM enables controllers to better handle unplanned events, offers flexible routing options, and provides additional safety alerts to prevent collisions and congestion. Fully integrated with ERAM Release 1 is a technical refresh of the radar controller position display processors to bring them into line with ERAM's modern, redundant architecture. The current processors were deployed in 1998 and are reaching their end of service life. Their processing power is less than a standard desktop computer and their resident graphics software language is both proprietary and outdated. To further mitigate risk, ERAM is leveraging existing FAA products and lessons learned. Specifically, the Display System Replacement forms the basis of ERAM radar controller display functionality; User Request Evaluation Tool forms the basis of the flight data processing and data controller display functionality; Standard Terminal Automation Replacement System radar data tracker provides a standard tracker, and Microprocessor En Route Automated Radar Tracking System forms the basis for ERAM separation assurance and safety functions. ERAM Release 1 will complete the delivery of a new automation system at each En Route Air Route Traffic Control Center in the continental United States. ERAM Release 1 national deployment begins in FY 2009 and concludes in FY 2011.

ERAM Release 2/3 – The first two ERAM maintenance and upgrade software releases are planned for 2009 and 2010 respectively. These releases are required for ERAM maintenance and will include incremental functional enhancements not available in ERAM Release 1.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 1 –** Achieve an average daily airport capacity of 104,338 arrivals and departures per day by FY 2008 and maintain through FY 2010 at the 35 OEP airports.

Relationship of Performance Target

ERAM contributes to the FAA's greater capacity goal by providing a fully redundant system with no loss of service when either the primary fails or during planned system maintenance, whereas the current Host Computer System has only limited backup functionality. This improved availability will preclude the need to impose restrictions on airspace users when the primary channel is not available. ERAM also increases the number of flight plans that can be stored to 7,080 (versus the current 2,600), provides flexibility in airspace configuration, and extends the radar coverage in all En Route Centers by increasing the number of radar feeds from 24 to 64. This reduces controller workload, increases productivity, and provides the necessary infrastructure to handle the anticipated growth and complexity of the NAS.

Program Plans FY 2007 – Performance Output Goals

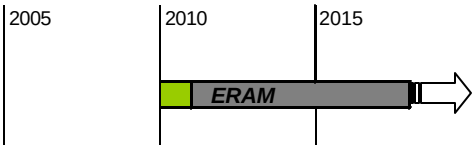
- Continued deployment of 13 ERIDS (cumulative 19 out of 20 systems)).
- ERAM Release 1 Systems Integration.
- Conduct ERAM Release 1 System Test Readiness Review.
- ERAM Release 1 equipment delivery (cumulative 10 out of 26 systems).

Program Plans FY 2008-2011 – Performance Output Goals

- ERAM Release 1 WJHTC Government Acceptance.
- ERAM Release 1 equipment delivery (cumulative 26 out of 26 systems).
- ERIDS Last Site Initial Operational Capability (20 out of 20 systems).
- ERAM Key Site Government Acceptance.
- ERAM Key Site and last site Operational Readiness Declaration.
- ERAM Release 1 In-Service Decision.
- Began deployment of ERAM Releases 2 and 3.

System Implementation Schedule

En Route Automation Modernization (ERAM)
First site ORD: December 2009 -- Last site ORD: December 2010



2A02, EN ROUTE SYSTEMS MODIFICATIONS
FY 2007 Request $27.5M

- En Route System Modification, A01.09-01

Program Description

The En Route System Modification program will replace and upgrade obsolete en route display system components at ARTCC's; this includes replacing the system processors; upgrading controller's displays and the infrastructure that supports them; and reconfiguring the consoles to accommodate additional processors. Replacing obsolete equipment will ensure reliability and maintainability of the display system. There are three phases: Phase 1: Upgrade main display monitor to flat panel (Console Reconfiguration Main Display Monitor Replacement); Phase 2: Upgrade D-side (Data Position Processors) due to end-of-life and to support future enhancements; Phase 3: Console Modifications to accommodate equipment to support ERAM.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 1 –** Achieve an average daily airport capacity of 104,338 arrivals and departures per day by FY 2008 and maintain through FY 2010 at the 35 OEP airports.

Relationship to Performance Target

This modification program replaces obsolete components of the en route display system to maintain NAS reliability. It also provides upgraded display system processors that support the User Request Evaluation Tool and ERAM programs. These upgrades support use of direct routes, which will maintain or reduce travel times between major metropolitan areas.

Program Plans FY 2007 – Performance Output Goals

- Deploy console modifications hardware (23 of 23 sites) to accommodate additional processors that will be deployed concurrently with ERAM deployment.

Program Plans FY 2008-2011 – Performance Output Goals

- Complete delivery and installation of "A" Channel Technical Refresh hardware at 20 sites (centers).

System Implementation Schedule

- Complete all current system modifications and upgrades by September 2008.

2A03, NEXT GENERATION WEATHER RADAR (NEXRAD) – PROVIDE
FY 2007 Request $2.0M

- Weather Radar Program – NEXRAD Open Systems Upgrades, W02.02-00

Program Description

There are 158 NEXRAD systems currently operating. This modern, long-range weather radar detects, analyzes, and displays severe weather information on air traffic controllers' consoles, enabling controllers to better determine location, time of arrival, and severity of weather conditions to enhance both flight safety and airspace capacity. Tri-Agency open system upgrades to the NEXRAD processors and receiver extend NEXRAD's capabilities by improving data quality, detection ability, and adding new data products. The National Weather Service collects NEXRAD weather data nation-wide and creates forecasts that in turn, feed downstream aviation weather users in all phases of flight who especially benefit from knowing national, regional, and local weather conditions and forecasts derived from NEXRAD data. Downstream Terminal and En route air traffic control systems including Weather and Radar Processor (WARP), Integrated Terminal Weather System, Corridor Integrated Weather System (CIWS) and users including the ATC Systems Command Center also benefit from NEXRAD products and services.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 3 -** Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

Relationship to Performance Target

The NEXRAD program contributes to greater capacity goals by ensuring sustained operational availability of NEXRAD. NEXRAD detect precipitation intensity and provide this data in varied displays directly or

indirectly to all OEP airports and most every air traffic control facility in the continental United States. The Open System Upgrade incorporates technology advances into the existing NEXRAD system to improve its detection capability, update rate, resolution and clear discernment of additional types of weather conditions within discrete atmospheric regions. The Open Radar Data Acquisition production upgrade will deploy new hardware to the 12 FAA owned sites in Alaska, Hawaii, and Puerto Rico. The FAA will develop dual polarization technology upgrades for all NEXRAD sites.

Program Plans FY 2007 – Performance Output Goals

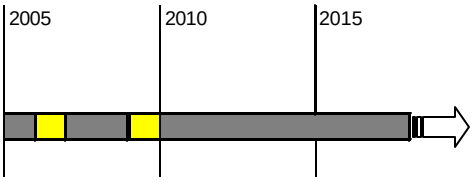
- Provide funding to Department of Commerce/National Weather Service (Lead Agency) for Department of Transportation (DOT)/FAA Tri-Agency funding obligation (cost sharing Memorandum of Agreement (MOA) for NEXRAD Product Improvement / Open Systems Upgrade.
- Update all NEXRAD with the Machine Intelligent Gust Front Algorithm and upgrades to the Open Radar Processing Group.

Program Plans FY 2008-2011 – Performance Output Goals

- Provide funding to Department of Commerce/National Weather Service (Lead Agency) for DOT/FAA Tri-Agency funding obligation (cost sharing MOA for NEXRAD Product Improvement / Open Systems Upgrade.
- Update all NEXRAD with Super-resolution enhancements, Data Quality upgrades, and Dual Polarization hardware and software modifications.

System implementation schedule and replacement system name

Next Generation Weather Radar (NEXRAD) - Open System Upgrades
Upgrade 1: 2006 -- Upgrade 2: 2009



2A04, WEATHER AND RADAR PROCESSOR (WARP)

FY 2007 Request $7.4M

- Weather and Radar Processor (WARP) – WARP Replacement, W04.03-00

Program Description

A next-generation WARP is designed to collect, process, and disseminate Next Generation Weather Radar (NEXRAD) data and other weather data to Air Route Traffic Control Center (ARTCC) controllers, Air Traffic Control System Command Center (ATCSCC) personnel, traffic management specialists, and ARTCC weather service unit meteorologists. The WARP system is a computer-based interactive, meteorological data processing system that simultaneously and continuously receives, processes, stores, distributes, and displays aviation-related weather information and radar products. Each WARP consists of the Weather Server, the Communications Subsystem, the Meteorologist's Workstation, the Briefing Terminals, the ARTCC Monitor and Control Center workstation, and the Weather Information Network Server. The ATCSCC WARP also includes the FAA Bulk Weather Telecommunications Gateway server. The WARP primarily provides timely and accurate weather displays to air traffic controllers through controller display systems; supports the Traffic Management Unit and ATC specialists at the ARTCCs and the ATCSCC; and disseminates weather information to other NAS systems.

The WARP program provides processing tools to consolidate weather data from several sources into a single, integrated workstation to support air traffic operations. The program reduces weather-related delays, provides timely weather products, and improves collaborative decision-making. In providing enhanced, integrated weather information, the WARP furnishes the most timely and accurate weather forecast products to NAS systems.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 1 –** Achieve an average daily airport capacity of 104,338 arrivals and departures per day by FY 2008 and maintain through FY 2010 at the 35 OEP airports.

Relationship to Performance Target

The WARP contributes to maintaining the average daily airport capacity by providing NEXRAD data to controllers' consoles and providing processing tools to consolidate weather data from several sources into a single, integrated workstation to support air traffic operations. As a result of the integrated weather information made available through the WARP, air traffic controllers have an enhanced awareness of the weather and can better direct aircraft. Additionally, the WARP provides weather on the briefing terminals in the Traffic Management Units, whose enhanced weather awareness allows them to redirect flights better.

Program Plans FY 2007 – Performance Output Goals

- Continue WARP Maintenance and Sustainment Service (WMSS) activities.
- Implement changes to hardware and software to accommodate replacement of FAA Telecommunication Satellite with FAA Telecommunications Infrastructure service.
- Implement critical technical refreshment of: mosaicing processor, operating system, FAA Bulk Weather Telecommunications Gateway /WARP data availability capability; Weather Information Network Server data distribution capability.
- Implement information systems security certification and authorization package mitigation activities.

Program Plans FY 2008-2011 – Performance Output Goals

- Continue WMSS activities.
- Implement critical technical refreshment of: ARTCC processors and work stations.
- Implement information systems security certification and authorization package mitigation activities.
- Complete final investment decision for the WARP follow-on, a combined weather acquisition.
- Complete technical refreshment activities.
- Award the WARP follow-on contract, a combined weather acquisition.

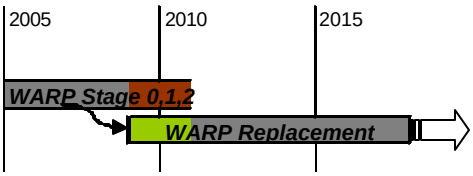
System Implementation Schedule

- WMSS contract started: April 2004.
- WARP follow-on contract, a combined weather acquisition, is pending completion of the final investment decision planned for FY2008.

WARP Replacement

WARP Stg 0,1,2: First ORD: Oct 1997 -- Last ORD: Dec 2002

First site ORD: Post 2008 JRC -- Last site ORD: TBD



2A05, ARTCC BUILDING IMPROVEMENTS/PLANT IMPROVEMENTS

FY 2007 Request $51.0M

- ARTCC Plant Modernization/Expansion – ARTCC modernization, F06.01-00

Program Description

The Air Route Traffic Control Center (ARTCC) Modernization and Expansion program supports En Route Air Traffic operations and service-level availability through facility lifecycle program management of the 21 ARTCCs and two Center Radar Approach Control (CERAP) facilities. This program expands and

modernizes these facilities to accommodate new air traffic control equipment. It also renovates and upgrades en route centers to prevent outages that would delay air traffic.

The program began in the mid 80's and is comprised of 13 standard projects that are implemented at all of the ARTCCs. To date, nine of these standard projects are complete at all the ARTCCs. ARTCCs and CERAPs must be modernized and sustained in order to support ATC operational requirements and to minimize ATC delays or outages caused by infrastructure failures. The program also includes facility sustain funding, configuration management and numerous special projects.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 3 –** Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

Relationship to Performance Target

The ARTCC Modernization/Expansion program contributes to the FAA's greater capacity goal by ensuring that buildings that house en route control equipment are modified, as necessary, to accept new equipment. The program also maintains these buildings in good condition to avoid air traffic control outages due to failures in such infrastructure systems as electrical distribution systems. The program maintains the integrity of 21 ARTCCs, and two CERAP facilities, as well as upgrades facilities for integration and transition of new NAS systems. Modernizing ARTCC and CERAP building infrastructure – with such projects, such as electrical wiring, heating and ventilation systems, and structural components – reduces the chances of outages, which can cause air traffic delays.

Program Plans FY 2007 – Performance Output Goals

- Fund Combination M-1/Control Wing Basement Mod 2 project at Albuquerque.
- Fund M-1/Automation Wing Rehabilitation project at Anchorage.
- Fund Administrative Wing Rehabilitation project at San Juan.
- Fund the Anchorage ARTCC Chiller Lease Program.
- Provide $100,000 per ARTCC for repairs and upgrades.
- Conduct facility condition assessments at five ARTCCs.
- Update the national Facility Condition Assessment database.
- Fund equipment relocation as required.

Program Plans FY 2008-2011 – Performance Output Goals

- Fund M-1 control room renovation project at Miami.
- Fund Combination M-1/Automation Wing Rehabilitation project at Seattle and Jacksonville.
- Provide $100,000 per year per ARTCC for repairs and upgrades.
- Conduct facility condition assessments at 10 ARTCCs.
- Fund Control Wing Basement Mod 2 construction project at six sites (Boston, LA, Miami, Jacksonville, Seattle and Kansa City).
- Fund M-1 construction project at three sites (LA, Boston, Memphis).
- Fund Combination M-1/Automation Wing Rehabilitation project at five sites.
- Fund Administrative Wing Rehabilitation project at one site.
- Provide $100,000 per year per ARTCC for repairs and upgrades.
- Update the national Facility Condition Assessment database.
- Fund equipment relocation as required.

2A06, AIR TRAFFIC MANAGEMENT (ATM)

FY 2007 Request $78.9M

- Traffic Flow Management Infrastructure – Infrastructure Modernization, A05.01-06
- Collaborative Air Traffic Management Technologies (CATMT), A05.01-10
- Route Availability Planning Tool (RAPT), A05.05-01

Program Description

The Traffic Flow Management (TFM) system is the automation backbone for the Air Traffic Control System Command Center (ATCSCC) and nationwide Traffic Management Units that assist in the strategic planning and management of air traffic. The TFM system is the nation's single source for capturing and disseminating air traffic information and is the key product for coordinating air traffic across the aviation community. TFM hosts the software decision support systems that manage and meter air traffic to reduce delays and make maximum use of system capacity to balance growing flight demands with NAS capacity within a dynamic environment. The FAA collaborates with aviation customers to implement programs that reduce delays to ensure smooth and efficient traffic flow through FAA-controlled airspace, thereby saving the flying public and airlines millions of dollars. TFM's customers include the airlines, general aviation, U.S. Department of Defense (DoD), U.S. Department of Homeland Security, industry, and partner countries.

The TFM Modernization (TFM-M) component of the ATM budget line modernizes the TFM infrastructure. The TFM infrastructure, which was fielded as a prototype in the 1980s, has evolved through several generations of hardware and software, and the system is approaching functional obsolescence. The core system software has become increasingly difficult to maintain and to modify, and it will not support the emerging ATM structure and system requirements.

CATMT provides new decision-support tools to deliver additional user benefits and increase the effective capacity of the NAS. CATMT leverages the cooperative environment that was used in the Collaborative Decision Making Program to develop and deploy future capability enhancements. CATMT will incrementally develop and integrate decision support capabilities (both procedural and with new tools to handle bad weather departures and landings) into the legacy TFM system, and then into the modernized system. CATMT capabilities will:

- Provide more accurate forecasting of system capacity and user demand.
- Improve modeling, evaluation and optimization of traffic management initiatives.
- Improve information dissemination, coordination and execution of traffic flow strategies.
- Minimize and equitably distribute delays across airports and users.
- Collect and process more performance data to define metrics and identify trends.

Additionally, the TFM program will ensure that the modernized infrastructure will continue to operate successfully as the FAA moves toward the Next Generation Air Traffic System (NGATS). The design for the modernized system will accommodate interface changes required by programs such as System Wide Information Management (SWIM). In addition, future CATMT work package software releases will provide the necessary functionalities to integrate the modernized Traffic Flow Management System with NGATS.

Relationship of Program to FAA Strategic Goal, Objective and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 3 –** Increase on-time performance of scheduled carriers.
- **FAA Performance Target 1 –** Through FY 2010, maintain an 87.4 percent on-time arrival for all flights arriving at the 35 OEP airports not more than 15 minutes late due to NAS related delays.

Relationship to Performance Target

The ATM program will support the Greater Capacity goal through the use of automated systems that provide more accurate and timely information for all TFM system users, improve operator and passenger access to flight information, and reduce system delays. TFM-M will upgrade the existing TFM infrastructure and will increase integration and interoperability by establishing a robust, commercially-available, and standards-compliant system. This will accelerate development and implementation of technology and tools that will improve traffic management synchronization, traffic management flow, and information management services. CATMT and RAPT will develop and deploy critical automation enhancements to help reduce airway and airport congestion. These enhancements will ultimately lead to improved passenger throughput, equitable allocation of resources among users, and significant improvement in air traffic operations system performance metrics.

Program Plans FY 2007 – Performance Output Goals

- Re-engineer TFM architecture to support improved access to TFM information.
- Deploy initial phase of Airspace Flow Program.
- Integrate surface data into TFM data stream.

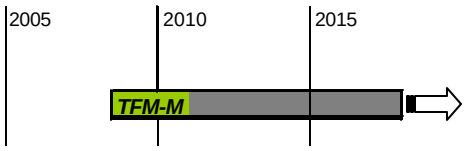
Program Plans FY 2008-2011 – Performance Output Goals

- Begin Initial Operating Capability (IOC) of the modernized TFM system.
- Continue work on later phases of Airspace Flow Programs.
- Begin IOC of modernized Traffic Situation Display systems at TFM field sites.
- Deploy the Impact Assessment and Resolution capability.

System Implementation Schedule

Traffic Flow Management - Modernization (TFM-M)

First site IOC: September 2008 -- Last site IOC: TBD



2A07, AIR/GROUND COMMUNICATIONS INFRASTRUCTURE

FY 2007 Request $16.5M

- Radio Control Equipment, C04.00-00
- Communications Facilities Enhancement – Expansion, C06.01.00
- Communications Facilities Enhancement – Air-to-Ground Communications Radio Frequency Interference Elimination, C06.03.00
- Communications Facilities Enhancement – Ultra High Frequency Radio Replacement, C06.04.00

Program Description

The Air-to-Ground (A/G) Communications Infrastructure Sustainment program enhances operational efficiency and effectiveness by making planned improvements to the A/G communications infrastructure (in all NAS environments, both en route and terminal). The improvements encompass replacing old and increasingly unreliable equipment and associated sites, and facility improvements, including establishing new facilities intended to broaden communications coverage. The Communications Facilities Enhancements (CFE) program provides new radio control facilities and/or modifies existing facilities to enhance the A/G communications between air traffic control and aircraft. The radio frequency interference elimination program provides modern communication and ancillary equipment to improve operational performance at select remote communication facilities and eliminate interference from commercial or other radio frequency emissions.

The ultra high frequency (UHF) radio replacement project replaces aging equipment used to communicate with Department of Defense aircraft. The FAA maintains the UHF A/G communications service for air traffic control of military operations in the United States. The Backup Emergency Communications replacement program provides a dedicated channel/sector in place of a priority-based, shared outlet system and replaces a 1970s technology system that is logistically unsupportable.

The Radio Control Equipment (RCE) program, beginning in 1995, replaced obsolete radio signaling and tone control equipment, improved operational performance, and reduced maintenance costs. Due to the deferment of the Next Generation air/ground Communications system development program, funding is required in FY 2006 to continue to meet RCE requirements. RCE is required at control end sites, such as ARTCCs, TRACON facilities, ATCTs, CERAP, Radar Approach Control, and AFSSs. This equipment has also been used for controlling radio assets at radio control facilities such as, Remote Center Air/Ground facilities, Remote Transmitter/Receiver facilities, and Remote Communications Outlet facilities.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 3 –** Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

Relationship to Performance Target

This A/G Communications programs support the FAA initiative to provide communications infrastructure to make airspace restructuring feasible. It will reduce the number of outages and enhance communications capacity by replacing aging and increasingly unreliable communications equipment with modern equipment. These programs improve and upgrade associated sites and facilities. In addition, they enable additional capacity by providing new communications sites to conform to new air traffic patterns.

Program Plans FY 2007 – Performance Output Goals

- Procure and begin installation of 1,570 UHF Radios (4978 total out of 9842-50%).
- Provide support to CFE critical sites.
- Procure 2,400 RCE units (10,750 out of 11,950 -90%).

Program Plans FY 2008-2011 – Performance Output Goals

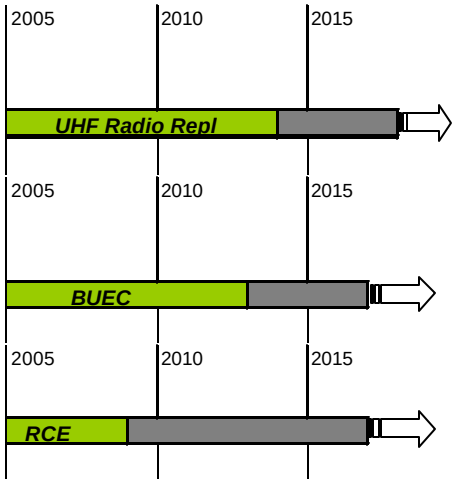
- Procure and begin installation of 4,864 1,810 UHF Radios (9842 total-100%).
- Provide support to CFE critical sites.
- Procure 1,200 RCE units (11,950 total-100%).

System Implementation Schedule

Communications Facilities Enhancement – Ultra High Frequency (UHF) Radio Replacement
First ORD: June 2004 -- Last ORD: September 2013

Backup Emergency Communications Replacement (BUEC)
First site ORD: March 1998 -- Last site ORD: December 2005

Radio Control Equipment (RCE)
First site IOC: 1995 -- Last site IOC: September 2008



2A08, ATC BEACON INTERROGATOR (ATCBI) – REPLACEMENT

FY 2007 Request $16.4M

- Secondary Surveillance – ATC Beacon Interrogator (ATCBI) Replacement, S02.03-00
- Air Traffic Control Beacon Interrogator Model 6 – Beacon Only Buildings, S02.03-02

Program Description

The Air Traffic Control Beacon Interrogator - Model 6 (ATCBI-6) Replacement is a secondary radar used for En Route and Oceanic air traffic control. The ATCBI-6 ensures that aircraft positional information and identification remain available to support Air Traffic Control services, including separation assurance, traffic management, navigation, and flight information.

The ATCBI-6 sensors replace the 129 ATCBI-4/5 systems. These ATCBI-4/5 systems are 5 to 10 years past their 20-year life span and have many obsolete parts. Furthermore, the existing beacons are analog systems that are incompatible with new automation systems such as Standard Terminal Automation Replacement System (STARS) and En Route Automation Modernization (ERAM), the planned HOST Computer System replacement.

The ATCBI-6, in conjunction with co-located primary long-range radar, also provides back-up Center Radar Approach surveillance service to numerous Terminal Radar Approach Control facilities in the case of lost terminal radar services and/or scheduled maintenance downtime. The ATCBI-6 system is a low-cost, highly reliable, extremely accurate, and more capable replacement for old, high-cost obsolete beacon interrogators with higher failure rates.

The actual performance of ATCBI-6 systems shows an increased mean time between outages and decreased time to restore service, resulting in increased system availability and reduced maintenance staffing needs. The ATCBI-6 provides digital outputs that support other NAS modernization including STARS and common Automated Radar Tracking System user workstations. There has also been extremely positive user feedback on the initial deployed systems, validating the test results.

The ATCBI-6 program collaborates with the DOD and the Department of Homeland Security (DHS) by providing FAA radar data to these agencies. This information sharing enhances the ability of the DOD and DHS to meet their air sovereignty and homeland defense missions.

The ATCBI-6 Beacon Only Sites - Facility Establishments project establishes buildings that will house the new beacon interrogators and adds new coverage. The new buildings will help protect the beacon interrogators from outage caused by severe weather or other causes.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 3 –** Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

Relationship to Performance Target

The ATCBI-6 system significantly improved the reliability and availability of aircraft positional and identification data that will support the DOT and FAA goals for flights arriving on time, increased airport capacity and reduced operational costs .

Program Plans FY 2007 – Performance Output Goals

- Deliver 22 systems from the staging facility in Norfolk, VA to the sites, including the 2 Beacon Only Facility Establishment sites at Redmond, OR and Jackson Hole, WY.
- Complete site acceptance tests for 22 systems.
- Complete IOC at 24 sites, including the 3 Beacon Only Facility Establishments at Georgetown, BH, Eagle County, CO and Gallatin Field, MT.
- Continue commissioning activities.
- Begin Rotary Joint Modification.
- Complete transition of contractor depot level support from Raytheon to FAA Logistics Center.
- Continue installing Air Route Surveillance Radar Model 4/Mode 4 Interface.
- Begin efforts at Grand Turk, BW, Pico Este, PR and Yakutat, AK.
- Complete construction efforts and system delivery at Redmond, OR and Jackson Hole, WY
- Continue site planning and design efforts at Freeport, BH.

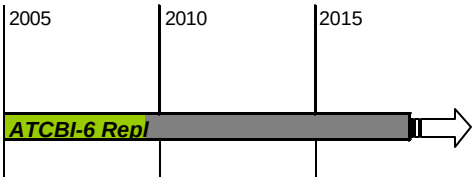
Program Plans FY 2008-2011 – Performance Output Goals

- Complete 21 system deliveries from the Norfolk, VA staging facility to the sites including the Beacon Only Facility Establishment at Freeport, BH and Yakutat, AK.
- Continue Rotary Joint Modification.
- Complete construction efforts at the Freeport, BH facility establishment.
- Close out activities for the Prime Contractor, Raytheon.
- Complete IOC at the remaining 33 sites, including the 4 Beacon Only Facility Establishments at Freeport, BH, Redmond, OR and Jackson Hole, WY and Yakutat, AK.
- Complete commissioning activities.

System Implementation Schedule

Air Traffic Control Beacon Interrogator - Model 6 (ATCBI-6) Replacement

First site ORD: July 2002 -- Last site ORD: April 2009



2A09, AIR TRAFFIC CONTROL EN ROUTE FACILITIES IMPROVEMENTS

FY 2007 Request $5.0M

- Long Range Radar (LRR) Program – LRR Improvements – Infrastructure Upgrades/Sustain, S04.02-03

Program Description

The LRR infrastructure upgrades program sustains and improves the facilities where LRRs are installed to provide aircraft position information to FAA en route control centers. These planned improvements support the installation and lifecycle of the secondary beacons radars (Mode S and ATCBI-6); both standalone and those co-located with the long-range primary radars. These secondary beacon radars have been and are being installed in facilities that dates back to the 1950's and 60's. Many of the en route secondary radar service outages can be directly linked to failing infrastructure. If the infrastructure of these en route radars is allowed to continue to degrade, the service supported by these en route secondary radars will suffer increasing outages and related delays. There is not a single contract to do the necessary upgrades. Contracts for improvements are specific to the component being repaired and sometimes also specific to the site where the improvement is needed. This project finances upgrades to the antenna drive systems and improvements to the facility infrastructure systems, such as power systems; engine generators; environmental control systems; electrical systems; and lightning protection, grounding, bonding, and shielding systems.

LRR Infrastructure Upgrades consist of two phases:

Phase I – Short-Term Upgrades to Facility Infrastructure. These are limited to refurbishing Heating, Ventilation, and Air-Conditioning, Engine Generators, Uninterruptible Power Supply, and Lightning Protection, Grounding, Bonding, and Shielding Systems and performing minimum infrastructure upgrades to support ATCBI-6 deployment.

Phase II – Long-Term Upgrades to Facility Infrastructure. These will replace critical infrastructure systems if required for en route secondary beacon operations. Requirements are being defined through Web-based surveys and site surveys. The anticipated period of performance is 2006 through TBD.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase airport capacity to meet projected demand
- **FAA Performance Target 1 –** Achieve an average daily airport capacity at 104,338 arrivals and departures per day by 2010 at the 35 OEP airports.

Relationship to Performance Target

The LRR program is required to support the capacity performance goal in the NAS. This infrastructure upgrade project ensures that LRRs maintain high reliability and availability required to support the performance goal.

Program Plans FY 2007 – Performance Output Goals

- Conduct research requirements for support of the Radome, Tower, Pedestals, LGBS, Rotary Joints, Power, and Security Programs.
- Continue support of the National Tower Maintenance & Repair Program.
- Continue support of the Improvement of Federal Building & Equipment Program.
- Continue Phase II – Long-term upgrades to facility infrastructure.
- Continue critical infrastructure upgrades and refurbishments.

Program Plans FY 2008-2011 – Performance Output Goals

- Continue Phase II – Long Term Upgrades to Facility Infrastructure.
- Perform en route radar in-service engineering.

2A10, EN ROUTE COMMUNICATIONS AND CONTROL FACILITIES IMPROVEMENTS; 2B13, TERMINAL RADAR (ASR) – IMPROVE; 2B14, TERMINAL COMMUNICATIONS – IMPROVE; AND 2D05, NAVIGATION AND LANDING AIDS – IMPROVE.

FY 2007 Request $9.5M

- Regional Projects, M08.05-00

Program Description

These projects support immediate needs at FAA facilities identified by service areas. This includes replacing navigational aids, communication equipment and air traffic facilities damaged by fire or severe weather conditions. It also provides for immediate rebuilding of damaged facilities and equipment caused by equipment failure.

Another purpose is to provide funding to alter the configuration of air traffic equipment to support growth in air traffic at specific airports by adding air traffic controller workstations, relocating radars, and establishing or relocation communication facilities to better serve new routes into an airport.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 3 –** Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

Relationship to Performance Target

The Regional Projects contribute to the greater capacity goal by maintaining NAS equipment to minimize outages that could result in delays and correspondingly, decrease capacity. It also funds projects such as adding new air traffic control positions, which enables increased capacity.

Program Plans FY 2007 – Performance Output Goals

- Install additional ATCT positions.
- Replace/improve Heating, ventilation and air conditioning (HVAC) systems.
- Refurbish/improve ATCT facilities relocate/upgrade localizers, Instrument Landing System (ILS), Medium-intensity Approach Light System with Runway alignment indicator lights (MALSR), Runway End Identifier Lights (REIL), and Glide Slopes.
- Establish/improve en route communications operating positions.
- Establish ARTCC Sectorizations.
- Install Remote Center Air/Ground (RCAG) antenna towers.
- Install Occupational Safety and Health Administration (OSHA) approved safety devices on ATCBI-6 antennas.
- Provide Automatic Terminal Information Service to several locations.
- Provide Terminal Radar improvements for several locations.

Program Plans FY 2008-2011 – Performance Output Goals

- Install additional ATCT positions.
- Replace/improve HVAC systems.
- Refurbish/improve ATCT facilities relocate/upgrade various localizers, ILS, MALSR, REIL, and Glide Slopes.
- Establish/improve en route communications operating positions.
- Establish ARTCC Sectorizations.
- Install RCAG antenna towers.
- Install OSHA approved safety devices on ATCBI-6 antennas.
- Provide Automatic Terminal Information Service to several locations.
- Provide Terminal Radar improvements for several locations.

2A11, INTEGRATED TERMINAL WEATHER SYSTEM (ITWS)

FY 2007 Request $20.9M

- Integrated Terminal Weather System (ITWS) – Development/Procurement, W07.01-00

Program Description

The ITWS uses new technology to help air traffic flow more efficiently in periods of adverse weather. ITWS is an air traffic management tool that provides air traffic controllers and traffic manager's full-color graphic displays of essential weather information at major U.S. airports. The FAA developed ITWS to provide air traffic managers, controllers, and airlines with a tool that integrates weather-related data from a number of sources and presents accurate, easy-to-understood, and useable weather information or "products" on a single display.

The system uses highly sophisticated meteorological algorithms to analyze data from multiple sensors, and to display highly accurate current, and 20-minute forecasts of, weather conditions and hazards in the terminal area. ITWS products include such weather information as windshears, microbursts, storm cell motion and speed, lightning, and terminal area winds aloft. The predictive products and the winds aloft are new technology only available to ITWS users. A Terminal Convective Weather Forecast (TCWF) capability will be added to ITWS in FY 2006 to increase the forecast to 60 minutes and provide additional data to enable controllers to more fully exploit the operational benefits of the information. ITWS products increase safety and capacity, and improved system efficiency, in the terminal environment.

The FAA will deploy the ITWS to 22 TRACONs, and it will provide weather information to 28 high-activity airports that have demonstrated a significant convective weather history. The system displays hail, lightning, and tornadoes. Integrating data and products from various FAA and NWS sensors and specially equipped aircraft (via the meteorological data collection and reporting system) gives ITWS the accuracy and sophisticated predictions that it must have to operate effectively.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 1** – Achieve an average daily airport capacity of 104,338 arrivals and departures per day by FY 2008 and maintain through FY 2010 at the 35 OEP airports.

Relationship to Performance Target

Traffic managers can use ITWS to plan traffic flow reconfiguration and to coordinate with personnel in the TRACONs, ATCTs, ARTCCs, and the ATCSCC to minimize cancellations and delays and sustain average daily capacity.

Program Plans FY 2007 – Performance Output Goals

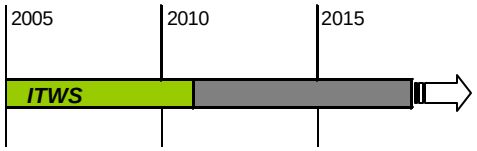
- Install ITWS with TCWF capability at Memphis, Dallas-Fort Worth, Orlando, and Detroit.
- Achieve Initial Operating Capability (IOC) for New York and Memphis ITWS.

Program Plans FY 2008-2011 – Performance Output Goals

- Install ITWS with TCWF capability at Cincinnati, Pittsburgh, Phoenix, Philadelphia, Salt Lake City, and Cleveland.
- Retrofit TCWF capability at 11 ITWS sites.
- Achieve IOC at Dallas-Fort Worth, Orlando, and Detroit.
- Achieve IOC for Cincinnati, Pittsburgh, Phoenix, Philadelphia, Salt Lake City, and Cleveland.

System Implementation Schedule

Integrated Terminal Weather System (ITWS)
First ORD: October 2003 -- Last ORD: 2010



2A12, FAA TELECOMMUNICATIONS INFRASTRUCTURE (FTI)

FY 2007 Request $28.0M

- FAA Telecommunications Infrastructure (FTI), C26.01-00

Program Description

This program will satisfy the need for increased telecommunications capacity at a lower cost than existing contracts. A new contract has been awarded to a single vendor to integrate the telecommunications needs of FAA facilities and provide systems to measure usage, so managers are aware of the cost and use of telecommunications services. It will enhance the FAA's ability to control costs by matching price to performance, while offering a broad range of telecommunications services. The program relies on a partnership between the FAA and a commercial service provider to obtain telecommunications services that meet FAA's performance specifications and provide necessary information security protections.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Organizational Excellence.**
- **FAA Objective 2 –** Improve financial management while delivering quality customer service.
- **FAA Performance Target 1** – Develop and implement a centrally managed cost control and productivity improvement program to lead the agency in reducing costs.

Relationship to Performance Target

The FTI program supports the FAA's organizational excellence goal by lowering the cost of providing telecommunications services within the FAA's NAS and non-NAS infrastructures. FTI eliminates the need to manage and operate multiple sub-networks. The cost of provisioning, operating, and maintaining telecommunications services provided by FTI will be lower than the telecommunications cost of operating and maintaining the legacy systems. The prices for access and transport services are competitive and exhibit economies of scale regarding bandwidth. Technological improvements support bandwidth sharing. Combining the bandwidth needs of multiple end-users will increase the efficiency of bandwidth usage and decrease the cost. Additional efficiencies are gained with FTI's Integrated Business Systems interface for ordering, provisioning, and tracking telecommunications services

Program Plans FY 2007 – Performance Output Goals

- Complete 332 site acceptances from the start of FY 2006 through the end of the 1st Qtr FY 2007.
- Complete 786 site acceptances from the start of FY 2006 through the end of the 2nd Qtr FY 2007.
- Complete 1,287 site acceptances from the start of FY 2006 through the end of the 3rd Qtr FY 2007.
- Complete 1,788 site acceptances from the start of FY 2006 through the end of the 4th Qtr FY 2007.

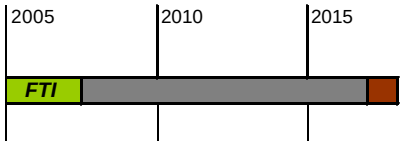
Program Plans FY 2008-2011 – Performance Output Goals

- Complete 332 site acceptances from the start of FY 2008 through the end of the 1st Qtr FY 2008.
- Complete full transition of the FTI (~5,000 services).

System Implementation Schedule

- The FTI program will acquire telecommunications services for critical NAS operations and mission support functions over the next 13 years.

FAA Telecommunications Infrastructure (FTI)
First site IOC: February 2004 -- Last site IOC: September 2008



2A13, OCEANIC AUTOMATION PROGRAM
FY 2007 Request $31.4M

- Advanced Technologies and Oceanic Procedures (ATOP), A10.03-00

Program Description

The ATOP program will replace oceanic air traffic control systems and procedures and modernize the Oakland, New York and Anchorage ARTCCs. ATOP fully integrates flight and radar data processing, detects conflicts between aircraft, provides data link and surveillance capabilities, and automates the manual processes used today. ATOP will provide a fully modernized oceanic air traffic control automation system, installation, testing, training, common procedures, and lifecycle system maintenance. The program office will conduct modeling and simulations to forecast benefits and, once ATOP is in operational use, will gather and document performance data and metrics to measure services for citizens, productivity, efficiency, and user satisfaction.

ATOP will allow the FAA to discontinue the use of the difficult communications and intensively manual processes that limit controller flexibility in handling airline requests for more efficient tracks over long oceanic routes. The program will provide the FAA the automation, Automatic Dependent Surveillance-Contract (ADS-C), and conflict resolution capability required to reduce aircraft separation from 100 nautical miles to 30 nautical miles. ATOP also allows the FAA to meet international commitments and helps the Agency avoid losing delegated airspace used by air carriers and military flights.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 3 –** Increase on-time performance of scheduled carriers.
- **FAA Performance Target 1 –** Through FY2010, maintain an 87.4 percent on-time arrive for all flights arriving at the 35 OEP airports no more than 15 minutes late due to NAS related delays.

Relationship to Performance Target

ATOP will allow properly equipped aircraft (i.e., ADS-C, Controller-Pilot Data Link Communication, Required Navigation Performance-4 nm) and qualified aircrews to operate using reduced oceanic separation criteria. This will enable more aircraft to fly optimal routes and enhance aircraft flight time (and fuel and payload) efficiency during oceanic legs of their flights. Reduced lateral (side-to-side) separation may provide space for additional routes between current locations or new direct markets. Reduced longitudinal (nose-to-tail) separation may provide more opportunities to add flights without delays (e.g., climbs, descents, reroutes or speed penalties.) ATOP will be implemented at three ARTCCs by FY 2006. In the ATOP Acquisition Program Baseline May 2001 Benefit Quotes, one of the ATOP benefits stated is fuel savings in gallons per flight. With ATOP being implemented in FY 2006 the data source and data is changing, therefore there is a need to analyze this data and provide a baseline and a model to show the fuel savings from ATOP and provide a meaningful metric for FY 2007. With the modeling and analysis of ATOP data during FY 2006, this fuel saving metric and others will be provided to show the benefit of the ATOP system.

Program Plans FY 2007 – Performance Output Goals

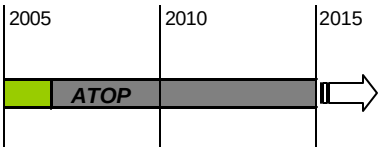
- Complete Anchorage ARTCC radar/procedural system Full Transition.
- Perform model enhancements of fuel burn and boundary crossing models to calculate baseline fuel efficiency for common market pairs.
- Conduct procedural system Independent Operational Test and Evaluation.

Program Plans FY 2008-2011 – Performance Output Goals

- Conduct radar system Independent Operational Test and Evaluation.
- Calculate baseline fuel efficiency for additional market pairs and for all Oakland, New York and Anchorage flights.
- Hardware refresh at the WHJTC, Oakland New York, and Anchorage ARTCC.

System Implementation Schedule

Advanced Technologies and Oceanic Procedures (ATOP)
First site IOC: June 2004 -- Last site IOC: March 2006



2A14, AIR TRAFFIC OPERATIONS MANAGEMENT SYSTEM (ATOMS)

FY 2007 Request $6.0M

- A, ATOMS Local Area/Wide Area Network, M29.00-00
- B, Schedule Optimization Tool, M29.01-00

A, ATOMS LOCAL AREA/WIDE AREA NETWORK, M29.00-00

Program Description

The Air Traffic Operations' Management System (ATOMS) was created to meet Air Traffic's business information needs. It consists of a multi-tiered enterprise architecture named BizNAS. The BizNAS goal is to provide a series of integrated systems, infrastructure and procedures that will coordinate the collection, storage, correlation and delivery of enterprise and operational information to the Air Traffic Organization (ATO). At the core of the infrastructure is a common data architecture. This architecture is necessary to support standardized data gathering and dissemination from legacy systems, interactive web products and emerging facility systems such as Cru-X/Labor Distribution Reporting, AT Executive Information System and the Air Traffic Common Analysis Tool.

Air Traffic performance measures captured via ATOMS is the following:

- Facility Activities (Visual Flight Rules, Instrument Flight Rules, AFSS, ARTCC, ATCT, and TRACON)
- Delays (by operator class, by cause)
- Deviations (air and surface)
- Errors (air and surface)
- Financials (total obligated dollars)
- Staffing (Total Work Force, Controller Work Force, Operations' Staff)
- Unsatisfactory Condition Reports (Total open, new, closed)

The ATOMS consists of local area networks, data receivers, and/or personal computers at over 500 field sites. It provides field facilities with a "front end" method for data collection and means to transmit operational data to headquarters for inclusion in national databases and decision support systems. The data is essential to the accurate and complete analysis of air traffic systems' operation and the development and evaluation of system changes to improve system safety and efficiency. The data is collected at field

facilities, and then made available for management decisions affecting the air traffic control system. ATOMS will create an Operational Data Store that can be accessed by both field and headquarters personnel. Currently the field does not have access to the data to adequately assess its performance

Custom designed facility level applications employing techniques gained through the reengineering of administrative processes are needed to collect data to support the agency's cost accounting system while at the same time reducing the current level of administrative workload. Data collection systems and a methodology for moving the data upstream will complete the distribution system. Accuracy and standardization will occur by collecting data only once, at the source (field facilities), and then efficiently sharing that data through BizNAS tools. Once data systems are established and distributed, effective analytical tools will be provided to assist the Air Traffic Organization in making business-based decisions for tomorrow's outcomes.

The ATOMS initiative, in conjunction with the ATO Information Technology Management program, will lead the Air Traffic Organization well into the 21st century with tools that make ATO enterprise information widely and immediately available to those who need it.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Organizational Excellence**.
- **FAA Objective 1 –** Make the organization more effective with stronger leadership, increased commitment of individual workers to fulfill organization-wide goals, and a better prepared, better trained, safer, diverse workforce.
- **FAA Performance Target 1 –** Increase Employee Attitude Survey scores in the areas of management effectiveness and accountability by at least 5 percent by FY 2010.

Relationship to Performance Target

The ATOMS program provides a robust and secure enterprise information solution by standardizing and facilitating the collection, delivery and analysis of the ATO's operational and business data. This solution provides a series of analytical views allowing for performance metrics to be analyzed and assessed for trends, predictability, etc. Within the ATO, managers and staff employees at every level need the tools necessary to manage the performance of an operationally-dynamic, rapidly-changing safety and service-based organization. The most visible benefits ATOMS provides to the ATO workforce is the following:

- Integrated information systems that are business and performance based
- Systems that save time, workload and resources
- Data entry occurring in one place at one time only
- Standardized data sets at all business sites
- Rapid access to information from these sites via a single enterprise portal

B, SCHEDULE OPTIMIZATION TOOL, M29.01-00

Program Description

The Schedule Optimization Tool will be used by the Air Traffic Operations Management System (ATOMS) to improve the scheduling of the air traffic workforce. It will be a web-based software tool that uses the operational data collected by ATOMS to optimize workforce schedules and track effectiveness of decisions. It will also be used to develop workforce contingency plans for unique events in air traffic demand.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Organizational Excellence**.
- **FAA Objective 2 –** Improve financial management while delivering quality customer service.
- **FAA Performance Target 1 –** Develop and implement a centrally managed cost control and productivity improvement program to lead the agency in reducing costs.

Relationship to Performance Target

Adopt a standardized approach to controller scheduling and demonstrate the feasibility of controlling costs through optimization and provide decision-making capability to assist in managing labor and training costs.

Program Plans FY 2007 – Performance Output Goals

- Findings and recommendations to ATO Executive Council.
- National Implementation to ATO Centers and Terminals.

Program Plans FY 2008-2011 – Performance Output Goals

- National Implementation beyond Air Traffic facilities.

2A15, VOICE SWITCHING AND CONTROL SYSTEM (VSCS)

FY 2007 Request $15.0M

- Voice Switching and Control System (VSCS) – Tech Refresh, C01.02-01

Program Description

VSCS Technology Refresh program will replace and upgrade the obsolete, non-supportable VSCS hardware and software in all 21 ARTCCs. In addition, the real time Field Maintenance/Testing System at the FAA William J. Hughes Technical Center (WJHTC) will be upgraded to a mirror image of an operational site. Also, the Training System at the FAA Academy is continuously being upgraded to ensure real-time training for all operational AT/AF personnel. These upgrades will ensure that the air-to-ground and ground-to-ground communications capabilities are reliable and available for separating aircraft, coordinating flight plans, and transferring information between air traffic control facilities in the en route environment. To date, this program has replaced all control systems located at ARTCCs as well as the WJHTC and FAA Academy. Equipment has been procured to replace the Contractor Traffic Simulation Unit test bed at the FAA WJHTC, which is used to perform system-loading requirements for all formal baseline verifications of VSCS functions. Future technology refresh activities will ensure that the VSCS continues to provide reliable voice communications to support both current and future en route operations.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 3 –** Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

Relationship to Performance Target

The VSCS Technology Refresh program supports the greater capacity goal by improving the system reliability of en route voice communications for both current and future operations by replacing and upgrading the obsolete, non-supportable VSCS hardware and software. In addition, there are ongoing site expansions at specific ARTCCs to support greater capacity.

Program Plans FY 2007 – Performance Output Goals

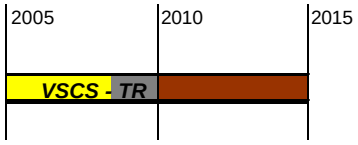
- Complete development of and testing for the Video Display Monitor Replacement system.
- Complete Workstation Upgrade implementation.
- Implement replacement strategy; refurbish Control Shelf and Common Equipment power supplies.
- Initiate procurement activities for internal Local Area Network (LAN).
- Initiate procurement activities for Programming Language for Microcomputers (PLM) to C software conversion.
- Initiate procurement activities for position gateway.
- Initiate procurement activities for new en route switch program per Joint Resources Council (JRC) recommendation.

Program Plans FY 2008-2011 – Performance Output Goals

- Complete delivery of all Video Display Monitor Replacement systems.
- Continue design work on internal LAN, PLM to C software conversion, and position gateway.
- Study Fiber Optic Tie Trunk Power Supply refurbishment.
- Complete JRC investment decision for new en route switch program.
- Complete testing of internal LAN, PLM to C software, and position gateway.
- Initiate delivery of modifications that result from internal LAN, PLM to C conversion, and position gateway.
- Initiate possible Fiber Optic Tie Trunk power supply refurbishment.
- Conduct source selection for new en route switch program per JRC recommendation.

System Implementation Schedule

Voice Switching and Control System (VSCS) - Tech Refresh
First site IOC: 2002 -- Last site IOC: 2008



2A16, EN ROUTE COMMUNICATIONS GATEWAY (ECG)

FY 2007 Request $4.2M

- En Route Communications Gateway - Technology Refresh, A01.12-02

Program Description

The En Route Communications Gateway (ECG) system, which replaced the legacy Peripheral Adapter Module Replacement Item, is the portal that conveys critical air traffic data to the Host Computer System and the Direct Access Radar Channel systems at the en route control centers (ARTCC). ECG increases the capacity and expandability of the NAS by enabling integration of new surveillance technology, introduction of new interface standards and data formats—including compatibility with ICAO standards—and connection to additional remote equipment such as radars. The ECG infrastructure provides the automation system capacity and expandability to support anticipated increases in air traffic and changes in the operational environment. Installing the ECG was a prerequisite to deploying the ERAM software and hardware necessary to provide those new services, systems, and capabilities.

The ECG approach to technology refresh sustains the capability of the ECG system and provides for purposeful evolution when opportunity permits. The ECG system was designed to ensure that the framework for supporting evolution or incorporating new capabilities or functionality was built in.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 1 –** Achieve an average daily airport capacity of 104,338 arrivals and departures per day by FY 2008 and maintain through FY 2010 at the 35 OEP airports.

Relationship to Performance Target

The ECG infrastructure provides the automation system capacity and extensibility to support anticipated increases in air traffic and changes in the operational environment. The ECG architecture is flexible and expandable and is designed to support the introduction of new services, systems, and capabilities within the NAS. For example, the ECG system provides the capacity to increase the quantity of surveillance sources monitored, eliminating possible areas of airspace where no backup surveillance capability exists

Program Plans FY 2007 – Performance Output Goals

- Identify technology refresh and obsolescence issues.
- Develop, install, test and implement solutions at 10 operational sites.

Program Plans FY 2008-2011 – Performance Output Goals

- Identify technology refresh and obsolescence issues.
- Develop, install, test, and implement solutions at 10 operational sites.

B. TERMINAL PROGRAMS

2B01, AIRPORT SURFACE DETECTION EQUIPMENT – MODEL X (ASDE-X)

FY 2007 Request $63.6M

- Airport Surface Detection Equipment – Model X (ASDE-X), S09.01-00

Program Description

ASDE-X is a modular surface surveillance system that processes multiple radar sources, multilateration, and Automatic Dependent Surveillance-Broadcast (ADS-B) sensor data to provide seamless airport movement area coverage and aircraft identification to air traffic controllers. ASDE-X is being deployed to airports with no surface surveillance systems and airports with Airport Surface Detection Equipment – Model 3/Airport Movement Area Safety System (ASDE-3/AMASS) systems. There are New Establishments (airports with no current surface surveillance capability), Replacements (airports where existing ASDE-3/AMASS systems will be replaced with ASDE-X), and ASDE-X Upgrade sites (airports where the ASDE-3/AMASS systems will be upgraded with ASDE-X capability). The main difference between the ASDE-X and ASDE-X Upgrade configurations is the surface surveillance transmitter/radar antenna. ASDE-X uses the new Surface Movement Radar while the ASDE-X Upgrade uses the existing operational ASDE-3 radar. ASDE-X is planned for deployment to 35 operational sites (10 new establishment, 4 replacement, and 21 ASDE-X Upgrade) and three support systems.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Increased Safety.**
- **FAA Objective 3 –** Reduce the risk of runway incursions.
- **FAA Performance Target 1 –** By FY 2010, reduce Category A and B (most serious) runway incursions to a rate of no more than 0.450 per million operations.

Relationship to Performance Target

The ASDE-X system provides air traffic controllers with a visual representation of the traffic situation on the airport surface movement area and arrival corridors in the form of aircraft and vehicle position information and flight identifications or call signs. This increased awareness of the situation on the airport surface movement area is essential in reducing runway collision risks and critical Category A & B runway incursions. The ASDE-X Safety Logic is an enhancement to the situational awareness provided by the ASDE-X system to air traffic controllers. ASDE-X Safety Logic uses surveillance information from ASDE-X to determine if the current and/or projected positions and movement characteristics of tracked aircraft/vehicles present a potential collision situation. Visual and audible alerts are provided to the controllers, which include critical information about the targets involved, such as ID and surface occupied.

Program Plans FY 2007 – Performance Output Goals

- Achieve Operational Readiness Date (ORD) at 4 out of 35 ASDE-X sites.
- Deliver 4 out of 35 ASDE-X systems.

Program Plans FY 2008-2011 – Performance Output Goals

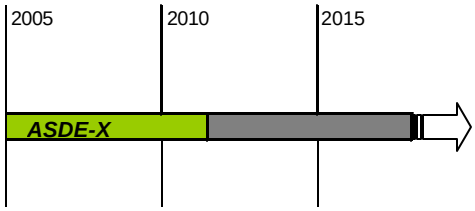
- Deliver 19 out of 35 ASDE-X systems.
- Achieve dual ASDE-3 Radar ORD at Los Angeles, CA.
- Achieve ORD at 24 out of 25 sites.

System Implementation Schedule

Airport Surface Detection Equipment – Model X (ASDE-X)

First IOC: June 2003, First ORD Oct 2003 -- Last ORD: May 2011

First Site Decom: October 2028 -- Last Site Decom: September 2029



2B02, TERMINAL DOPPLER WEATHER RADAR (TDWR) - PROVIDE

FY 2007 Request $12.5M

- Terminal Doppler Weather Radar – Service Life Extension Program, W03.03-01

Program Description

The primary mission of the TDWR is to enhance the safety of air travel through timely detection, reporting, and display of hazardous weather conditions—wind-shear events, microburst and gust fronts, and thunderstorms—in and near an airport's terminal approach and departure zone. TDWRs are installed at higher-density airports with high occurrences of thunderstorms and provide controllers current information on severe weather so that they can issue warnings to pilots. TDWRs are operational at 46 airports. TDWR weather data is also fed downstream to FAA automation systems that benefit capacity and to an increasing number of National Weather Service weather forecast offices.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Increased Safety.**
- **FAA Objective 1 –** Reduce the commercial airline fatal accident rate.
- **FAA Performance Target 1 –** Reduce the airline fatal accident rate by 80 percent from the 1994-1996 baseline to a rate of 0.010 per 100,000 departures by FY 2007.
- **FAA Performance Target 2 –** Reduce the three-year rolling average fatal accident rate below 0.010 by FY 2010.

Relationship to Performance Target

The TDWR SLEP contributes to safety goals by continuing TDWR service, improving TDWR software architecture integration and replacing old components with more reliable components, which will enable the TDWR to reliably operate nearer to the end of service life goal (2020).

Program Plans FY 2007 – Performance Output Goals

- Achieve operational status for the Direct Digital Controller rehost modification at the last 8 sites.
- Retrofit three prototype Direct Digital Controller rehost sites to production configuration.
- Procure 30 TDWR Radar Data Acquisition (RDA) mod kits and test enhanced algorithms.
- Modify 6 more TDWR sites with new elevation bearings and lube stations.
- Procure 2 TDWR antenna drive production systems and install one of them.

Program Plans FY 2008-2011 – Performance Output Goals

- Procure 25 and install 9 TDWR RDA mod kits.
- Modify 6 more TDWR sites with new elevation bearings and lube stations.
- Procure 18 and install 4 more TDWR antenna drive systems.
- FY-09 – Modify 18 more sites with RDA production mod kits; modify 6 more sites with new elevation bearings and lube stations; procure last 27 and install 10 more antenna drive systems.
- FY-10 – Modify 18 more sites with RDA production mod kits; modify 6 more sites with new elevation bearings and lube stations; install 10 more antenna drive systems.
- FY-11– Modify 6 more sites with new elevation bearings and lube stations; install 10 more antenna drive systems; install last two RDA production mod kits.

2B03, STANDARD TERMINAL AUTOMATION REPLACEMENT SYSTEM (STARS) (TAMR PHASE 1)

FY 2007 Request $49.2M

- Standard Terminal Automation Replacement System – Development and Procurement, A04.01-00
- Standard Terminal Automation Replacement System – Technology Refresh, A04.01-01
- Standard Terminal Automation Replacement System – Terminal Enhancements, A04.01-02

Program Description

STARS is a joint Department of Defense and Department of Transportation (FAA) program to modernize our nation's terminal air traffic control systems. The STARS is a digital radar and flight data processing and display system for use by air traffic controllers. The STARS investment replaces the aging air traffic control equipment at our ARTS IIIA and other high profile terminal radar approach control facilities (TRACONs) and in our airport air traffic control towers. Air traffic controllers use STARS to ensure the safe separation of military and civilian aircraft, throughout the nation's airspace. This investment is part of a phased approach to modernizing our terminal air traffic control equipment. The program brings in state-of-the-art systems featuring large-screen, high-resolution, color displays, and is expandable to accommodate future air traffic growth and new hardware and software. STARS addresses technology, mobility, and security gaps with the existing systems.

As in any commercial-off-the-shelf (COTS)-based system, an aggressive hardware "technology refreshment" program is absolutely essential. Planning for technology refreshment enables identification and qualification of affected components before they become inoperable due to obsolescence. For example, the processor currently used in STARS is no longer available from the manufacturer. The consequences of obsolescence have collateral implications in the areas of engineering, training, maintenance and many other disciplines. Any plan for technology refreshment must include budget for adequately addressing solutions to all "life cycle" problems.

STAR software enhancements are required to meet the daily demands of the dynamic terminal air traffic control environment. In addition, systems such as STARS that use commercially-based software are faced with the constant challenge of planning for the evolution of new operating systems. Keeping pace with the evolution of commercial software and planning for the qualification and maintenance of new operating systems requires recognition in the STARS budget. Any plan for "enhancements" must include budget for adequately addressing solutions to all "life cycle" problems.

On April 20, 2004, the FAA JRC directed a phased approach to terminal automation modernization. The JRC approved STARS as a replacement for 47 critical site systems within three years. Thus, the current scope of the STARS program encompasses deployment to the remaining designated sites, as well as sustainment and enhancement of those 47 sites. This budget supports the life cycle maintenance of 47 STARS sites.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 3 –** Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

Relationship to Performance Target

As of June 30, 2005, STARS continues to sustain an adjusted equipment availability of 99.996% at all 37 operational sites. STARS is fully operational at 13 (out of a total of 35) OEP airports, with plans to deploy to 5 additional sites during FY 2006 and FY 2007. In addition to high availability, STARS has an improved controller data display and data manipulation capabilities, enabling controllers to increase aircraft density without compromising safety. STARS is meeting or exceeding all stated performance goals.

Program Plans FY 2007 – Performance Output Goals

- By the end of FY 2007, at least 44/47 STARS will be operational within the NAS. (Note: 3/47 site deployments are still TBD pending availability of new TRACONS under construction.

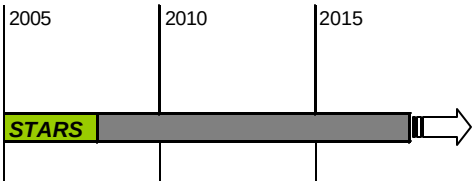
Program Plans FY 2008 –2011 - Performance Output Goals

- Continue to meet performance goals by sustaining and enhancing the operational STARS systems and take advantage of new emerging technologies.

System Implementation Schedule

Standard Terminal Automation Replacement System (STARS)

First site IOC: October 2002 -- Last site IOC: September 2007



2B04, TERMINAL AUTOMATION PROGRAM
FY 2007 Request $13.8M

- A, Terminal Sustainment, A03.04-01
- B, Flight Data Input/Output (FDIO) Replacement, A01.11-01
- C, Electronic Flight Strip System (EFSTS), A03.04-03

A, TERMINAL SUSTAINMENT, A03.04-01

Program Description

The Terminal Sustainment program will continue to maintain existing FAA Terminal Automation Systems, including the Automation Radar Terminal Systems (ARTS) Models IIIA, IIE and IIIE and associated displays. Terminal Sustainment provides support for the Common ARTS and ARTS-IIIA systems. By ensuring the availability of the systems, the controller's productivity will be potentially maximized by providing automated tools depicting aircraft positions in order for them to separate aircraft.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 3 –** Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

Relationship to Performance Target

Terminal Sustainment reduces outages and thus reduces delays. Maintaining the Common ARTS and ARTS-IIIA systems, by addressing hardware and/or software issues, will ensure the availability of the systems and support maintaining NAS capacity.

Program Plans FY 2007 – Performance Output Goals

- Continue to fix problem reports and perform hardware maintenance on ARTS IE, IIE and IIIE.
- Reduce the number of Program Trouble Reports.
- Continue to support ARTS IIIA until STARS units replace them.

Program Plans FY 2008-2011 – Performance Output Goals

- Continue to fix problem reports and perform hardware maintenance on ARTS IIE and IIIE systems.
- Reduce the number of Program Trouble Reports.

B, FLIGHT DATA INPUT/OUTPUT (FDIO) REPLACEMENT, A01.11-01

Program Description

The Flight Data Input/Output Replacement program replaces existing system components that produce the flight data information on planned routes of travel for aircraft. It transfers and prints the flight data information to assist controllers in anticipating the arrival of aircraft in the sector under their control. The FDIO systems are used at all but approximately 70 of the 464 control towers and all TRACON facilities in operations. The FDIO Replacement configuration provides redundancy by installing 2 Remote Control Units. New thermal printers will replace the aging 9 pin dot matrix printers. Additionally, extensive lightning protection will provide grounding for all FDIO peripherals which prevents damage to the FDIO system. The FAA also provides FDIO acquisition and engineering support to U.S. Department of Defense (DoD) facilities in accordance with a memorandum of agreement

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 3 –** Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

Relationship to Performance Target

The FDIO program replaces end-of–life, obsolete FDIO equipment with modern COTS equipment, thereby reducing potential outages and delays.

Program Plans FY 2007 – Performance Output Goals

- Continue to procure hardware and software (30 systems) to replace equipment in the field (30% complete).
- Continue to support FDIO sites.

Program Plans FY 2008-2011 – Performance Output Goals

- Continue to fix procure hardware and software (140 systems) to replace equipment in the field (96% complete).
- Continue to support FDIO sites.

C, ELECTRONIC FLIGHT STRIP SYSTEM (EFSTS), A03.04-03

Program Description

EFSTS is a system that provides for the transfer of flight progress strips from an Air Traffic Control Tower (ATCT) to a TRACON. When implemented, the system will allow the users to go from paper to a total electronic strip transfer system at some or all of the ATCT towers.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 1** – Achieve an average daily airport capacity of 104,338 arrivals and departures per day by FY 2008 and maintain through FY 2010 at the 35 OEP airports.

Relationship to Performance Target

The EFSTS system will allow the controller to receive information faster, therefore increasing the capacity and safety of clearing departing aircrafts. With faster and more accurate data, the controllers can clear departing aircrafts faster, thus reducing the number of delays.

Program Plans FY 2007 – Performance Output Goals

- Procure demonstration systems and data.

Program Plans FY 2008-2011 – Performance Output Goals

- Procure demonstration systems and data.

2B05, TERMINAL AIR TRAFFIC CONTROL FACILITIES – REPLACE

FY 2007 Request $124.0M

- Airport Traffic Control Tower (ATCT)/Terminal Radar Approach Control (TRACON) Establish/Sustain/Replace – ATCT/TRACON Replacement, F01.02.00

Program Description

The FAA provides air traffic control services from more than 500 ATCT and TRACON facilities and must continually replace these buildings to ensure an acceptable level of air traffic control services and to meet current and future operational requirements. The average age of control towers is 27 years, and some are 40 years old. As the volume and complexity of terminal air traffic control increases, so does the need to have additional positions in the ATCT/TRACON facilities (i.e., helicopter positions, Visual Flight Rule traffic advisories, runway monitors, etc.). Control towers built 20 years ago do not meet today's operational requirements. In addition, terminal facilities must conform to current building codes and design standards.

ATCT/TRACON facilities that cannot meet present-day operational requirements are to be replaced. The FAA will also determine the cost and operational benefit of combining TRACON facilities that have common boundaries. New facilities will accommodate future growth, current building codes and design standards. The FAA will fund terminal facility replacement programs in four phases to provide sound financial management of these projects. Phase I includes site selection and advanced engineering; phase II incorporates electronic equipment procurement, environmental studies, and site adaptation; phase III is facility construction; and phase IV continues funding for equipment installation, demolition, and restoration.

Studies are underway to determine if it would be feasible to further collocate some of TRACON and ARTCC facilities to increase efficiency and reduce the amount of automation equipment needed to run them. Both efforts for center and terminal facility collocations will require extensive analysis and detailed planning before any actions can be taken.

Relationship of Program to FAA Strategic Goal, Objective and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 3 –** Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

Relationship to Performance Target

The Terminal Air Traffic Control Facilities program contributes to the FAA greater capacity goal by replacing ATCTs to meet current and future operational requirements. Some replacements are required to accommodate growth in air traffic; others are needed to provide added space for new equipment; and, in some cases, the tower must be replaced to ensure that controllers have an unobstructed view of the runways and taxiways. The average control tower is 27 years old, and as volume and complexity of terminal air traffic control increases, so does the requirement for additional positions in ATCT/TRACON facilities.

New and replacement facilities support the FAA capacity goal: to provide a system that meets or exceeds air traffic demand. Strategic location, adequate height, and cab size of an airport traffic control tower will provide an efficient working environment, enable controllers to achieve an aerial view of the airport, and enable them to see aircraft at the outer aircraft movement areas.

Program Plans FY 2007 – Performance Output Goals

- Complete planning and design at five sites.
- Start construction at eight sites.
- Continue construction at two sites.
- Install equipment at eight sites.
- Decommission/restore one site.

Program Plans FY 2008-2011 – Performance Output Goals

- Continue siting studies, design, site work, construction, electronic design, electronic installation, decommission and restoration.
- Provide Other Transaction Agreement support.

2B06, ATCT/TERMINAL RADAR APPROACH CONTROL FACILITIES – IMPROVE

FY 2007 Request $44.2M

- ATCT/TRACON Establish/Sustain/Replace – ATCT/TRACON Modernization, F01.01-00
- Advanced Facility Planning, F02.10-00

Program Description

The FAA must continually upgrade and improve various terminal facilities and equipment to provide an acceptable level of service and to meet current and future operational requirements. Upgrades and improvements include replacing obsolete facility components such as roofs, air conditioners, tower cab consoles, and rehabilitating administrative and equipment space to accommodate facility expansion. Upgrades also include additional operating positions; training space and base-building construction; as well as replacement of undersized generators and environmental equipment to support current and future demand.

Since their construction, ATCT/TRACON facilities have had to address additional operational and safety requirements, including upgraded accessibility, hazardous materials, seismic, and security requirements. Facility improvements will incorporate these new requirements and ensure that there is an orderly transition, with minimal impact on existing operations, to the new configuration for relocated and replaced equipment. The power, heating, ventilation, and air-conditioning systems at many of the terminal facilities must be upgraded to handle both the new and old equipment during the in-service change-out. Successful transition of these projects to the new configurations is critical. In many towers, there is no room for additional equipment at some locations; therefore, base buildings must be provided or expanded. According to an initial evaluation by the U.S. Army Corps of Engineers, a number of FAA ATCT/TRACON facilities do not meet current seismic code criteria. This program has initiated building improvements to bring the facilities up to a level to withstand a seismic event by complying with current seismic standards in accordance with Executive Order 12941 that mandates compliance with the Interagency Committee on Seismic Safety in Construction and the "DOT Policy for Seismic Safety of New and Existing DOT Owned or Leased Buildings".

Relationship of Program to FAA Strategic Goal, Objective and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 3 –** Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

Relationship to Performance Target

The ATCT/TRACON Modernization program upgrades and improves facilities to support the NAS modernization strategy for achieving efficient aerospace systems and operations. These projects will enable facilities to meet current operational, environmental, and safety needs economically instead of

replacing or relocating the entire facility. This effort will result in a smooth and orderly transition of new equipment into FAA terminal facilities, minimizing disruption of the operating system. This program will also improve the operational efficiency and environmental systems of obsolete and deteriorated ATCT/TRACON facilities. The improvements modernize facility infrastructure such as electrical distribution systems, heating and air-conditioning, and structural problems, to minimize outages that would delay air traffic.

Program Plans FY 2007 – Performance Output Goals

- Conduct 12 Facility Assessments and planning projects (e.g., Life Cycle Assessments, Conditions Assessments, etc.) to determine requirements.
- Initiate 65 new projects to improve, repair, and sustain projects at ATCT/TRACON facilities.
- Conduct analysis on the longer-term plans for facilities.

Program Plans FY 2008-2011 – Performance Output Goals

- Continue facility sustainment, repair, and modernization work within available funding.
- Initiate 65 modernization related projects in FY 2008.
- Initiate 65 modernization related projects in FY 2009.
- Initiate 70 modernization related projects in FY 2010.
- Initiate 70 modernization related projects in FY 2011.

2B07, TERMINAL VOICE SWITCH REPLACEMENT (TVSR)/ENHANCED TERMINAL VOICE SWITCH (ETVS)

FY 2007 Request $11.3M

- Voice Switches – Terminal Voice Switch Replacement (TVSR), C05.02-00

Program Description

The ongoing TVSR program involves replacing the aging, obsolete voice switches in the Air Traffic Control Towers and Terminal Radar Approach Control facilities. Voice switches enable air traffic controllers to communicate with aircraft as well as other air traffic control facilities. The TVSR program ensures that controllers continue to have reliable voice communications in the terminal environment. The program consists of several multiyear equipment contracts for voice switches, including; Small-Tower Voice Switches, Enhanced Terminal Voice Switches, Rapid Deployment Voice Switches model IIA, Voice Switch Bypass Systems, and Interim Voice Switch Replacement. To date, this program has replaced 368 (189 small and 179 large) of 421 terminal switches throughout the NAS. The program also provides the contract vehicles for the FAA to procure voice switch equipment for new and modernized terminal facilities.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 3 –** Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

Relationship to Performance Target

The TVSR program supports the greater capacity goal by improving system reliability of terminal voice communications by replacing aging electronic switches with modern digital equipment.

Program Plans FY 2007 – Performance Output Goals

- Deliver 1 previously procured terminal voice switch.
- Deliver 10 new voice switches to terminal facilities.

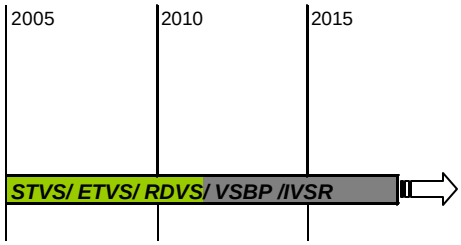
Program Plans FY 2008-2011 – Performance Output Goals

- Deliver terminal voice switches at the rate of 10 per year to various FAA terminal facilities.

System Implementation Schedule

Small-Tower Voice Switches (STVS), Enhanced Terminal Voice Switches (ETVS), Rapid Deployment Voice Switches (RDVS) model IIA, Voice Switch Bypass Systems (VSBP), and Interim Voice Switch Replacement (IVSR)

First site IOC: 1994 (2006) -- Last site IOC: 2011



2B08, NAS FACILITIES OSHA AND ENVIRONNEMENTAL STANDARDS COMPLIANCE

FY 2007 Request $25.0M

- Fire Life Safety for Air Traffic Control Tower and Environmental and Occupational Safety and Health Compliance, F13.03-00

Program Description

Safety and health concerns at FAA facilities have resulted in regulatory actions against the FAA and disruptions to NAS operations. Monthly, there are about ten to twenty disruptions of NAS operations reported to the National Operations Control Center involving environmental and occupational safety and health (EOSH) issues. Since 2000, the Occupational Safety and Health Administration (OSHA) has conducted 70 inspections of FAA facilities and issued 254 citations, including 170 citations listed as "serious." For example, OSHA inspected the Memphis System Management Office in February 2001 and issued 20 citations; 16 were serious. One of the violations involved improper storage of oxygen cylinders, which created an explosion hazard. In 2003, the Environmental Protection Agency (EPA) fined the Mike Monroney Aeronautical Center $67,210 for Resource Conservation and Recovery Act violations related to hazardous waste handling. In addition, EPA imposed a $99,000 fine on the William J. Hughes Technical Center for Clean Air Act violations. The FAA Administrator signed an agreement with OSHA to upgrade 385 airport traffic control towers by FY 2009 to meet OSHA standards of fire life safety. The estimated cost is $121 million from FY 1997 to FY 2009. This program implements FAA Executive Orders 12088 and 12196, 32 public laws and negotiated labor agreements in occupational safety and health, environmental, fire life safety, and energy conservation in accordance with FAA Executive Order 12902 and the 1992 Energy Policy Act. The Energy Conservation/Efficiency program updates design specifications and implements renewable energy sources. The result will be a safe, healthful, and environmentally sound work place.

The Fire Life Safety program implements fire life safety upgrades at ATCTs. Additionally, it develops fire prevention plans and trains tower occupants, resident engineers, maintenance technicians and employees on maintenance requirements for new systems.

Relationship of Program to DOT Strategic Goal, Objective, & Performance Target

- **DOT Strategic Goal – Environmental Stewardship.**
- **DOT Objective 1 –** Adopt transportation policies and promote technologies that reduce or eliminate environmental degradation.

Relationship to Performance Target

This program supports the Environmental Stewardship goal by implementing Executive Orders, public laws, and negotiated labor agreements that address occupational safety and health, environmental issues, fire life safety and energy conservation requirements.

Program Plans FY 2007 – Performance Output Goals

- Initiate fire life safety upgrades for 27 ATCTs.
- Perform safety hazard analysis on at least one NAS in-service equipment/system.
- Finalize all existing EOSH training standards.
- Finalize annual inspection implementation guidance.
- Conduct one radiation program field review.
- Perform Arc Blast analysis survey at an ARTCC.
- Standardize fall protection programs throughout the ATO.
- Implement hearing conservation guidance.
- Conduct one Indoor air quality program field review.
- Develop guidance on the shipment of oil filled equipment.
- Conduct at least one asbestos control program field review.

Program Plans FY 2008-2011 – Performance Output Goals

- Initiate fire life safety upgrades for 24 ATCTs.
- Perform safety hazard analysis on at least two NAS in-service equipment.
- Support acquisition management organizations by providing Occupational Safety and Health and environmental technical assistance on five systems.
- Finalize existing EOSH training standards into uniform course titles.
- Establish consistent annual inspection information for selected NAS facilities.
- Develop implementation guidance for radiation safety at surveillance radar sites.
- Develop national Arc Blast analysis implementation guidance.
- Develop implementation guidance for fall protection program with respect to rescue from heights.
- Conduct at least one field review for hearing conservation program.
- Conduct at least one indoor air quality program field review.
- Conduct at least one environmental compliance program field review.
- Continue to perform safety hazard analyses on NAS in-service equipment.
- Continue implementing written safety programs.

2B09, AIRPORT SURVEILLANCE RADAR (ASR-9)

FY 2007 Request $15.9M

- Terminal Radar (ASR) Program – ASR-9/Mode S SLEP, Phase 1A, S03.01-04
- Terminal Radar (ASR) Program – ASR-9/Mode S SLEP, Phase 1B, S03.01-05

Program Description

The ASR-9 and Mode S systems were designed and fielded in the 80's/90's and are quickly reaching the end of their service life. The NAS relies on the continuation of these services until 2025 in order to attain the goals in the FAA Flight Plan and NAS Architecture. Studies conducted in 2000 – 2003 revealed that continued investment is required to sustain the current level of surveillance services provided by these systems through 2025. The results of an investment analysis conducted in November 2003 indicated that a Service Life Extension Program (SLEP) for both systems was the preferred solution. The FAA developed a multi-phased strategy that addresses critical, near-term sustainment issues, identified as those elements that represent immediate, serious risk to this service (Phase 1), while continuing to perform the business case analysis to support a long-term strategy that will provide a long-term solution (Phase 2).

The first phase has been further segregated into two segments: Phase 1, Segment A; and Phase 1, Segment B. A final investment decision was granted by the JRC for Phase 1, Segment A in September 2004, which will implement modifications to the ASR-9 antenna at selected sites to mitigate the risk of structural collapse, while addressing OSHA issues and replacing the obsolete control and monitoring equipment at all sites. A final investment decision was granted by the JRC for Phase 1, Segment B in June 2005, which will implement modifications to the ASR-9 transmitter at all sites to improve the reliability and maintainability of these systems.

The second phase of the Program was intended to address those activities necessary to provide long-term solutions to extend the service life of both the ASR-9 and Mode S systems. However, a review of the performance, reliability, maintainability, and operation of these systems, coupled with the FAA's investigation of alternative technologies as well as decreasing budgets, has recently resulted in a decision to discontinue planning for Phase 2

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 3 –** Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

Relationship to Performance Target

The ASR program contributes to the goal of greater capacity by maintaining existing airport capacity and meeting future air traffic demands. The ASR-9 serves the airports with high activity levels and will not be replaced by the ASR-11. The Sustainment projects being performed will address the most critical performance issues in order to improve system reliability, thus preventing delays due to radar outages at the high activity airports.

Program Plans FY 2007 – Performance Output Goals

Phase 1A

- Continue installation, testing, and acceptance of ASR-9 external modifications, including the completion of antenna tusk reinforcement modifications at all ASR-9 sites supporting the OEP airports.
- Complete assembly and delivery of ASR-9 RMS replacement units.
- Deliver replacement Radar Intelligence Tool units to all Mode S sites.

Phase 1B

- Produce, install, and test the first article unit of the ASR-9 transmitter modification.
- Begin operational testing and evaluation of the ASR-9 transmitter modification.
- Begin production of the ASR-9 transmitter modification kits and planning for installation of the kits at all ASR-9 sites.

Program Plans FY 2008-2011 – Performance Output Goals

Phase 1A

- Complete installation of external antenna modification kits at operational sites.

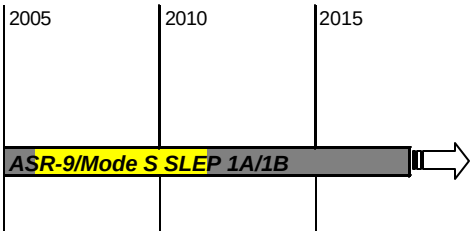
Phase 1B

- Complete operational testing and evaluation of the ASR-9 transmitter modification.
- Commence and complete installation of the ASR-9 transmitter modification at operational sites.

System Implementation Schedule
Phase 1A: ASR-9/Mode S External Modifications.
Phase 1B: ASR-9 Transmitter Modification.

Airport Surveillance Radar - Model 9 (ASR-9) / Mode Select (Mode S) Service Life Extension Program (SLEP) Phase 1A/1B

Phase 1A: First site ORD: January 2006 -- Last site ORD: January 2009
Phase 1B: First site ORD: March 2008 -- Last site ORD: February 2011



2B10, TERMINAL DIGITAL RADAR (ASR-11)

FY 2007 Request $44.1M

- Terminal Radar (ASR) Program – ASR-11 – ASR-7/ASR-8 Replacement, DoD Takeover, New Establishments, S03.02-01
- Terminal Radar (ASR) Program – ASR-11 – Tech Refresh, S03.02-04

Program Description

The ASR-11 radar system replaces the aging ASR-7/8s and Air Traffic Control Beacon Interrogator (ATCBI) - Model 4/5s with a single, integrated digital primary and secondary radar system. The ASR-11 radar interfaces with legacy automation systems, as well as digital automation systems, such as the Standard Terminal Automation Replacement System (STARS) and planned Terminal Automation Modernization and Replacement (TAMR) systems.

The ASR-11 radar system also provides six-level National Weather Service calibrated weather capability. This six-level weather data presented on air traffic control displays will result in significant improvement in situational awareness for both controllers and pilots for weather in the proximity of the airport. This weather capability is not available with the existing ASR-7/8 radar systems.

The ASR-11 radar system will also replace the aging infrastructure with new radar facilities, including advanced grounding/bonding and lightning protection systems, digital or fiber optic telecommunications, emergency backup power supplies, and enhanced physical security.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1** – Increase capacity to meet projected demand.
- **FAA Performance Target 3** – Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

Relationship to FAA Performance Target

The ASR-11 radar system benefits the FAA Strategic Capacity Goals by providing improved reliability and maintainability performance over existing legacy systems. The ASR-11 system provides technology that will improve mean time to repair and mean time between outage performances over the existing ASR-7/8 and ATCBI-4/5 systems. The resulting improvement in operational availability, due to the reduced number of occurrences and duration of outages, will reduce aircraft delays that result from these outages. The reduction in aircraft delays will in turn reduce the cost to the airlines and flying public in the form of passenger value time and aircraft direct operation costs.

Program Plans FY 2007 – Performance Output Goals

- Procure 2 ASR-11 radar systems.
- Procure 5 site constructions and start construction at 4 radar sites.
- Deliver radar systems to 11 sites.
- Achieve Contractor Acceptance Inspection (CAI) at 16 sites.
- Achieve IOC at 13 sites.
- Achieve ORD at 10 sites.
- Initiate 11 ASR-7/8 site deactivations.

Program Plans FY 2008-2011 – Performance Output Goals

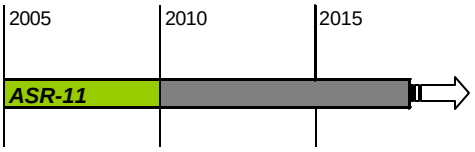
- Procure 3 site constructions.
- Start construction at 10 radar sites and deliver radar systems to 14 sites.
- Achieve CAI at 17 sites.
- Achieve IOC at 26 sites and ORD at 38 sites.
- Initiate 26 ASR-7/8 site deactivations.

System Implementation Schedule

Airport Surveillance Radar - Model 11 (ASR-11)

First site ORD: December 2003 -- Last site ORD: September 2009

First Site Decom: December 2023 -- Last Site Decom: September 2029



2B11, DOD/FAA FACILITIES TRANSFER

FY 2007 Request $2.3M

- DoD/FAA ATC Facility Transfer/Modernization – Original Program, F04.01-00
- DoD Base Closures, F04.02-00

Program Description

This program involves transferring Department of Defense (DoD) airspace and military facilities to the FAA. NAS modernization work is also essential, for military systems to meet NAS requirements. For each transfer/modernization, the FAA engineers, constructs, installs, and certifies NAS systems. Types of systems modernized by the program include communications, weather surveillance, navigation, power, automation, and security systems. An example of project activities for Adak, Alaska includes:

- Rehabilitate localizer, glide slope, and power system;
- Install modernized precision approach path indicator (PAPI), runway end indicator lights (REIL), medium-intensity approach lighting system (MALS); backup distance measuring equipment (DME), localizer software, glideslope software, C3 radio system, 2 antenna towers and security monitoring system;
- Conduct 2 Environmental Due Diligence Audits;
- Disposal of 2 buildings; and
- Replace air conditioner.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 3 –** Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

Relationship to Performance Target

This program increases capacity to the air traveling community and enhances the reliability of air traffic NAS equipment after DoD base closures and airspace transfers. It also provides improvements and modernization to some NAS facilities, as well as maintenance and upgrades of some NAS infrastructure, which results in increased capacity to the air traveling community.

2B12, PRECISION RUNWAY MONITOR

FY 2007 Request $2.6M

- Precision Runway Monitor (PRM), S08.00-00
- Precision Runway Monitor (PRM) – Multilateration Technology, S08.01-01

Program Description

The PRM system is a highly accurate electronic scan (e-scan) radar that tracks and processes aircraft targets at a 1-second update rate (as opposed to 4.8 seconds with conventional radars). The PRM system provides controllers with automatic alerts and high-resolution displays that, in conjunction with specific procedures, enable pilots to fly simultaneous independent approaches to parallel runways spaced less than 4,300 feet apart. Without PRM parallel runways can be used for simultaneous independent approaches only during Visual Meteorological Conditions. With PRM, simultaneous independent approaches can be made to closely spaced parallel runways under Instrument Meteorological Conditions. The inability of pilots to conduct such approaches during adverse weather reduces throughput and increases delays.

Initially, five candidate airports with closely spaced (750 feet to 4,300 feet) parallel runways were selected to receive production PRM systems. The contract was awarded in March 1992 for five production PRM systems, associated site and depot spares, and site installations. To date, all the systems have been manufactured and procured under this contract. The City of San Francisco procured a sixth system for the San Francisco International Airport. PRM systems have been installed and commissioned at Minneapolis, St. Louis, Philadelphia, New York, San Francisco, and Cleveland. Due to operational issues, the New York system was removed and utilized to resolve supportability issues with the other five systems. The Cleveland PRM installation, as well as three additional system installations for Atlanta, Detroit, and a site yet to be determined, was mandated by Congress in FY 2003. To support Atlanta triple approach operation planned for FY 2007, the agency awarded Raytheon in January 29, 2005 a new contract to procure, install, and checkout one additional PRM system.

Evaluation of Multilateration (MLAT) technology as a possible replacement for the E-scan PRM at Detroit (DTW) and yet to be determined sites was initiated, as required by FY 2005 Congressional language. The MLAT subsystem will provide accurate position and identification information on transponder equipped aircraft and surface vehicles by "multilaterating" on signals transmitted by the transponder.

Relationship of Program to FAA Strategic Goal, Objective, and Performance

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 -** Increase capacity to meet projected demand.
- **FAA Performance Target 1 –** Achieve an average daily airport capacity of 104,338 arrivals and departures per day by FY 2008 and maintain through FY 2010 at the 35 OEP airports.

Relationship to Performance Target

The PRM program supports the FAA greater capacity goal by allowing more aircraft to land during Instrument Meteorological Conditions at airports with closely spaced parallel runways. Normally, the capacity of an airport to handle arriving aircraft is reduced when visibility is restricted, which results in delays. PRM provides a high update rate radar capability that feeds a very accurate display of respective aircraft positions, enabling controllers to ensure that simultaneous independent approaches to parallel

runways less than 4,300 feet apart are safe during low visibility conditions. Aircraft approaching an airport without PRM during low visibility conditions must be alternated along parallel approach paths, which diminishes the airport's effective capacity and causes delays.

Program Plans FY 2007 – Performance Output Goals

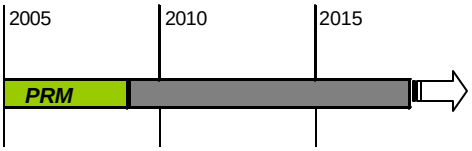
- Achieve ORD of Atlanta PRM system.
- Complete Detroit site construction and install equipment.
- Complete Detroit PRM-A (multilateration) developmental testing.

Program Plan FY 2008-2011 – Performance Output Goals

- Complete Detroit PRM-A Operational Test, Achieve IOC, ORD, and Commissioning.

System Implementation Schedule

Precision Runway Monitor (PRM)
First site IOC: 1997 -- Last site IOC: 2008



2B15, RUNWAY STATUS LIGHTS
FY 2007 Request $13.7M

- Runway Status Lights (RWSL), S11.01-01

Program Description

The RWSL use airport surveillance sensors (ASDE-X, ASDE-3, and ASR-9) and safety logic to improve pilot situational awareness in the airport operating areas. The system includes two types of in-pavement lighting indicators to improve situational awareness. The first type of lighting indicators are Runway Entrance Lights which advise pilots when the runway is unsafe for entry or crossing at that location. The second type of lighting indicators are Take-off Hold Lights which advise pilots when the runway is unsafe for take-off due to traffic on the runway or about to enter the runway.

Relationship of Program to FAA Strategic Goal, Objective, and Performance

- **FAA Strategic Goal – Increased Safety.**
- **FAA Objective 3 -** Reduce the risk of runway incursions.
- **FAA Performance Target 1 –** By FY 2010, reduce Category A and B (most serious) runway incursions to a rate of no more than 0.450 per million operations.

Relationship to Performance Target

The FY 2004 reported number of A and B incursions - 28 – represents a rate of 0.440 per million operations. FY 2005 runway incursion status reporting shows 27 category A and B incursions through August 31 – this equates to a rate of 0.470 per million operations. The overall year to date trend suggests an increasing rather than decreasing rate and while the numbers are not statistically conclusive their volatility suggests that additional effort is required to ensure that the Flight Plan performance target is achieved. The establishment of additional installations to accrue incremental RWSL functionality will contribute toward the accomplishment of the Flight Plan performance target.

Program Plans FY 2007 – Performance Output Goals

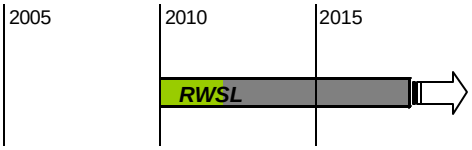
- Complete site survey for three initial sites.
- Order systems for five airports.
- Begin construction work for three systems.

Program Plan FY 2008-2011 – Performance Output Goals

- Complete construction activities for the five systems ordered in FY 2007.
- Order and complete construction activities for an additional system for a total of six.
- Six initial sites ORD.
- 10 additional sites surveyed.
- 10 sites ordered.
- Seven sites installed.

System Implementation Schedule

Runway Status Lights (RWSL)
First site IOC: 2010 -- Last site IOC: TBD



2B16, TERMINAL AUTOMATION MODERNIZATION/REPLACEMENT PROGRAM (TAMR PHASE 2)

FY 2007 Request $30.5M

- Terminal Automation Modernization Replacement (TAMR) – Phase 2, A04.05-00
- Terminal Automation Modernization Replacement (TAMR) – Phase 2 Tech Refresh, A04.05-02

Program Description

The existing terminal automation systems are the critical backbone of the information network for our nation's airports. The automation system collects information from radar and weather sensors, along with flight plan information for each aircraft and integrates information into a graphical and textual presentation that is used by several thousand air traffic controllers to safely and efficiently direct aircrafts at or near airports.

The Terminal Automation Modernization and Replacement system will replace/upgrade the existing automation to a state-of-the-art digital, radar and flight data processing and display system, providing new air traffic control "workstations" to complete the color displays and robust commercially available processors.

Out year planning for TAMR Phase 2 Technical Refresh is under development and future action and activities are pending JRC decision.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1** – Increase capacity to meet projected demand.
- **FAA Performance Target 3** – Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

Relationship to FAA Performance Target

By providing state-of-the-art equipment, outages are reduced, thereby reducing delays at four (4) Automation Radar Terminal Systems (ARTS) IIIE sites and the associated airports.

Program Plans FY 2007 – Performance Output Goals

- Procure hardware for the four ARTS IIIE, Full Digital ARTS Displays sites in Chicago, Denver, Minneapolis, and St. Louis.
- Begin deployment of replacement automation systems to the five ARTS IIE sites in West Palm Beach, Pensacola, Wichita, Anchorage and Corpus Christi.

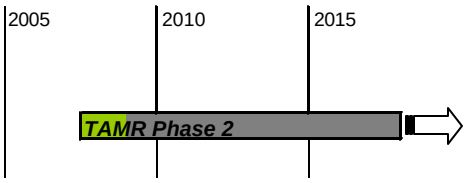
Program Plans FY 2008-2011 – Performance Output Goals

- Deploy hardware for the four ARTS IIIE, Full Digital ARTS Displays sites in Chicago, Denver, Minneapolis, and St. Louis.
- Complete deployment of replacement automation systems to the five ARTS IIE sites in West Palm Beach, Pensacola, Wichita, Anchorage and Corpus Christi.
- Begin planning investment analysis and business case development activities for Phase 2, Technical Refresh.

System Implementation Schedule

Terminal Automation Modernization/Replacement (TAMR Phase 2)

First site IOC: 2007 -- Last site IOC: 2008



2B17, NAS VOICE SWITCH

FY 2007 Request $1.0M

- National Airspace System (NAS) Voice Switch, C05.03-01

Program Description

The NAS Voice Switch (NVS) will be a real-time, critical part of the Air Traffic Control infrastructure that provides the connectivity for efficient communications among air traffic controllers, pilots, and ground personnel. ATC communications service affects safety, traffic flow capacity, and efficiency. The NVS will replace the service that is currently provided by 17 different voice switch baselines. Much of the focus will be on reducing the duplication of functions and costs currently existing among the many systems providing ATC communications; this being driven by the demand to reduce operating, maintenance, and technology refresh costs. In conjunction with current technologies, a common architecture platform is currently being sought to resolve these issues.

The current switch technology will not support the expected future NAS operations of either reduced facilities or such concepts as dynamic re-sectorization and off-loading during non-peak operations. The NVS will support current and future ATC operations as envisioned by both government and industry forecasters.

Relationship of Program to FAA Strategic Goal, Objective, and Performance

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 3 –** Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

Relationship to Performance Target

Voice switches provide a critical function to ATC communications by configuring and controlling communications between and among ATC service providers and users. ATC communications service affects safety, traffic flow capacity, and efficiency. The NVS program supports the greater capacity goal

by improving the system reliability of voice communications for both current and future operations by replacing and upgrading the obsolete, non-supportable hardware and software. The NVS program will also be capable of being flexible to support the reduction of facilities and work load adjustments.

Program Plans FY 2007 – Performance Output Goals

- Initiate investment analysis activities.
- Initiate engineering studies and independent government costing.

Program Plans FY 2008-2011 – Performance Output Goals

- Complete investment analysis activities.
- Achieve executive decision to initiate program.
- Initiate industry prototyping.
- Finalize solution analysis and costing.
- Achieve JRC decision to proceed with program.
- Start source selection.
- Complete industry prototyping.
- Award contract.
- Initiate development of system.

2B18, WEATHER SYSTEMS PROCESSOR (WSP)

FY 2007 Request $1.0M

- ASR Weather Systems Processor (ASR-WSP) – Technology Refresh/Product Improvement W09.01-00

Program Description

The ASR-WSP "WSP" improves safety by providing local weather situational awareness for ATC tower controllers and Terminal Radar Approach Control personnel. WSP efficiently uses ASR-9 search radar for the weather sensor function. The WSP generates microburst and windshear alerts, detects precipitation and predicts gust fronts and storm-cell motion before they impact runway/flight operations. To cost-effectively improve flight safety, the FAA placed WSPs at medium-sized, ASR-9 equipped airports in lieu of the more expensive TDWR. All 34 WSPs were made operational between 1999 and FY 2005. After seven years of service life, many commercial components of the WSP have been discontinued. Replenishment studies estimate service will be lost due to a lack of spare parts within three years unless new commercial sources of spares are qualified, additional parts procured and computer technology refreshed. Phase 1 of the technology refresh program starting in FY 2007 will replace failing and obsolete hardware enabling the system to operate until 2013. Phase II addresses the remainder of WSP service life.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Increased Safety.**
- **FAA Objective 1 –** Reduce the commercial airline fatal accident rate.
- **FAA Performance Target 1 –** Reduce the airline fatal accident rate by 80 percent from the 1994-1996 baseline to a three-year rolling average rate of 0.010 per 100,000 departures by FY 2007.
- **FAA Performance Target 2 –** Reduce the three-year rolling average fatal accident rate below 0.010 per 100,000 departures by FY 2010.

Relationship to Performance Target

Windshear is a known cause fatal aviation accidents. The WSP warns air traffic controllers of wind shear and microburst events throughout the terminal area so that pilots may avoid them in the air, on arrival and upon departure. Additional benefits to safety and capacity accrue through WSP gust front and storm

motion predictions that allow both ATC tower and TRACON to coordinate responses to traffic flow changes during hazardous weather.

Program Plans FY 2007 – Performance Output Goals

- Develop requirements for WSP technology refresh.
- Procure prototype.
- Install and test software changes .
- Prepare NAS Change Proposal and System Support Modification.

Program Plans FY 2008-2011 – Performance Output Goals

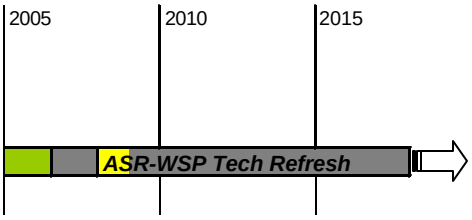
- Implement Phase I Tech Refresh at 34 sites plus five support sites (100%).

System implementation schedule and replacement system name

- ASR Weather Systems Processor (ASR-WSP) has commissioned at 33 of 34 sites with the last commissioning (Tucson, AZ) planned in FY06.

Airport Surveillance Radar (ASR) Weather Systems Processor (ASR-WSP) – Technology Refresh/Product Improvement

First site ORD: 2008 -- Last site ORD: 2008



2B19, NAS INFRASTRUCTURE MANAGEMENT SYSTEM

FY 2007 Request $5.0M

- NAS Infrastructure Management System (NIMS) – Phase 2, M07.02-00
- NAS Infrastructure Management System (NIMS) – Phase 2 Tech Refresh, M07.02-01

Program Description

The NIMS provides the FAA with the next generation of tools, services, and operational capabilities to support the management, operation, and maintenance of the NAS. The NIMS design implements a secure three-tiered architecture, consisting of a National Operations Control Center, three field service area Operations Control Centers, approximately 30 Service Operations Centers, and approximately 380 System Support Centers. It supports more than 6,000 users that manage, operate, and maintain more than 30,000 air traffic control facilities. The NIMS provides support and coordination of maintenance activities and event management capabilities via a common logging system and a centralized logistics/maintenance system across the NAS. The NIMS also provides remote maintenance, monitoring, and control capabilities for selected equipment. It supports the migration of the FAA's maintenance approach from an equipment-outage, reactionary-based system to a proactive service management system.

Relationship of Program to FAA Strategic Goal, Objective, and Performance

- **FAA Strategic Goal – Organizational Excellence.**
- **FAA Objective 2 -** Improve financial management while delivering quality customer service..
- **FAA Performance Target 1 –** Develop and implement a centrally managed cost control and productivity improvement program to lead the agency in reducing costs. .

Relationship to Performance Target

The NIMS contributes to the FAA's organizational excellence goal by enhancing cost-control measures and improving decision-making based on reliable data. The NIMS will optimize management, operation, and maintenance of the NAS to reduce equipment-related delays, data entry time, and travel. The NIMS will track performance against any cost metrics related to maintaining the NAS.

Program Plans FY 2007 – Performance Output Goals

- Enterprise Manager Critical Design Review – Nov 2006.
- Enterprise Manager Development Complete – April 2007.
- Enterprise Manager Integration Test Complete – June 2007.

Program Plans FY 2008-2011 – Performance Output Goals

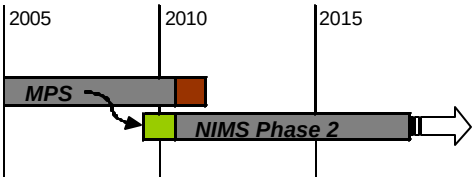
- Peer System Interface Critical Design Review – October 2007.
- Enterprise Manager Remote Maintenance Monitoring Code Conversion Complete – September 2008.
- Install Peer System Interface – Set #1 – July 2008.
- Install Peer System Interface – Set #2 – August 2009.
- Enterprise Manager Operational Test Complete – September 2009.
- Central Service Area IOC – December 2009.
- Western Service Area IOC – February 2010.
- Eastern Service Area IOC – April 2010.
- Install Peer System Interface – Set #3 – August 2010.
- Enterprise Manager to Resource Manager Interface Development Complete – January 2011.
- Enterprise Manager to Resource Manager Interface Testing Complete – April 2011.
- Fully Operational in all NAS Service Areas – June 2011.

System Implementation Schedule

NAS Infrastructure Management System (NIMS) Phase 2

First Site Decom: October 2010 -- Last Site Decom: March 2011

First site IOC: November 2009 -- Last site IOC: April 2010



C. FLIGHT SERVICE PROGRAMS

2C01, AUTOMATED SURFACE OBSERVING SYSTEM (ASOS)

FY 2007 Request $5.0M

- Automated Surface Weather Observation Network (ASWON) – ASOS – Pre-Planned Product Improvements (P3I), W01.02-02

Program Description

The ASWON is an umbrella program that consists of the following systems: the Automated Weather Observing System (AWOS), ASOS, Automated Weather Sensors Systems (AWSS), Standalone Weather Sensors (SAWS), and ASOS Controller Equipment Information Display System (ACE-IDS). The primary purpose of ASWON is to support FAA and the National Weather Service modernization by automating the surface weather observation to meet the needs of pilots, operators and air traffic personnel without incurring the high costs of labor-intensive manual surface weather observations.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 3** – Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

Relationship to Performance Target

The ASWON program supports the FAA greater capacity goal by supplying automated surface weather observations to meet the needs of pilots, operators, and air traffic personnel. The network includes the AWOS, ASOS, AWSS, SAWS, and ACE-IDS or data displays.

Program Plans FY 2007 – Performance Output Goals

- Implementation of Ice-free wind sensors.
- Development of ceilometers.
- Implementation of enhanced precipitation sensors.

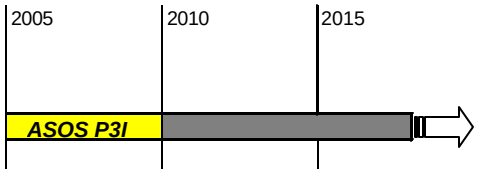
Program Plans FY 2008-2011 – Performance Output Goals

- Implementation of ceilometers.
- Implementation of enhanced precipitation sensors.

System Implementation Schedule

Automated Surface Observing System (ASOS) - Pre Planned Product Improvement (P3I)

First site ORD: 2005 -- Last site ORD: 2010



2C02, FSAS OPERATIONAL AND SUPPORTABILITY IMPLEMENTATION SYSTEM (OASIS)

FY 2007 Request $8.3M

- Operational and Supportability Implementation System (OASIS) for Flight Service Automation System (FSAS), A07.00-00

Program Description

The OASIS system replaces the existing FSAS. It enables flight service specialists to provide weather and flight information more efficiently to general aviation pilots. The existing FSAS equipment is 1970s technology and is difficult to maintain and support. OASIS provides software based on modified commercial-off-the-shelf (COTS)/non-development item products and COTS hardware. It is a leased service that replaces all existing FSAS hardware and software. This replacement enhances the current FSAS operational capabilities and incorporates the Interim Graphic Weather Display System. Additionally, new ergonomic equipment consoles were installed.

As result of the A-76 competition, OASIS will no longer be required once the transition to Lockheed Martin's Flight Services-21 (FS-21) service is complete. However, OASIS will continue to be sustained at the existing AFSSs until transition to FS-21 is complete. Completion of the transition to Lockheed Martin's FS-21 is scheduled to occur in July 2007. Phase out of the OASIS will consist of removal of all hardware from the 16 operational AFSS sites and the 2 support sites, and its return to the lease service provider.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Increased Safety.**
- **FAA Objective 2 –** Reduce the number of fatal accidents in general aviation.
- **FAA Performance Target 1–** By FY 2009, reduce the number of general aviation and nonscheduled Part 135 fatal accidents to no more than 319 (from 385, which represents the average number of fatal accidents for the baseline period of 1996-1998).

Relationship to Performance Target

The FSAS OASIS program contributes to the FAA safety goal by enabling flight service specialists to provide improved weather and flight planning information to pilots through the use of enhanced functional capabilities and integrated graphic weather displays.

Program Plans FY 2007 – Performance Output Goals

- Sustain OASIS as Government Furnished Equipment at remaining operational and support sites as required by the Lockheed-Martin (OMB AFSS A-76 competition winner) Flight Services 21 integration/transition schedule.
- De-install all remaining OASIS sites per the Lockheed-Martin integration/transition schedule for Flight Services 21 and complete OASIS contract close-out.

Program Plans FY 2008 – 2011 Performance Output Goals

- None, OASIS program close out in FY 2007.

2C03, FLIGHT SERVICE STATION (FSS) MODERNIZATION

FY 2007 Request $6.0M

- A, Flight Service Facilities – AFSS Facilities Sustainment, F05.03-00
- B, Flight Services Facilities – Alaska FSS Modernization, F05.04-01

A, Flight Services Facilities – AFSS Facilities Sustainment, F05.03-00

Program Description

The Automated Flight Service Station (AFSS) Facilities Sustainment program improves and modernizes flight service facilities to provide a safe working environment for flight service specialists, technicians and staff personnel at the 3 Alaskan AFSSs and 14 FSSs. Projects include, but are not limited to:

- Ceilings, floors, walls, doors and roofs
- Electrical and power systems
- Fire alarm and detection systems
- Heating, Ventilation, and Air-Conditioning (HVAC) systems
- Parking lots, sidewalks and security fencing
- Plumbing

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Increased Safety.**
- **FAA Objective 2 –** Reduce the number of fatal accidents in general aviation.
- **FAA Performance Target 1–** By FY 2009, reduce the number of general aviation and nonscheduled Part 135 fatal accidents to no more than 325 (from 385, which represents the average number of fatal accidents for the baseline period of 1996-1998).

Relationship to Performance Target

The AFSS Facilities Sustainment program contributes to the FAA's increased safety goal by improving and modernizing the AFSS/FSS infrastructure which includes installing Uninterruptible Power Systems, HVAC systems, roofs, structural improvements and fire/life/safety systems. These improvements ensure continued safety for flight service personnel as well as reliable and efficient service. A safe and modern working environment allows air traffic control specialists to accept flight plans and provide pilot weather briefings without environmental disruptions or distractions. The pilot weather briefings include current and forecast

meteorological and aeronautical information and along with the other services provided by the specialists are key safety efforts that have a significant role in preventing general aviation accidents.

Program Plans FY 2007 – Performance Output Goals

- Initiate and/or continue infrastructure improvements at Fairbanks, Juneau and Kenai AFSSs.
- Continue infrastructure upgrades at Dillingham, Ketchikan and Sitka FSSs.

Program Plans FY 2008-2011 – Performance Output Goals

- Complete required infrastructure improvements and power upgrades at Alaska sites.

B, Flight Services Facilities – Alaska FSS Modernization, F05.04-01

Program Description

Given a successful Joint Resources Council/Executive Council investment decision during FY 2006, the Alaska Flight Service Station (FSS) Modernization program will encompass a new architecture design for both functional/operational equipment and facilities. The program will maximize the use of new technology to reduce operating costs and increase service accessibility. Additionally, the program will include modernizing and collocating facilities and personnel to achieve maximum productivity and cost efficiency.

The Alaskan FSS Modernization program will provide software and hardware that results in increased productivity and improved quality of service through integrating key flight planning and weather briefing functions including weather graphics products, automatic data population, increased multi-tasking capability, and improving processing speed. The automated weather, aeronautical, and flight planning updates will be integrated with Notice-to-Airmen and flight planning databases and made available to specialists and pilots via a web portal. The web portal will also provide access to the Juneau Airport Weather System information, weather cameras, and Alaskan airport and site photos.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Increased Safety.**
- **FAA Objective 2 –** Reduce the number of fatal accidents in general aviation.
- **FAA Performance Target 2 –** By FY 2009, reduce accidents in Alaska for general aviation and all Part 135 operations from the 2000-2002 average of 130 accidents per year to no more than 99 accidents per year.

Relationship to Performance Target

The Alaska FSS Modernization program directly contributes to the FAA's increased safety goal by increasing the availability and capabilities of the current flight service systems. The current systems, such as Model One Full Capacity, do not efficiently meet current operational requirements or general aviation needs. The Alaska FSS Modernization program will provide enhanced functionality and integrated flight planning and weather data for ATC Specialists and pilots. Improved accessibility to required data by pilots in remote locations will be achieved via a web portal.

Program Plans FY 2007 – Performance Output Goals

- Complete development of requirements and specification documentation per FY 2006 JRC decision.
- Complete industry-coordinated Screening Information Request documentation.

Program Plans FY 2008-2011 – Performance Output Goals

- Conduct acquisition and initiate implementation activities.
- Complete implementation of Alaskan FSS Modernization equipment and facilities architecture.
- Declare Operational Readiness at all Alaskan FSS Modernization facilities.

D. LANDING AND NAVIGATIONAL AIDS PROGRAMS

2D01, VHF OMNI-DIRECTIONAL RANGE (VOR) WITH DISTANCE MEASURING EQUIPMENT (DME)

FY 2007 Request $5.0M

- Very High Frequency Omni-directional Range (VOR) Collocated with Tactical Air Navigation (VORTAC), N06.00-00

Program Description

This is a national program to provide equipment enhancements, relocations, and replacements to ensure that the Very High Frequency Omni-directional Range/Distance Measuring Equipment (VOR/DME) and VOR/Tactical Air Navigation System [TACAN] (VORTAC) facilities can function as intended until the ground-based VOR navigational system can be partially or fully decommissioned and the transition to the Global Positioning System is completed. When VOR signal transmission deterioration occurs due to site encroachment as tree growth, construction of bridges, buildings, and so forth, the FAA must restore these facilities to their full service. Converting flight restricted VOR sites to a Doppler VOR (DVOR) configuration mitigates operational system changes and corrects signal deficiencies. This program replaces, relocates, converts, and modifies VOR facilities (including VOR/DME and VORTAC) to improve VOR performance and effectiveness

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 3 –** Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

Relationship to Performance Target

Replacing, relocating, or converting VOR and VORTAC facilities increases NAS system efficiency. These facilities are experiencing signal deterioration due to various environmental factors, which negatively impacts system efficiency.

Program Plans FY 2007 – Performance Output Goals

- Retrofit approximately 25 TACAN Kits.
- Convert approximately three VOR systems to DVOR.
- Relocate one VOR Antenna System.

Program Plans FY 2008-2011 –Performance Output Goals

- Retrofit approximately 25 TACAN Kits.
- Convert approximately three VOR systems to DVOR.
- Relocate one VOR Antenna System.
- Continue facility relocations, retrofits, conversions, and upgrades as required.

2D02, INSTRUMENT LANDING SYSTEMS (ILS) – ESTABLISH
FY 2007 Request $4.0M

- Instrument Landing Systems (ILS), N03.01-00

Program Description

The ILS program provides new, partial, and full Category I, II, and III instrument landing systems and associated precision approach equipment to the large and medium hub airports (and their associated reliever airports) that have precision approach needs. An ILS precision approach capability is composed of a grouping of electronic devices (i.e., localizers, glide slopes, distance measuring equipment, etc.) and ancillary aids (i.e., approach lighting systems, runway visual range indicators, etc.) that provide landing aircraft precise electronic guidance and visual aid information. This information enables aircraft to land in weather conditions that would otherwise be prohibited. ILS significantly increases the safety and capacity of landing aircraft in the NAS.

The ILS along with required Approach Lighting Systems (Approach Lighting System with Sequenced Flashing Lights Model 2 (ALSF-2) and Medium-intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR)), directly impact both system safety and capacity at equipped runways by providing the only approved, widely used, precision approach method in the U.S. of landing aircraft in adverse weather conditions. The ILS provides vertical and horizontal guidance information to the pilot to allow safe landings to touchdown and rollout. The approach lighting provides visual cues for the pilot to safely land an aircraft when conducting an instrument approach. The ability to land aircraft in Instrument Meteorological Conditions allows increased capacity to runways equipped with ILS precision approach.

The ILS and associated equipment enables a pilot approaching a runway to access precision guidance (horizontal, vertical, and distance) information. This information, in conjunction with visual navigational aids, helps guide the pilot to the runway. These systems are critical to an all-weather aviation system because they allow aircraft to approach and land in low-visibility conditions and during adverse weather conditions.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 1** – Achieve an average daily airport capacity of 104,338 arrivals and departures per day by FY 2008 and maintain through FY 2010 at the 35 OEP airports.

Relationship to Performance Target

Establishing ILS precision approach capability allows visual minimums to be lowered for landings and helps to maximize NAS use. Lowering visual minimums helps to increase airport capacity and the number of aircraft enplanements during low-visibility conditions.

Program Plans FY 2007 – Performance Output Goals

- Install one Category I ILS/MALSR.
- Install one Category II ILS/ALSF-2.

Program Plans FY 2008-2011 – Performance Output Goals

- Install two Category I ILS/MALSR.
- Install one Category II ILS/ALSF-2.
- Continue to deliver and install ILSs and associated Approach Lighting System equipment.

2D03, WIDE AREA AUGMENTATION SYSTEM (WAAS) FOR GPS

FY 2007 Request $122.4M

- Wide Area Augmentation System (WAAS), N12.01-00
- WAAS – Surveys and Procedures, N12.01-06
- WAAS – GLS Segment, N12.01-05

Program Description

The WAAS is an extremely accurate navigation system developed by the FAA for civil aviation. The WAAS system uses a set of government-maintained satellites, known as the Global Positioning System (GPS), to determine a precise navigation solution. The GPS alone is sufficient for aviation en route and non-precision approach uses. However, to use the GPS for vertical guidance and precision approach, civil aviation requires an additional level of safety from that provided by the GPS. WAAS technology allows user equipment to augment the computation of the GPS-derived position estimate and provide increased integrity, position accuracy, and reliability to support safe flight operations. Aviation users can use the WAAS for more efficient arrival, en route, and departure operations.

The WAAS uses a network of precisely located ground reference stations that monitor GPS satellite signals. These sites are distributed across the continental U.S. and Alaska, with four additional locations in Canada and five in Mexico. Information from these reference stations is collected and processed. As a result of this processing, an augmentation message is generated every second. The WAAS broadcasts the augmentation message to users across the U.S. and the Caribbean via leased navigation transponders on geostationary satellites. The WAAS broadcast message improves GPS-derived position accuracy from about 20 meters to 1.5 to 2 meters in both the horizontal and vertical dimensions. The WAAS also provides an inherent safeguard for timely notification of unreliable GPS or WAAS data. The WAAS-corrected signal provides navigation receivers with three-dimensional guidance that dramatically increases safety. The WAAS serves the NAS as a single, seamless navigation system.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Increased Safety.**
- **FAA Objective 2 –** Reduce the number of fatal accidents in general aviation.
- **FAA Performance Target 1 –** By FY 2009, reduce the number of general aviation and nonscheduled Part 135 fatal accidents to no more than 319 (from 385, which represents the average number of fatal accidents for the baseline period of 1996-1998)

Relationship to Performance Target

The WAAS will increase safety by reducing general aviation accident rates. To accomplish this, the WAAS program plans to provide WAAS enabled vertical guidance throughout the U.S. including precision approach capability for the entire continental U.S and most of Alaska. The FAA will install new Wide area Reference Stations in Alaska, Canada and Mexico to increase coverage. The Reference Stations in Alaska will be operational and provide additional coverage in 2006. They will aid the WAAS in accomplishing the performance target to reduce accidents in Alaska for general aviation and all Part 135 operations by 20 percent by FY 2008 (from the 2000-2002 average of 130 accidents per year to no more than 104 accidents per year).

Program Plans FY 2007 – Performance Output Goals

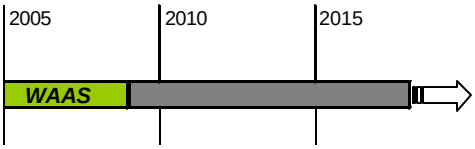
- Expand WAAS signal availability in Southwest Contiguous U.S. (CONUS) by December 2006.
- Expand the WAAS signal availability in Northeast CONUS by March 2007.
- Go through the JRC process for a decision on the Global Navigation Satellite System Landing System (GLS) segment of WAAS in FY 2007.

Program Plans FY 2008-2011 – Performance Output Goals

- Complete WAAS Full Localizer Precision with Vertical Guidance development by December 2008.
- Begin work for the GLS segment of WAAS (dependent on JRC decision) in FY 2009.

System Implementation Schedule

Wide Area Augmentation System (WAAS)
Commissioned July 2003 -- Full Precision: December 2008



2D04, RUNWAY VISUAL RANGE
FY 2007 Request $5.0M

- Runway Visual Range – Replacement/Establishment – N08.02-00

Program Description

The Runway Visual Range (RVR) provides pilots and air traffic controllers with critical meteorological visibility data that is used to decide whether or not it is safe to take off or land during limited visibility conditions. The new-generation RVR equipment is mounted on frangible, low-impact-resistant structures that break away if hit by aircraft during takeoff or landing. This program supports RVR sustain and replace efforts at sites where primary precision approach capability gaps are imminent due to emerging life-cycle issues (i.e., Reliability, Availability and Maintainability). This project also provides the equipment for new sites, including new runways and existing runways that have had an ILS installed.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 3 –** Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

Relationship to Performance Target

The RVR decreases diversions and delays at an airport by providing a more exact measure of the runway visibility. With a better measure of visibility, pilots are more informed in making choices about whether conditions at an airport are suitable for attempting a landing. The RVR information is also valuable in determining whether it is feasible to attempt a landing when all or some components of an ILS are not working. If only a portion of the ILS is working, the minimum visibility needed for an approach and landing are increased to non-precision levels. The RVR information also affects airline scheduling decisions and air traffic management decisions regarding whether flight plans should be approved for an aircraft to fly to an airport with low visibility.

Older RVR systems are maintenance intensive, resulting in excessive downtime, which negatively impacts airport traffic flow capacity. The replacement or upgraded equipment will require less maintenance and repair time, which reduces system downtime and consequently improves traffic flow capacity.

Program Plans FY 2007 – Performance Output Goals

- Procure and install six RVR systems.

Program Plans FY 2008-2011 – Performance Output Goals

- Procure and install 26 RVR systems.

2D06, APPROACH LIGHTING SYSTEM IMPROVEMENT PROGRAM (ALSIP)
FY 2007 Request $12.0M

- Visual Navaids – Approach Lighting System Improvement Program Continuation, N04.03-00

Program Description

The ALSIP is mandated by FAA Order 1811.4, "Systems Requirements Statement/Acquisition Authorization for the Approach Lighting System Improvement Program, ALSIP," which responded to a National Transportation Safety Board recommendation regarding the severity of accidents in several approach zones. The intent of the ALSIP is to bring approach lighting systems, built before 1975, up to current standards and to reduce the severity of landing accidents by retrofitting rigid structures with lightweight and low-impact resistant structures that collapse or break apart upon impact. High Intensity Approach Lighting System with Sequenced Flashing Lights Model 2 (ALSF-2) provides visual information on runway alignment, height perception, roll guidance, and horizontal reference for Category II and III Precision Approaches. Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR) provides visual information on runway alignment, height perception, roll guidance, and horizontal references for Category I Precision Approaches.

The ALSIP also: provides Approach Lighting Systems at Congressionally mandated Approach Lighting sites and responds to Congressional mandates to support the Rural Alaska Lighting Program (RALP)

Additionally, the Approach Lighting System Improvement Program:

- Retrofits rigid structure approach lighting systems with lightweight and low-impact resistant structures that collapse or break apart upon impact.
- In certain circumstances, replace aging approach lighting systems when retrofitting rigid structure approach lighting systems with lightweight and low-impact resistant structures.
- Provides MALSR for Category I approaches.
- Provides ALSF-2 for Category II/III approaches.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Increased Safety.**
- **FAA Objective 1 –** Reduce the commercial airline fatal accident rate.
- **FAA Performance Target 1 –** Reduce the airline fatal accident rate by 80 percent from the 1994-1996 baseline to a three-year rolling average rate of 0.010 per 100,000 departures by FY 2007. **FAA Performance Target 2 –** Reduce the three-year rolling average fatal accident rate below 0.010 per 100,000 departures by FY 2010.

Relationship to Performance Target

The ALSIP replaces rigid approach lighting structures with lightweight and low-impact resistant structures that collapse or break apart upon impact. This reduces damage to aircraft that may strike these structures during departure or landing which directly impacts the goal of reducing aircraft fatal accidents.

Program Plans FY 2007 – Performance Output Goals

- Install one previously procured ALSF-2 system.
- Install 10 previously procured MALSR systems.

Program Plans FY 2008-2011 – Performance Output Goals

- Install 36 previously procured MALSR systems.

2D07, DISTANCE MEASURING EQUIPMENT (DME)

FY 2007 Request $5.0M

- Distance Measuring Equipment (DME), N09.00-00

Program Description

The DME program replaces obsolete, tube-type DME with modern technology electronics that will improve operations and facility performance. DME provides the distance component of navigation information that pilots use to determine aircraft position. In addition, replacement equipment reduces maintenance and repair downtime required for DME systems. Low Power DME (LPDME) will replace older marker beacons at existing ILS locations and be implemented at new ILS established locations.

To support the Commercial Aviation Safety Team (CAST) requirements the DME program also involves procuring and installing DME systems at recommended sites. These systems will support the reduction of controlled-flight-into-terrain accidents at the most vulnerable locations in the NAS. There are 451 identified CAST DME sites, however, the FAA recommends implementing of only 177. This number would cover 80 percent of all operations. For safety reasons, the industry wants to discontinue using step-down or "dive-and-drive" non-precision approach procedures whenever possible. Using DME supports this operational goal for older, less equipped aircraft until they are outfitted with more advanced equipment.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 1 –** Achieve an average daily airport capacity of 104,338 arrivals and departures per day by FY 2008 and maintain through FY 2010 at the 35 OEP airports.

Relationship to Performance Target

The LPDME can provide distance information to more than 100 aircraft simultaneously, compared to the capacity of older systems of less than 50 aircraft, thus increasing the number of aircraft that can simultaneously approach a runway for landing.

Program Plans FY 2007 – Performance Output Goals

- Install approximately 20 LPDME Systems.

Program Plans FY 2008-2011 – Performance Output Goals

- Install approximately 25 LPDME Systems.
- Continue to procure and install LPDME systems to replace the legacy, tube-type equipment.

2D08, VISUAL NAVAIDS – ESTABLISH/EXPAND

FY 2007 Request $2.0M

- Visual Navaids – Visual Navaids for New Qualifiers, N04.01-00

Program Description

This program supports the procurement, installation and commissioning of Precision Approach Path Indicator (PAPI) systems and of Runway End Identification Light (REIL) systems. A PAPI provides visual approach slope information to pilots and enables them to make stabilized descent and approach clearance over obstructions. The PAPI is a visual glide slope indicator system consisting of four (4) lamp housing assemblies arranged perpendicular to the edge of the runway. The PAPI projects a pattern of red and white lights along the desired glide slope. A REIL is a non-precision visual aid that provides rapid and positive

identification of the approach end of a runway to the pilot. The REIL is a system consisting of two simultaneously flashing white lights, one on each side of the runway landing threshold.

The implementation of PAPI systems satisfies Commercial Aviation Safety Team (CAST) and Land and Hold Short Operations (LAHSO) requirements.

- There are 781 identified PAPI CAST requirements to implement a precision-like approach capability at runways served by air carriers. The precision-like approach capability will reduce the possibility of a controlled flight into terrain accident during approach and landing. The FAA plans to implement only the 170 highest priorities. This number would cover 80% of PART 121 operations. As of July 31, 2005 the FAA has implemented PAPI systems at 61 CAST PAPI locations. The FAA currently has 26 PAPI projects in progress.
- LAHSO is an air traffic control tool used to increase airport capacity by allowing simultaneous approaches on intersecting runways. PAPI lights are required at airports as they are approved for LAHSO.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 1** – Achieve an average daily airport capacity of 104,338 arrivals and departures per day by FY 2008 and maintain through FY 2010 at the 35 OEP airports.

Relationship to Performance Target

Installing PAPI lights at CAST locations will enhance system safety by reducing the probability of a Controlled Flight into Terrain accident during approach and landing. Furthermore, installing PAPI lights at airports approved for LAHSO will increase traffic flow capacity by allowing simultaneous approaches on intersecting runways. There are presently 155 PAPI systems located on runways at 33 of the 35 OEP designated airports. Installing the REIL system will reduce accidents because the system clearly identifies the runway's end to the pilot. There are presently 62 REIL systems located on runways at 27 of the 35 OEP designated airports.

Program Plans FY 2007 – Performance Output Goals

- Install five PAPI systems and five REIL systems.

Program Plans FY 2008-2011 – Performance Output Goals

- Install ten PAPI systems and nine REIL systems.
- Procure 14 and install 24 PAPI systems.
- Procure 21 and install 21 REIL systems.

2D09, INSTRUMENT APPROACH PROCEDURES AUTOMATION (IAPA)

FY 2007 Request $9.3M

- Instrument Approach Procedures Automation (IAPA), A14.00-00

Program Description

FAA's Aviation System Standards group maintains more than 14,000 instrument flight procedures in use at over 4,000 paved airport runways, accommodating requirements for both precision and non-precision approaches and departures. Maximizing implementation of ILS, Microwave Landing System, Global Positioning System Area Navigation (GPS/RNAV), and Wide Area Augmentation System (WAAS) will increase the capacity of the NAS and requires development of new and revised instrument flight procedures.

The existing IAPA system, which provides the basis for instrument flight procedure development and maintenance, has been heavily modified since being developed in the early 1970s and does not meet all of today's functional or integration requirements. The current IAPA system is barely able to support the existing inventory of 14,000 instrument flight procedures. A modern integrated system is needed to accommodate the expected growth of the NAS. Aviation System Standards has identified technological opportunities to replace IAPA and consequently increase functional capabilities, which raises the organization's ability to meet current and expected future demand for instrument flight procedures within the NAS. The new proposed IAPA system, to be called Instrument Flight Procedure Automation, will be more efficient and encompassing to support instrument flight procedures development. It will include functionality for approaches, missed approaches, circling, Standard Terminal Arrival Routes (STAR), airways, and departures. In addition, the Instrument Flight Procedure Automation will contain an integrated obstacle evaluation application, replacing a mostly manual process. Along with development of the new IAPA tools, integration across three Aviation System Standards organizations will be accomplished—National Flight Procedures Office, Flight Inspections Operations Office, National Aeronautical Charting Office—eliminating manual effort and duplication of data.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 3 –** Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

Relationship to Performance Target

The IAPA system ensures continued progress toward providing instrument flight procedures for all 35 OEP airports. This means adding vertical guidance procedures with lower visual minimums and supporting new initiatives such as Required Navigation Performance (RNP), RNAV, Lateral Precision with Vertical Guidance, WAAS, Distance Measuring Equipment (DME) /DME, RNAV Standard Instrument Departure, and STAR. Upgrading automation systems allows for efficiency and time savings in development of instrument procedures for approaching and departing an airport.

Program Plans FY 2007 – Performance Output Goals

- Produce 685 new instrument flight procedures, which include 500 RNAV instrument approach procedures with vertical guidance to support WAAS.
- Produce additional RNAV Standard Instrument Departures and STARs to support RNP, and additional RNP Special Aircrew and Aircraft Authorization Required procedures.
- Support the Alaska Capstone program with RNAV routes and procedures.
- Produce new flight procedures to support OEP new runways, runway extensions, and equipment additions.

Program Plans FY 2008-2011 – Performance Output Goals

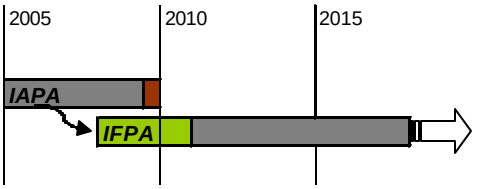
- Instrument Procedures Development System Module 1 will be operational.
- Instrument Flight Procedure module for en route will be operational.
- Airports and Navigational Aids module will be operational.
- System will be used to produce new instrument flight procedures and update existing procedures.

System Implementation Schedule

Instrument Flight Procedures Automation (IFPA)

Last site Decom: September 2010

First site IOC: February 2008 -- Last site IOC: September 2010



2D10, NAVIGATION AND LANDING AIDS – SERVICE LIFE EXTENSION PROGRAM (SLEP)

FY 2007 Request $5.0M

- Visual Navaids – Sustain, Replace, Relocate, N04.04-00

Program Description

Approximately fifty percent (50%) of all visual and navigation aids in the NAS are greater than 24 years old and exceed their 20 years of Economic Service Life by three or more years. Consequently, there is a high probability of increased outages due to life-cycle issues associated with the approach lighting systems currently in the NAS. This program supports the replacement, relocation or sustainment of the following visual navigation aids: High Intensity Approach Lighting System with Sequenced Flashing Lights (ALSF-2), Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR), and Runway End Identification Lights (REIL). The older, unsupportable visual navigation aids, will be sustained or replaced with new OSHA compliant equipment and systems.

Furthermore, the existing MALSR and ALSF-2 in-pavement steady burning approach lights are maintenance intensive. As a result there is excessive runway down time that negatively impacts airport capacity. Under this program the existing MALSR and ALSF-2 in-pavement steady burning approach lights will be replaced with new lamps requiring less maintenance, thus reducing runway down time.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 1 –** Achieve an average daily airport capacity of 104,338 arrivals and departures per day by FY 2008 and maintain through FY 2010 at the 35 OEP airports.

Relationship to Performance Target

Existing navigation and landing equipment is maintenance intensive, resulting in excessive runway downtime, which negatively impacts airport traffic flow capacity. The replacement or upgraded equipment will require less maintenance and repair time, which will reduce runway downtime and consequently improve traffic flow capacity.

Program Plans FY 2007 – Performance Output Goals

- Install two MALSR systems.
- Procure and install 27 REIL systems.
- Procure in-pavement steady burning approach lights.

Program Plans FY 2008-2011 – Performance Output Goals

- Install three ALSF-2 systems.
- Install nine MALSR systems.
- Install five Precision Approach Path Indicator systems.
- Procure MALSR and ALSF-2 in-pavement steady burning approach lights.

2D11, VASI REPLACEMENT – REPLACE WITH PRECISION APPROACH PATH INDICATOR
FY 2007 Request $3.0M

- Visual Navaids – Replace Visual Approach Slope Indicator (VASI) with Precision Approach Path Indicator (PAPI), N04.02-00

Program Description

The International Civil Aeronautical Organization (ICAO) has recommended that all International airports replace the Visual Approach Slope Indicator (VASI) lights with Precision Approach Path Indicators (PAPI) lights to standardize on the visual vertical guidance information. This program supports the procurement, installation and commissioning of PAPI systems in order to comply with this ICAO recommendation.

At the inception of this program there was approximately 1,387 older (pre-1970's) VASI at international and other validated locations requiring replacement. The first phase of the program addresses replacement of VASI systems at approximately 207 ICAO runways. The remaining complement of VASI systems in the NAS will be addressed after the ICAO requirement is fulfilled. As of July 31, 2005 we have completed approximately 107 ICAO VASI replacements and approximately 443 Non-ICAO VASI replacements with PAPI systems.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 3 –** Increase on-time performance of scheduled carriers.
- **FAA Performance Target 1 –** Through FY 2010 maintain an 87.4 percent on-time arrival for all flights arriving at the 35 OEP airports, no more than 15 minutes late due to NAS related delays.

Relationship to Performance Target

Replacing VASI with PAPI improves on-time performance by improving availability of the approach slope guidance systems used to help pilots touch down at the appropriate location on the runway. When these approach slope indicators fail, air traffic controllers cannot use certain procedures such as Land and Hold Short to increase airport capacity and prevent aircraft delays.

Program Plans FY 2007 – Performance Output Goals

- Fund shortfalls in ongoing PAPI projects.
- Fund 12 PAPI new start projects.

Program Plans FY 2008-2011 – Performance Output Goals

- Procure 30 PAPI systems.
- Install 104 PAPI systems.

E. OTHER ATC FACILITIES PROGRAMS

2E01, FUEL STORAGE TANK REPLACEMENT AND MONITORING
FY 2007 Request $5.8M

- NAS Facilities OSHA & Environmental Standards Compliance – Fuel Storage Tanks, F13.01-00

Program Description

The FAA Fuel Storage Tank (FST) Program designs, fields and maintains fuel storage systems that support critical FAA operations across the NAS. The FST systems include the storage tank (both above ground and underground tanks containing a variety of liquids: gasoline, diesel, propane, oils, glycol, etc.); the flow

piping and control devices (pipe, hoses, pumps, valves, etc.); electronic leak detection and inventory control devices; and electronic/electrical system operation devices (control boards, technician operations stations, switched relays, etc.). The FST Program active inventory includes over 3000 FST systems and historical data is retained on over 1400 previously closed/removed systems.

The majority of FAA storage tanks are used as fuel repositories for emergency electrical generator operations. The emergency generators provide NAS facilities with an alternative power supply during periods of commercial power company outages. A loss of integrity on any FST component will affect the operational capacity of the emergency generator systems and may ultimately result in a total facility failure.

Storage tanks have historically contained materials that could cause an adverse environmental impact or result in personal injury if accidentally released. In response to the risk of accidental release, the US federal government, the various State legislatures, local county governments and city jurisdictions have all passed statutes specifying the minimum requirements for the construction, installation, removal, and operations of storage tank systems. Additional regulations affecting storage system operations have been established under the jurisdiction of state and local building codes, fire protection codes, airport operating authority requirements, and occupational safety and health acts.

The FAA FST program strives to achieve these operational readiness and regulatory compliance requirements in all program operations. A primary focus of sustaining the critical operations capacity and mitigating the risk of accidental release is replacement of FST system components based on a lifecycle management protocol. To assure that fielded systems achieve the goals, the FST Program, (in consultation with numerous companion stakeholder FAA Programs, *En Route, Power Systems, Terminal, Second-level Engineering, etc.*), develops, promotes, and revises baseline standards for all FAA FST systems (FAA Orders, policies, template-style plans, etc.). Baseline standards are enhanced to accommodate local and site specific irregularities.

Relationship of Program to DOT Strategic Goal, Objective, & Performance Target

- **DOT Strategic Goal – Environmental Stewardship.** Reduce pollution and other adverse effects of transportation and transportation facilities.
- **DOT Objective 1** – Adopt transportation policies and promote technologies that reduce or eliminate environmental degradation.

Relationship to Performance Target

The FST Replacement and Monitoring project supports the environmental stewardship goal by executing a lifecycle maintenance program that reduces the risk of leaking FST systems, minimizes adverse impacts to personal and environmental safety, and restores availability of the systems for NAS operations.

Program Plans FY 2007 – Performance Output Goals

- Continue lifecycle replacement/sustainment of FST systems.
- Complete closure of formerly owned FST sites.
- Continue remediation efforts due to FST systems spills and leaks.

Program Plans FY 2008- 2011 – Performance Output Goals

- Continue lifecycle replacement/sustainment of FST systems.
- Complete closure of formerly owned FST sites.
- Continue remediation efforts due to FST systems spills and leaks.

2E02, FAA BUILDINGS AND EQUIPMENT
FY 2007 Request $12.0M

- A, Modernize/Improve FAA Buildings and Equipment Sustain Support, F12.00-00
- B, Seismic Safety Risk Mitigation, F12.01-01

A, MODERNIZE/IMPROVE FAA BUILDINGS AND EQUIPMENT SUSTAIN SUPPORT, F12.00-00

Program Description

This program extends the service life of FAA buildings and equipment, which reduces maintenance costs and energy consumption. Through timely building and equipment maintenance, the FAA will avoid increased operations funding for future repair or replacement of damaged equipment.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 3 –** Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

Relationship to Performance Target

The FAA Buildings and Equipment project contributes to the FAA's greater capacity goal by refurbishing and upgrading existing FAA-owned facilities. The facilities house electronic equipment that must be protected from weather hazards, radio interference, and unauthorized entry. Thus, buildings require routine maintenance and upgrading to prevent equipment failures, which can create air traffic delays.

Program Plans FY 2007 – Performance Output Goals

- Support the OEP to sustain Navaids and general NAS facilities at the benchmark airports.
- Completely refurbish at least five unstaffed facilities.
- Install at least 10 engine generators.
- Replace at least 10 shelters.
- Refurbish at least 15 long-range radar facilities.
- Repair/improve at least 10 facility service roads.
- Upgrade/repair/replace HVAC systems for at least 10 facilities.

Program Plans FY 2008-2011 – Performance Output Goals

- Support the OEP to sustain Navaids and general NAS facilities at the benchmark airports.
- Completely refurbish at least 10 unstaffed facilities.
- Install at least 20 engine generators.
- Replace at least 20 shelters.
- Refurbish at least 30 long-range radar facilities.
- Repair at least 20 facility service roads.
- Improve security by repairing/replacing perimeter fence, gates, and alarms.
- Continue power and heating, ventilation, and air-conditioning upgrades/replacements to facilitate installation of new equipment, as appropriate.

B, SEISMIC SAFETY RISK MITIGATION, F12.01-01

Program Description

The Seismic Safety Risk mitigation program identifies unacceptable seismic safety hazards at FAA-owned and -leased buildings and seeks to have the risks mitigated under Executive Order 12941, DOT Seismic Policy SS-98-01, and seismic safety standards published by the Federal Emergency Management Administration and the National Institute of Standards and Technology. The program also seeks to inform FAA Product Teams, facility managers, building engineers, and real-estate contracting officers of required seismic safety standards and provide subject-matter expertise.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 3 –** Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

Relationship to Performance Target

Many FAA buildings face a 10 percent chance of a damaging earthquake and a two percent risk of a devastating earthquake during the next 50 years. The U.S. Geological Survey estimates that there is a 62 percent combined probability of a damaging or devastating earthquake striking somewhere in the San Francisco Bay area alone in the next 30 years. The Seismic Safety Risk Mitigation program safeguards FAA personnel who operate and maintain the Air Traffic Control system and prevents catastrophic failure of the NAS infrastructure.

Program Plans FY 2007 – Performance Output Goals

- Conduct seismic evaluation at Boston ARTCC to determine whether unacceptable seismic risks exist at those facilities.
- Brief at least three product teams regarding required seismic standards for equipment design and installation.
- Provide subject-matter expert support to real-estate contracting officers.
- Conduct technical training at three Regional Offices.

Program Plans FY 2008-2011 – Performance Output Goals

- Conduct soil report reviews at 11 low seismic zone ARTCCs.
- Conduct geotechnical evaluations and soil borings at three ARTCCs.
- Brief at least three product teams each year regarding required seismic standards for equipment design and installation.
- Conduct technical training at three locations chosen from the Regional Offices.
- Conduct seismic screenings on 41 long-range radar facilities.
- Conduct inspections and evaluations at six long-range radar facilities.
- Revise technical training material to reflect changes in regulations.
- Conduct refresher technical training at fourteen locations including each Regional Office, the FAA Academy, William J. Hughes Technical Center, and FAA Headquarters.
- Support facility managers and national programs in their pursuit of funding to accomplish mitigation of unacceptable earthquake risks to life safety and NAS operation.

2E03, AIR NAVIGATIONAL AIDS AND ATC FACILITIES (LOCAL PROJECTS)

FY 2007 Request $3.0M

- Air Navigation Aids Facilities – Local Projects, M08.04-00

Program Description

During daily operations, critical equipment outages require local emergency actions to restore communications, surveillance, weather information, and air traffic control equipment. In addition, the FAA must modify facilities and equipment to accommodate operational changes to over 30,000 commissioned air navigation and air traffic control facilities. The unplanned modifications include minor adjustments to air traffic control positions in air traffic control towers or air route traffic control centers, raising or relocating air/ground communications antennas to reduce frequency interference, correcting fire hazards, and improving minor security deficiencies. Also, local project funds are used to restore lost service caused by major storms that do not qualify as disasters.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 3 –** Increase on-time performance of scheduled carriers.
- **FAA Performance Target 1 –** Through FY 2010, maintain an 87.4 percent on-time arrival for all flights arriving at the 35 OEP airports, no more than 15 minutes late due to NAS related delays.

Relationship to Performance Target

Local projects contribute to the FAA's greater capacity goal by quickly allowing emergency adjustments to NAS facilities will mitigates costly long-term maintenance and safety incidents and equipment outages that cause delays and impact capacity.

2E04, AIRCRAFT RELATED EQUIPMENT PROGRAM

FY 2007 Request $11.0M

- A, Aircraft and Related Equipment (ARE) Program, M12.00-00
- B, Aircraft and Related Equipment Program – Airbus Simulator, M12.01-02

A, AIRCRAFT RELATED EQUIPMENT PROGRAM, M12.00-00

Program Description

The FAA operates 31 flight inspection aircraft to check and certify navigation and landing aids and the procedures pilots follow when they use these aids. These aircraft fly the routes and approach paths used by aircraft that rely on these aids to determine if they are providing accurate signals and operating properly. In addition to periodic checking of the entire system, these aircraft must check and certify new installations and those locations where navigation and landing aids have been repaired or relocated because of new construction or signal interference.

These aircraft carry a complex suite of electronic equipment to check navigation and landing aids. Both this equipment and the avionics that are integral systems of the aircraft deteriorate with age and become technologically obsolete. To perform the flight inspection efficiently these systems must be upgraded and/or replaced.

For the future, the FAA is developing a more integrated approach for replacing this equipment called the Flight Inspection Flight Program Support. Rather than plan individual projects to replace components, this program uses a more systematic approach to ensure aircraft and flight inspection systems are upgraded in

synchronization with each other. This integrated approach ensures that mission specific requirements are addressed and the benefits of new equipment are fully realized.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Increased Safety.**
- **FAA Objective 1 –** Reduce the commercial airline fatal accident rate.
- **FAA Performance Target 1 –** Reduce the airline fatal accident rate by 80 percent from the 1994-1996 baseline to a three-year rolling average rate of 0.010 per 100,000 departures by FY 2007.
- **FAA Performance Target 2 –** Reduce the three-year rolling average fatal accident rate below 0.010 per 100,000 departures by FY 2010.

Relationship to Performance Target

The FAA improves air safety by ensuring that flight inspection aircraft are equipped and systems modified to validate and certify the accuracy of navigational aid electronic signals. The FAA also validates and certifies the safety of approach/departure flight procedures and terminal routes at all airports within the NAS and at military facilities world-wide.

Program Plans FY 2007 – Performance Output Goals

- Install Proline 21 navigation flight management systems in BE-300 aircraft.
- Design and procure NAFIS (Next Generation Flight Inspection System) PC software and data correlator Production Units.
- Certify and integrate NAFIS sensors and antenna.
- Purchase equipment, integrate multi-mode receivers, and install on flight inspection aircraft.
- Complete purchase and begin installation of electronic flight bag display system in FAA aircraft.
- Purchase initial airborne transceivers and complete non-recurring engineering development for global satellite communication and data system.
- Acquire and install high speed antennas on flight inspection aircraft.

Program Plans FY 2008-2011 – Performance Output Goals

- Complete installation of Proline 21 navigation flight management systems in BE-300 aircraft.
- Procure NAFIS PC's Displays, Test Equipment, Training and Documentation.
- Begin installation of NAFIS in flight inspection aircraft.
- Complete purchase equipment, integrate multi-mode receivers and install progressively on flight inspection aircraft.
- Purchase airborne transceivers and complete non-recurring engineering development and installation of global satellite communication and data systems on FAA flight inspection aircraft.

B, AIRCRAFT RELATED EQUIPMENT PROGRAM – AIRBUS SIMULATOR, M12.01-02

Program Description

The primary purpose of the new simulator will be to support flight safety operational evaluation programs to support NAS Modernization. Every new procedure, airport infrastructure improvement or new equipment implementation requires operational approval before it can be completed. There is a current active program for Terminal Area Safety that will address all issues related to Required Navigation Performance, Terminal Area Hazards (Laser interference), new Technologies, Land and Hold Short Operations and Runway Incursion improvements. The simulator will be used to support a large number of real-time pilot-in-the-loop evaluations and accident investigations and NTSB requests related to accidents and incidents. We offer a unique capability for providing experienced operational evaluation support and data analysis in this area. The simulator will be installed in the Flight Operations Systems Laboratory in

Oklahoma City and dynamically linked to the existing advanced Boeing B737-800NG simulator and simulators at remote industry sites.

This procurement will be for one each advanced full flight simulator. The simulator facility will be constructed starting in January, 2006 and complete by November 2006. The flight simulator will be ordered in January 2006 and delivered in June 2007, with Operational Readiness Demonstration in August 2007. During the procurement process technical reviews will be conducted on a monthly basis, with critical milestones reviewed as required in the contract. Technical refresh will be performed starting in 2009 and will continue annually as needed.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Increased Safety.**
- **FAA Objective 1 –** Reduce the commercial airline accident rate.
- **FAA Performance Target 1 –** Reduce the airline fatal accident rate by 80 percent from the 1994-1996 baseline to a three-year rolling average rate of 0.010 per 100,000 departures by FY 2007.
- **FAA Performance Target 2 –** Reduce the three-year rolling average fatal accident rate below 0.010 per 100,000 departures by FY 2010.

Relationship to Performance Target

The advanced fly-by-wire full flight simulator improves air safety by providing the FAA with the capability to conduct operational evaluation programs on both the conventional aircraft designs, represented by the Boeing B737-800NG simulator, and the evolving fly-by-wire technology now contained on the majority of large commercial aircraft. In addition, the simulators will be dynamically linked to for evaluation programs with each other and with commercial simulators at remote sites. Line Item 2E05B, CIP M12.01-02, represents a one time buy of one item.

Program Plans FY 2007 – Performance Output Goals

- Number of sites to be commissioned is one each.
- Continue procurement process for new fly-by-wire, side-stick controlled advanced flight simulator.
- Technical reviews are scheduled for the 15th of the month for Jan, Feb, March, April and May.
- Critical design review will be completed in January 2007.
- Factory acceptance will be completed in May 2007.
- Equipment will be shipped and installed in June 2007.
- On-site acceptance will be completed in August 2007.
- Simulator certification will be completed in August 2007.
- Operational Readiness Demonstration will be completed in August 2007.
- Select vendor for simulator maintenance contract for B737-800 and Airbus simulators.
- Issue contract for multi-year maintenance contract.
- Conduct limited operations during shakedown period.

Program Plans FY 2008-2011 – Performance Output Goals

- Complete purchase of spare parts, peripheral equipment and spares.
- Monitor contract and milestone reviews per contract requirements.
- Launch operations for new simulator to support critical safety research programs.
- Monitor contract requirements and technical reviews per contract.
- Perform technical refresh and peripheral updates.

2E05, COMPUTER AIDED ENGINEERING AND GRAPHICS (CAEG) – MODERNIZATION

FY 2007 Request $1.5M

- Computer Aided Engineering and Graphics (CAEG) Replacement, F17.00-00

Program Description

The CAEG Modernization program contributes to the success of the FAA's mission by providing reliable computer-aided engineering graphics tools and quality customer service while controlling costs. The tools used to generate, manipulate, store, and retrieve engineering drawings are critical to successfully manage change in a fluid environment. Every program in the FAA's CIP utilizes the CAEG to analyze, manage, and integrate its products into the NAS. The CAEG analytical capabilities and the underlying repository of information provide an indispensable means to conduct spatial analyses. This capability aids in determining the effects of restructuring the NAS architecture to help expedite implementation of the CIP. By overlaying radio frequency coverage patterns, political boundaries, sector boundaries, flight trajectories, etc., the service and political ramifications of the redesign of the NAS Architecture can be played out as part of the planning process within minutes.

The analytical features of the CAEG system make it a key requirement to quickly isolate radio frequency interference sources that impede air traffic services. Analysis of the airspace and radio communications environment permits the FAA to avoid cost. These tools and services serve as a screening tool to isolate the cause of interference reported by the flying community and allow for its mitigation.

The CAEG program drawing management repositories mitigate implementation errors and expedite joint acceptance inspection, which allows the FAA to accept and operate the installed NAS equipment. This is accomplished by providing a solid base of information and engineering drawings that the national program offices and local implementation engineers can use.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Organizational Excellence.**
- **FAA Objective 2 –** Improve financial management while delivering quality customer service.
- **FAA Performance Target 1** – Develop and implement a centrally managed cost control and productivity improvement program to lead the agency in reducing costs.

Relationship to Performance Target

The CAEG program contributes to the FAA organizational excellence goal by providing labor-saving, turnkey engineering services (the engineering tools, data, and technical support in a secured environment) to the existing FAA and contractor workforce to plan, implement, and maintain NAS modernization efforts. Various vintages of hardware and software deployed nationally provide this support. The CAEG program continues to sustain existing hardware and provide technical refresh of hardware and specialized/commercial-off-the-shelf software. These products are critical to support the engineering requirements of various FAA program offices involved in the NAS modernization effort, including spectrum management, safety enhancement, and improved air traffic throughput. The CAEG program also provides analytical engineering decision support tools to support facility power management, site selection and planning, radio frequency coverage, and interference analysis as well as the repository of engineering designs.

Program Plans FY 2007 – Performance Output Goals

- Recertify CAEG Security Certification and Authorization Package (800/26).
- Phase in next generation of CAEG hardware and software systems.
- Establish an in house mechanism for CAEG system maintenance to ensure optimum system availability.
- Investigate Virtual Public Network solution for the CAEG system and develop study.

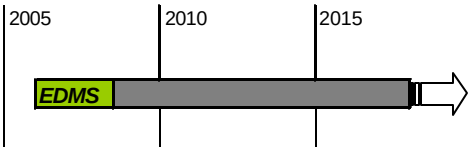
- Update engineering library with 3,000 engineering drawing file images and metadata, leaving 9,950 to be done.
- Provide enhancements to the Radio Coverage Analysis System and Airports System as needed through sustainment of the Technical Development and Support contract for specialist application support and national training.
- Update the Airport System to accommodate the latest Airport Circular and sustain the integration of the Airport System with the Obstruction Evaluation Airport Airspace Analysis tool.

Program Plans FY 2008-2011 – Performance Output Goals

- Sustain the CAEG System.

System Implementation Schedule

Electronic Document Management System (EDMS)
First site ORD: February 2006 -- Last site ORD: March 2008



2E06, AIRPORT CABLE LOOP SYSTEMS – SUSTAINED SUPPORT

FY 2007 Request $5.0M

- Airport Cable Loop Systems – Sustained Support, F10.00-00

Program Description

This program will replace on-airport, copper-based, signal/control cable lines that have deteriorated. The primary focus will be on projects at airports with high traffic counts and enplanements. The obsolete underground telecommunications cable infrastructure systems are vulnerable to failure and could cause flight delays related to outages. These lines feed airport surveillance radar, air/ground communications, and landing systems data and information to the tower, and operational and maintenance information to FAA-staffed facilities. Where cost-effective, the program will install fiber-optic cable in a ring formation to provide redundancy and communications diversity. The airport cable loop program takes advantage of opportunities to save cost by coordinating projects with major construction projects (e.g. tower relocations, and runway projects).

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 3 –** Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

Relationship to Performance Target

The Airport Cable Loop Systems Sustained Support Program will prevent potential failures and outages by replacing obsolete underground cable infrastructure systems. The program improves signaling and communications primarily at large airports with high traffic counts and enplanements, which contributes to airport arrival and departure efficiency.

Program Plans FY 2007 – Performance Output Goals

- Complete construction and system installation at Detroit, Atlanta, Las Vegas, and Portland International Airports.
- Complete fiber-optic system upgrade at Los Angeles International Airport.
- Begin construction and equipment installation at George Bush Intercontinental, Minneapolis-St. Paul, Boston-Logan Phase 2, and Oakland International Airport.
- Begin development of engineering packages for Dallas-Ft. Worth International Airport.

Program Plans FY 2008-2011 – Performance Output Goals

- Complete construction and system installation at George Bush Intercontinental, Minneapolis-St. Paul, Boston-Logan Phase 2, and Oakland International Airport.
- Begin construction and equipment installation at Dallas-Ft. Worth International Airport.
- Begin development of engineering packages for La Guardia, Pittsburgh, and Baltimore/Washington International Airports.
- Begin fiber-optic system upgrade at San Francisco International Airport.
- Begin or complete construction and equipment installation at the following airports;
  - LaGuardia, Washington Dulles International, Ronald Reagan Washington National, Pittsburgh, and Baltimore/Washington International.

2E07, ALASKAN NAS INTERFACILITY COMMUNICATIONS SYSTEM (ANICS)

FY 2007 Request $2.2M

- Establish Alaskan NAS Interfacility Communications System (ANICS) Satellite Network – Phase II, C17.01-01
- Establish Alaskan NAS Interfacility Communications System (ANICS) Satellite Network – ANICS Modernization – Phase I, C17.02-01

Program Description

Flying in Alaska is treacherous, rough terrain in remote areas and changing weather conditions create extreme hazards with little margin for error. Flying is the only way to reach the majority of Alaskan communities. Alaska has nine times the number of licensed pilots per capita than average. Additionally, Alaska has the highest aircraft accident rate in the world. A contributing factor is the lack of critical flight information due to the lack of reliable communications. Commercial communications are out of service an average of eight days per year per provider. FAA requires essential telecommunications service 99.9% of the time – less than ½ day of outage per year.

The ANICS network is to Alaska, is a FAA-owned satellite-based infrastructure (a network) that carries reliable voice/data communications of other facilities to and from controlling points such as the Air Route Traffic Control Center (ARTCC), the Air Traffic Control Towers (ATCT), and the Automated Flight Service Stations (AFSS).
It provides circuit connectivity for critical, essential, and routine air traffic control services from existing NAS facilities. ANICS uses primary and alternate satellites to provide system circuit diversity. It can be expanded as needed to provide service to new NAS facilities.

ANICS replaces leased commercial communications circuits in Alaska with FAA-owned satellite earth stations and leased satellite transponders to provide reliable telecommunication services at locations where the FAA has experienced poor telecommunications performance. The increase of telecommunications availability provided by implementing ANICS corresponds to a direct increase in the availability of the NAS and improves air safety in Alaska.

ANICS facilities are being built in two phases:

ANICS Phase I facilities provide communications that are available 99.99% of the time (no more than 53 minutes of service outage a year) by using two sets of equipment and two satellites in parallel. This level of service is used for communications with en-route aircraft and for transporting radar data showing aircraft location and separation. It is considered critical for the successful control of airspace and aircraft. ANICS Phase I has been successfully implemented at 51 operational locations and one test and training facility. Construction of Phase I sites started in 1994, and the last of the 52 Phase I facilities was completed in 1999.

The FAA acquisition executive approved acquisition of up to eighteen Phase II facilities in 2000, and twelve sites are now on order. ANICS Phase II installations will be completed by 2006.

As a result system aging, equipment obsolescence, and extreme Alaskan weather impacts upon FAA facilities, a modernization is required of the Phase I ANICS facilities. These fifty-two (52) facilities have been operating continuously for an average of 10 years without an update. Our update plan covers the FY 2007 – FY 2011 fiscal years.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Increased Safety.**
- **FAA Objective 2 –** Reduce number of fatal accidents in general aviation.
- **FAA Performance Target 2** – By FY 2009, reduce accidents in Alaska for general aviation and all Part 135 operations from the 2000-2002 average of 130 accidents per year to no more than 99 accidents per year.

Relationship to Performance Target

ANICS supports FAA's strategic goal of increased safety and the objective of reducing accidents rates in Alaska by improving communications availability. Alaska has the highest number of general aviation (GA) and air taxi (Part 135) aircraft accidents in the world. One of the major causes is extreme weather conditions in remote locations. In order to save lives, it's imperative that we get accurate and timely weather information to the pilot.

Air safety is improved by minimizing outages for critical and essential communications between pilots and air traffic controllers. Reliable communications between FAA facilities improves the dissemination of air traffic movement and weather information, provides better quality radar data, and allows maintenance personnel to monitor and control FAA air navigation equipment spread out across the 570,370 square miles of the largest state in the union, one-fifth the size of the continental 48 states. In FY 2004, ANICS played a major role in reducing the accidents in Alaska by 20% over the previous year - from 130 accidents in FY 2003 to only 101 accidents in FY 2004. This is only two away from the goal of 99 or less per year.

Program Plans FY 2007 – Performance Output Goals

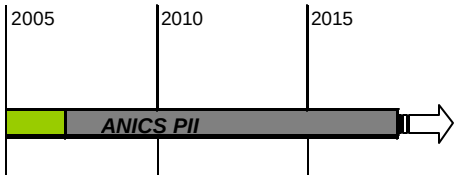
- Complete Shemya upgrade (Antennas, Solid State Power Amplifiers, Radomes).
- Complete Marine Site Radomes at the following five sites: (Barrow, Cape Lisburne, Gambell, Cape Romanzof, and Unalakleet.
- Complete Antenna Heater installations at six sites: (Middleton Island, Yakutat, Biorka, Gulkana, Juneau, and Fairbanks.)
- Begin/Complete Software development for new controller.

Program Plans FY 2008-2011 – Performance Output Goals

- Multiplex/ Network Monitoring and Control System Replace / Modems & RF Upgrades – 52 Sites.

System Implementation Schedule

Alaskan NAS Interfacility Communications System (ANICS) Phase II
First site IOC: June 2004 -- Last site IOC: August 2006



2E08, FACILITIES DECOMMISSIONING
FY 2007 Request $12.6M

- Decommissioning, F26.01-01

Program Description

The June 2005 GAO report entitled *Air Traffic Operations, The Federal Aviation Administration Needs To Address Major Air Traffic Operating Cost Control Challenges*, states that the FAA needs to expand its efforts to cut operational costs to address an expected gap between budget forecasts and expenses. Recommendations include speeding up the decommissioning of ground-based navigational aids.

In recent years the FAA has decommissioned many redundant or underutilized facilities, but funding to effect any environmental testing, property restoration, and equipment disposal has not been identified. This line item will be used to begin redress of that shortfall.

Decommissioning activities are defined to include:
- Termination environmental due diligence audits,
- Testing for environmental clean-up/hazmat abatement, and disposal,
- Non-hazmat real property site restoration, demolition, and disposal,
- Lease termination liabilities,
- Equipment (personal property) removal, reuse, and disposal,
- Removing telecommunications systems, services, and circuits,
- Frequency spectrum reallocation,
- Modification of the National Airspace System Resources (NASR) database, aeronautical charts, and terminal procedures publications, and
- Addressing cultural and historic preservation and natural resource protection issues.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Organizational Excellence.**
- **FAA Objective 2 –** Improve financial management while delivering quality customer service.
- **FAA Performance Target 1** – Develop and implement a centrally managed cost control and productivity improvement program to lead the agency in reducing costs.

Relationship to Performance Target

By providing funds for the final disposition of structures, equipment, and real estate that are no longer required by the FAA, this program will eliminate the on-going costs for maintaining assets no longer required by the agency.

2E09, ELECTRICAL POWER SYSTEMS – SUSTAIN/SUPPORT
FY 2007 Request $38.0M

- Power Systems Sustained Support, F11.00-00

Program Description

The Power Systems Sustain Support (PS^3) Program is an infrastructure renewal program. NAS ATC programs fund the initial purchase and installation of all power systems. After new equipment/facilities have been commissioned, the PS^3 Program renews and upgrades components of the existing $2.47 B power system infrastructure when necessary to maintain and improve the overall electrical power quality and availability.

Major PS^3 program elements include replacement of the following: batteries in emergency power and power-conditioning systems; uninterruptible power systems; engine generators; airport power cable; and lightning protection and grounding systems. Projects are programmed according to their criticality to NAS operations and deferability.

The PS^3 Program is critical to both maintaining existing capacity and increasing the NAS capacity by renewing NAS electrical power equipment, actions that avoid future power outages to NAS equipment. Without NAS power systems, air traffic control electronics cannot operate resulting in traffic delays. The 6,120 power-related outages from FY 1999 to FY 2004, represents a total of 59,769 hours where back-up power was not available. These primary and standby power outages resulted in flights being kept on the ground, placed in airborne holding patterns or re-routed to other airports. The PS^3 Program exists to avoid future outages to NAS equipment as well as to avoid expensive electronic equipment repair.

In additional to the aging of the power infrastructure, the quality of commercial power is deteriorating, resulting in frequent voltage sags and spikes. The microprocessors of modern NAS equipment are increasingly sensitive to the power quality. Both of these factors result in the need for more power conditioning, faster power transfers and more stringent grounding systems than currently available in existing systems. Adding to that issue, the extended reboot times and sensitive component linkages of modern ATC systems make proper power conditioning and proper grounding more critical than they were with their predecessors.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 3 –** Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

Relationship to Performance Target

The PS^3 program is critical to maintaining and increasing air traffic capacity. The availability of all ATC OEP airport facilities is directly related to the availability of NAS power systems. ATC equipment must have proper electrical power to operate. Timely electrical power equipment replacement supports the objective to increase airport capacity to meet projected demand by reducing the incidence of NAS equipment outage delays that would have occurred during commercial power outages. The PS^3 program focuses on the FAA performance target of sustaining adjusted operational availability at 99 percent for the reportable facilities that support the 35 OEP airports.

Program Plans FY 2007 – Performance Output Goals

- Sustain existing NAS power systems by completing about 360 projects to replace batteries, replace Uninterruptible Power System units, install direct current bus systems, and replace engine generators; replace deteriorated power cables and lightning protection and grounding; and replace ARTCC power distribution equipment.

Program Plans FY 2008-2011 – Performance Output Goals

- Sustain existing NAS power systems by completing about 360 projects (annually) to replace batteries, replace Uninterruptible Power System units, install direct current bus systems, and replace engine

generators; replace deteriorated power cables and lightning protection and grounding; and replace ARTCC power distribution equipment.

ACTIVITY 3. NON-AIR TRAFFIC CONTROL FACILITIES AND EQUIPMENT

A. SUPPORT EQUIPMENT

3A01, HAZARDOUS MATERIALS MANAGEMENT
FY 2007 Request $20.0M

- NAS Facilities OSHA & Environmental Standards Compliance – Environmental Cleanup/HAZMAT, F13.02-00

Program Description

The FAA has identified more than 709 contaminated sites at 232 locations nationwide that require investigation, remediation, and closure activities. Environmental Cleanup site investigations have indicated that toxic contamination resulted from a variety of hazardous substances: cleaning solvents, fuels, pesticides, asbestos, polychlorinated biphenyls (PCB), and heavy metals. FAA organizations, including the Mike Monroney Aeronautical Center and the William J. Hughes Technical Center, have mandatory remediation and monitoring schedules in place as part of negotiated agreements with regulatory agencies. These agreements require the FAA to remediate contaminated soil and groundwater. Extensive contamination at the Technical Center prompted the Environmental Protection Agency (EPA) to place the site on the EPA National Priorities List, indicating its status as one of the Nation's most environmentally dangerous sites (i.e., Superfund site). In addition, contaminated sites and noncompliance with requirements of the Hazardous Materials Management program account for a large portion of the unfunded environmental liabilities documented in the FAA's Financial Statement.

To clean up these contaminated sites and comply with applicable environmental regulations, the FAA developed the Hazardous Materials Management program. The FAA must continue mandated program activities to achieve compliance with all Federal, State, and local environmental cleanup regulations, including the Resource Conservation and Recovery Act of 1976 and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980. FAA program activities include: conducting site investigations; managing hazardous materials, including hazardous waste accumulation, handling, and disposal; installing groundwater monitoring wells; remediating site contamination; and operating air pollution controls. The FAA performs assessment, remediation, and closure activities as aggressively and proactively as funding will allow. Future planned efforts include conducting contaminant investigations, implementing site remediation projects, and completing required regulatory closures; and attaining 93 percent "No Further Remedial Action Planned" closure documentation for FAA sites listed on EPA's Federal Hazardous Waste Compliance Docket.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Environmental Stewardship.** Reduce pollution and other adverse effects of transportation and transportation facilities.
- **FAA Objective 1 –** Adopt transportation policies and promote technologies that reduce or eliminate environmental degradation.

Relationship to Performance Target

The Hazardous Materials Management program supports the environmental stewardship goal by conducting required cleanup activities for contaminated sites within existing NAS land and structures. The program achieves this objective through assessment, remediation, and closure activities for contaminated sites. These activities result in a safe and environmentally sound workplace, and protection of the natural resources of surrounding communities. The program also ensures that the FAA complies with the

Department of Transportation's performance goal of achieving "No Further Remedial Actions Planned" for 93 percent of all FAA sites listed on the EPA's Federal Hazardous Waste Compliance Docket.

Program Plans FY 2007 – Performance Output Goals

- Maintain 93 percent "No Further Remedial Action Planned" for all FAA sites listed on the EPA's Federal Hazardous Waste Compliance Docket.
- Reduce relative risk to human health and the environment at a minimum of 5% of the contaminated sites identified in the Environmental Site Cleanup Report.
- Pursue the United States Navy as a Potential Responsible Party at the William J. Hughes Technical Center, Atlantic City, NJ for cost sharing at Areas of Concern.
- Perform remediation activities for contaminated areas at William J. Hughes Technical Center, Atlantic City, NJ.
- Perform Remediation activities for PCB and fuel-contamination at the Bimini, Bahamas Very High Frequency Omnidirectional Radar (VOR), Maintenance Facility, and the Non-Directional Beacon (NDB).
- Work to ensure successful and timely completion of the Chlorinated Organic Plume Program Plan at the Mike Monroney Aeronautical Center.
- Complete initial investigation at all known areas of concern in Alaska.

Program Plans FY 2008-2011 – Performance Output Goals

- Maintain 93 percent "No Further Remedial Action Planned" for all FAA sites listed on the EPA's Federal Hazardous Waste Compliance Docket.
- Reduce relative risk to human health and the environment in FY 2008 at a minimum of 6% of the contaminated sites identified in the Environmental Site Cleanup Report.
- Complete remediation activities in Bimini, Bahamas.
- Perform remediation activities for contaminated areas at William J. Hughes Technical Center, Atlantic City, NJ.
- Each year reduce relative risk to human health and the environment at a minimum of 7% of the contaminated sites identified in the Environmental Site Cleanup Report.
- Obtain regulatory closure for Area of Concern location T at the William J. Hughes Technical Center, Atlantic City, NJ.
- Achieve economies of scale through shared mobilization and construction related activities with the Decommissioning Program (F26.01-01).
- Move Area of Concern locations 56, A, C and R at the William J. Hughes Technical Center, Atlantic City, NJ into the Closure Phase.
- Obtain "No Further Remedial Action Planned" for 2 additional FAA sites listed on the EPA's Federal Hazardous Waste Compliance Docket.

3A02, AVIATION SAFETY ANALYSIS SYSTEM (ASAS)

FY 2007 Request $14.5M

- Aviation Safety Analysis System (ASAS), A17.00-00

Program Description

The ASAS program provides the automation hardware, software, and communication infrastructure to support aviation safety information databases and access to them by the increasingly mobile FAA safety work force. The workforce uses these databases to certify and regulate aircrews, airlines, and other licensed companies in aviation. Having information readily available improves the ability of safety personnel to develop safety regulations and oversee the civil aviation industry. The information technology infrastructure and software systems also enhance data and information sharing.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Increased Safety.**
- **FAA Objective 1 –** Reduce the commercial airline fatal accident rate.
- **FAA Performance Target 1 –** Reduce the airline fatal accident rate by 80 percent from the 1994-1996 baseline to a three-year rolling average rate of 0.010 per 100,000 departures by FY 2007. **FAA Performance Target 2 –** Reduce the three-year rolling average fatal accident rate below 0.010 per 100,000 departures by FY 2010.

Relationship to Performance Target

Inspection and review of airline safety programs and practices are integral to the FAA safety program. The ASAS provides information on the safety record of an airline and the actions required to meet regulations and directives. Having this information allows the safety inspectors to determine if the airline is complying with good safety practices, which is essential to FAA's role in preventing accidents.

Program Plans FY 2007 – Performance Output Goals

- Complete design of new enterprise infrastructure under the Regulation and Certification Infrastructure for System Safety (RCISS) program.
- Implement disaster recovery services in support of the AVS Operations Center.
- Begin transition to centralized data storage and processing environment.
- Begin implementation of services oriented architecture.
- Continue technology refreshment of legacy AVS infrastructure components in support of AVS national safety applications.
- Continue improvement of Aviation Medical Examiner workflow process under Document Imaging Workflow System (DIWS).
- Continue expansion of Covered Position Decision Support (CPDSS) systems to address processing of medical appeals cases and meet new reporting requirements.
- Continue expansion of Administration and Compliance Tracking in an Integrated Office Network Subsystem (ACTIONS) to provide an automated repository of compliance history data.
- Continue enhancements to Compliance and Enforcement Tracking System (CETS).
- Continue enhancements to Investigations Tracking System to assist in investigation archiving.
- Continue enhancements to Facility Security Reporting system to improve assessment capabilities and provide remote access.
- Add enhancements to Hazardous Materials Inspection and Enforcement system, allowing airlines to report violations electronically to FAA and Transportation Security Agency in real time.
- Begin re-host of mainframe application into web-based server environment.

Program Plans FY 2008-2011 – Performance Output Goals

- Deploy and support mobile devices with enhanced telecommunications services to 25% of the AVS Safety workforce.
- Continue transition to centralized data storage and processing environment.
- Continue implementation of services oriented architecture.
- Continue technology refreshment of legacy AVS infrastructure components in support of AVS national safety applications.
- Continue improvement of Aviation Medical Examiner workflow process under DIWS.
- Continue expansion of CPDSS systems to address processing of medical appeals cases and meet new reporting requirements.
- Continue expansion of ACTIONS to provide an automated repository of compliance history data.
- Continue enhancements to CETS.
- Design and develop new correspondence tools to create and maintain official communication; integrate Occupational Medical Surveillance Program; move airmen medical certification data to electronic media; and provide instant airman certification under CPDSS.

- Analyze/revise application/user processes; develop training materials and conduct user training; analyze and develop web-based interface to replace legacy interface; enable external interfaces to commercial realm.
- Begin development of Integrated Accident and Incident data system to allow for consolidation of critical safety-related data analysis and reporting.
- Integrate CETS data with Decision Support System
- Develop additional enhancements for the ad hoc reporting capability, improve ability to upload photos, upgrade data collections software and improve remote access.
- Complete re-host of mainframe applications to web-based server environment.
- Complete development of the Aviation Medical Examiner Information subsystem
- Complete development of Integrated Quality system to support AVS initiatives.
- Complete development of Integrated Air Traffic Oversight system to support AVS initiatives.

3A03, LOGISTICS CENTER SUPPORT SYSTEM (LCSS)

FY 2007 Request $1.0M

- Logistics Center Support System (LCSS), M21.04-01

Program Description

LCSS will replace the Logistics and Inventory System and improve FAA efficiencies, enhancing service to reduce inventory costs, increase inventory accuracy and increase productivity.

LCSS will be a web-based system that uses state-of-the-art tools to extend and leverage the existing agency investment in Logistics and Inventory System. The new tools will be based on object-driven open architecture and will allow interfaces to be integrated. LCSS will incorporate the use of commercial-off-the-shelf (COTS) applications and enhancements to improve asset visibility, provide serial number tracking, warranty information, shop floor control and spares modeling. These functions will provide a more complete picture of the financial position of logistics within the agency.

The FAA Logistics Center manages the central NAS inventory warehouses and distribution facilities for the FAA. It provides routine and emergency logistics products and services to 8,000 FAA customers at 41,000 facilities and 28,000 sites, as well as to the Department of Defense (Air Force, Navy, and Army), state agencies and foreign countries by providing 80,000 parts and services through its facilities. Provide, track and account for F&E and Ops parts totaling $750M. Provide storage facilities for General Services Administration, National Oceanic and Atmospheric Administration and Transportation Security Agency.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Organizational Excellence.**
- **FAA Objective 2 –** Improve financial management while delivering quality customer service.
- **FAA Performance Target 1** – Develop and implement a centrally managed cost control and productivity improvement program to lead the agency in reducing costs.

Relationship to Performance Target

The LCSS program will support enhanced cost-control measures and improved decision-making by: monitoring value of inventory before deployment, then after system implementation, to track reductions in inventory levels; optimize asset availability to assure stock is on hand when requisitioned for the NAS; reduce repair costs through shop floor automation; and monitor costs before/after LCSS deployment.

Program Plans FY 2007 – Performance Output Goals

- Assemble software solution and achieve interim development.

Program Plans FY 2008-2011 – Performance Output Goals

- Complete, test and deploy complete software solution.
- Acquire COTS licenses for software system users.

3A04, TEST EQUIPMENT – MAINTENANCE SUPPORT FOR REPLACEMENT

FY 2007 Request $1.5M

- Test Equipment Modernization / Replacement, M17.00-00

Program Description

The Test Equipment Modernization/Replacement project procures the test equipment needed to ensure reliable NAS operation. As the FAA modernizes the NAS, the new systems that are installed require specialized test equipment to determine if they are operating properly. In addition, as general use test equipment wears out it must be replaced. With appropriate test equipment, systems can be repaired efficiently, and outage time can be shortened.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 3 –** Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

Relationship to Performance Target

Establishing test equipment requirements and guidance along with acquiring new test equipment will reduce restoration time for both scheduled and unscheduled outages. Furthermore, new test equipment will enable the technicians to obtain accurate results when testing, repairing, and certifying NAS systems. Additionally, new test equipment will significantly reduce NAS system callbacks and recertifications stemming from misalignments due to test equipment failures. Inappropriate or inoperable test equipment decreases operational availability and causes aircraft delays.

3A05, NATIONAL AIRSPACE SYSTEM (NAS) RECOVERY COMMUNICATIONS (RCOM)

FY 2007 Request $10.0M

- Command and Control Communications (C3), C18.00-00

Program Description

The RCOM program gives the FAA the command and control communications capability to directly manage and operate the NAS during local, regional and national emergencies when normal common-carrier communications are interrupted. The NAS C3 provides and enhances a variety of fixed-position, portable, and transportable C3 systems to support emergency operations. Such C3 systems include the automatic digital network/defense messaging system; secure telephone unit third generation/secure telephone equipment; secure facsimile; very high frequency (VHF)/Frequency Modulated (FM); high-frequency single-side band; satellite telephone network; wireless notification system; secure conferencing system; knowledge services network; and communications in emergency situations. These C3 systems enable the FAA and other Federal agencies to exchange classified and unclassified communication to promote national security. The RCOM program also supports the Washington Operations Center Complex and modernizes several "continuity of operations" sites, which ensures FAA executives command and communications during times of crisis.

Relationship of Program to DOT Strategic Goal, Objective, & Performance Target

- **DOT Strategic Goal – Homeland and National Security.**
- **DOT Strategic Goal -** Balance homeland and national security transportation requirements with the mobility needs of the Nation for personal travel and commerce.
- **DOT Objective 1 –** Support and implement U.S. security strategies and plans related to transportation.

Relationship to Performance Target

The RCOM program contributes to the FAA's security goal by ensuring that during emergencies the FAA's C3 structure can provide time-critical public and NAS information for the FAA Administrator. The FAA Administrator shares this information with staff members, key regional managers, the Secretary of Transportation, and other national-level executive personnel.

Program Plans FY 2007 – Performance Output Goals

- Procure and install VHF/FM equipment for Pacific Northwest Mountain System Maintenance Office (SMO), Chicago SMO, Columbia SMO and Independence SMO.
- Engineer system requirements for VHF/FM Tri-State Snow SMO, Gateway SMO and Memphis SMO.
- Support Communication Support Team (CST) missions as required.
- Continue modernizing classified facilities.
- Commence modernization of Regional Operations Centers nationwide.

Program Plans FY2008-2011 – Performance Output Goals

- Procure and install VHF/FM equipment for the Tri-State Snow SMO, Gateway SMO, Memphis SMO Pittsburgh SMO, Salt Lake City SMO, Lone Star SMO, Ohio SMO, Hawaii-Pacific SMO, Rocky Mountain SMO, Red River SMO, Rio Grande SMO, Superior SMO, Dakota-Minnesota SMO and Great Plains SMO.
- Engineer system requirements for VHF/FM Pittsburgh SMO, Salt Lake City SMO, Lone Star SMO, Ohio SMO, Hawaii-Pacific SMO, Rocky Mountain SMO, Red River SMO, Rio Grande SMO, Superior SMO, Dakota-Minnesota SMO and Great Plains SMO.
- Continue modernizing classified facilities.
- Support CST missions as required.
- Deliver additional secure conferencing systems as required.
- Upgrade and enhance satellite telephone network phones.
- Continue modernizing Regional Operations Centers nationwide.

3A06, FACILITY SECURITY RISK MANAGEMENT
FY 2007 Request $25.0M

- Facility Security Risk Management, F24.00-00

Program Description

The Facility Security Risk Management (FSRM) Program was established in response to Presidential Decision Directive 63, Critical Infrastructure Protection, which required all Federal agencies to assess the risks to their critical infrastructure and take steps to mitigate that risk. The program provides an integrated security system that includes access control, surveillance, x-ray machines, metal detection and intrusion detection. Other upgrades include adding guardhouses, visitor parking, fencing and lighting.

Relationship of Program to DOT Strategic Goal, Objective, & Performance Target

- **DOT Strategic Goal – Homeland and National Security.**
- **DOT Strategic Goal –** Balance homeland and national security transportation requirements with the mobility needs of the Nation for personal travel and commerce.
- **DOT Objective 1 –** Support and implement U.S. security strategies and plans related to transportation.

Relationship to Performance Target

The FSRM Program provides the infrastructure enhancements needed to reduce risks to facilities critical to the NAS. These enhancements reduce the risk of unauthorized access and provide early identification of potential security problems.

Program Plans FY 2007 – Performance Output Goals

- Upgrade and accredit 20 of 270 remaining facilities (7%).

Program Plans FY 2008-2011 – Performance Output Goals

- Upgrade and accredit 250 of 270 remaining facilities (100%).

3A07, INFORMATION SECURITY

FY 2007 Request $12.0M

- NAS Information Security – Information Systems Security, M31.00-00

Program Description

In accordance with requirements in Homeland Security Presidential Directive-7, formerly PDD-63, and the Federal Information Security Management Act, the FAA established an Information Systems Security Program under the Office of the Chief Information Officer. To comply with this national policy, a plan for protecting the cyber critical infrastructure and key resources that they own or operate was submitted to OMB. The FAA must implement the cyber protection plan for the NAS and report progress on an annual basis in accordance with directions from Homeland Security Presidential Directive/Hspd 12, dated August 27, 2004. This directive set the policy for a Common Identification Standard and mandated government-wide implementation of secure and reliable forms of both physical and logical identification. To adhere to this Directive, the FAA is developing and setting standards and policy for logical access control. The FAA must implement and report on these two mandatory requirements annually.

The FAA has made great strides in detecting and preventing malicious cyber activity. Specifically, the agency has (1) established a 24-hour/365-day Computer Security Incident Response Center (CSIRC); (2) developed an Information System Security architecture that overlays the NAS architecture; (3) demonstrated an intrusion detection system capability for ATC and installed it at four facilities; (4) enhanced cyber boundary protection for ATC facilities and their services; (5) completed certification and authorization on NAS systems; and (6) established a cyber security test facility at WJHTC.

Out-year cyber security work plans reflect the agency's Android Cyber Defense Strategy, which is a comprehensive, proactive approach to preventing and removing intrusions in the agency's computer networks. This strategy, which strives to emulate the defenses and resiliency of the human body against attack by infection and disease, involves hardening individual system and network elements, isolating elements to avoid "viral" spread, and backing up the elements to avoid service disruption. There are six reinforcing layers of protection: architecture simplification, element hardening, boundary protection, informed recovery, systemic monitoring, and orderly quarantine.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **DOT Strategic Goal – Homeland and National Security.**
- **DOT Strategic Goal -** Balance homeland and national security transportation requirements with the mobility needs of the Nation for personal travel and commerce.
- **DOT Objective 1 –** Support and implement U.S. security strategies and plans related to transportation.

Relationship to Performance Target

The FAA supports and implements security strategies and plans by: (1) ensuring effective preparedness, detection, response, and recovery regarding cyber attacks; (2) integrating information security efforts into all acquisition and operation phases to protect FAA people, buildings, and information; and (3) supporting the nation's efforts to safeguard homeland security, in particular the aviation infrastructure and industry.

Program Plans FY 2007 – Performance Output Goals

- Correct NAS vulnerabilities discovered through Plan of Actions and Milestones discovered through the certification and authorization process.
- Certify and authorize spiral releases of complex systems and newly discovered systems.
- Provide CSIRC enhancements to support NAS and the NAS Security Information Group.
- Enhance the NAS architecture regarding cyber security protection by developing cyber security requirements and reviewing certification and authorization work.
- Conduct initiatives to improve the reliability, availability, and integrity of NAS systems during various forms of cyber attack.
- Prototype adaptive quarantine techniques.

Program Plans FY 2008-2011 – Performance Output Goals

- Correct NAS vulnerabilities discovered through Plan of Actions and Milestones discovered through the certification and authorization process.
- Certify and authorize spiral releases of complex systems and newly discovered systems.
- Provide CSIRC enhancements to support NAS and the NAS Security Information Group.
- Enhance the NAS architecture regarding cyber security protection by developing cyber security requirements and reviewing certification and authorization work.
- Conduct initiatives to improve the reliability, availability, and integrity of NAS systems during various forms of cyber attack.
- Prototype adaptive quarantine techniques.
- Put into operation logical access control in support of implementing Presidential Directive/Hspd-12.
- Implement adaptive quarantine, which involves instituting procedures and processes to ensure that systems affected by a virus are properly identified and isolated from non-affected systems.
- Complete concept of operation and implement strategy for automated recovery, which involves isolating those systems that have been affected by a virus, instituting the fix, and making sure that, affected systems get back online as soon as possible.
- Develop architecture and engineering efforts for alternative solutions to secure new NAS systems.
- Monitor and take all actions necessary to ensure that the NAS information technology systems are not interrupted and are available at all times.
- Address vulnerabilities discovered through certifications and authorizations completed in prior years.
- Evaluate and acquire enhanced tools used by the CSIRC to address complex and rapidly changing cyber threats and vulnerabilities.

3A08, SYSTEM APPROACH FOR SAFETY OVERSIGHT (SASO)
FY 2007 Request $17.3M

- System Approach for Safety Oversight (SASO), A25.01-00

Program Description

SASO is an investment to increase aviation safety and control FAA costs by transforming the Flight Standards Service and those segments of the aviation industry it regulates to a national standard of System Safety. System Safety is universally recognized as the most effective and efficient way of preventing accidents. The SASO program will develop and implement a new proactive systems safety approach that significantly improves the FAA's ability to identify and address hazards and safety risks before they result in accidents. Since these risks exist in the operations of large and small air carriers, repair stations, pilot and mechanic schools, designee programs and other sectors of the aviation environment, SASO will re-engineer the oversight processes in each of these areas. Existing certification, inspection, designee oversight, and investigation procedures, as well as the current regulations will be evaluated, and overhauled where necessary. New processes will be structured to focus on; collecting, analyzing, and disseminating critical safety data; identifying indicators of systemic and individual hazards; and eliminating those conditions that pose safety risk.

In addition, existing information systems and tools will be examined and assessed to determine their ability to support systems safety oriented oversight. Redundant applications will be consolidated. Obsolete and unsuitable systems will be removed and replaced with an integrated suite of databases and analysis tools that coincide with the new systems based, risk management oriented processes. Newly designed processes and information systems will encompass all necessary human factors considerations to ensure their effective implementation, and the workforce will be trained in their application. The new systems and analysis/decision support tools will consistently provide accurate, critical information needed to make timely safety decisions, and the newly engineered oversight processes will emphasize the use of this data by the FAA when making critical oversight decisions. Finally, the program will exchange information from these systems with national and international government and industry organizations throughout the aviation community to increase awareness of systemic safety risks and maximize levels of safety.

The users of SASO include the 4,800 AFS employees in 9 regions at more than 120 headquarters and field offices throughout the United States, Europe, and Asia. In addition, it will serve more than 25,000 aviation industry professionals managing safety throughout the United States and around the world.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Increased Safety.**
- **FAA Objective 1 –** Reduce the commercial airline fatal accident rate.
- **FAA Performance Target 1 –** Reduce the airline fatal accident rate by 80 percent from the 1994-1996 baseline to a three-year rolling average rate of 0.010 per 100,000 departures by FY 2007.
- **FAA Performance Target 2** – Reduce the three-year rolling average fatal accident rate below 0.010 per 100,000 departures by FY 2010.

Relationship to Performance Target

SASO will contribute to a reduction in accident rates over the period FY 2003 through FY 2022. SASO proposes to achieve these results by Reengineering oversight processes to System Safety and Automating System Safety functions.

Program Plans FY 2007 – Performance Output Goals

- Complete Discovery and Analysis.
- Begin "To-Be" Business Process Design and System Consolidation Test Case.
- Complete Enterprise Integration Architecture.
- Complete 121 Pilot Project Software.

Program Plans FY 2008-2011 – Performance Output Goals

- Complete "To Be" Business Process Models.
- Complete Tier One Information Technology Requirements.
- Complete Consolidation Test Case.
- Complete Enterprise Integration Test Case.
- Complete Pilot Projects.
- Complete all AFS business process reengineering efforts by 2010.
- Begin SASO Implementation.

3A09, AVIATION SAFETY KNOWLEDGE MANAGEMENT ENVIRONMENT (ASKME)

FY 2007 Request $4.6M

- Aviation Safety Knowledge Management Environment, A26.01-00

Program Description

The ASKME project is intended to provide the Aircraft Certification Service a repository of critical safety technical information and data as well as a set of knowledge management and analysis tools for knowledge collection, dissemination, and analysis. These tools will be integrated into critical Aircraft Certification Service business functions to support proactive monitoring and analysis of safety-related data; expedited aircraft design and production approval decisions; improved collaboration between program/project management, inspectors, and engineers; and knowledge transfer capabilities.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Increased Safety.**
- **FAA Objective 1 –** Reduce the commercial airline fatal accident rate.
- **FAA Performance Target 1 –** Reduce the airline fatal accident rate by 80 percent from the 1994-1996 baseline to a rate of 0.010 per 100,000 departures by FY 2007.
- **FAA Performance Target 2 –** Reduce the three-year rolling average fatal accident rate below 0.010 per 100,000 departures by FY 2010.

Relationship to Performance Target

The ASKME project contributes to FAA's air carrier and general aviation safety goals by providing a database of information and an accident precursor awareness tool suite to be used in certifying aircraft.

Program Plans FY 2007 – Performance Output Goals

- Implement the Electronic File Service.
- Implement Phase I of the Monitor Safety Related Data system.
- Gather detailed business requirements and perform analysis and design activities for Phase II of Monitor Safety Related Data.

Program Plans FY 2008-2011 – Performance Output Goals

- Conduct system functional requirements gathering and analysis for the Airworthiness Certification Process, Compliance and Enforcement Actions Process, and Designee Supervision and Past Performance Process.
- Design, develop, and implement the following Processes:
    - Airworthiness Certification Process,
    - Compliance and Enforcement Actions Process, and
    - Designee Supervision and Past Performance Process.

B. TRAINING, EQUIPMENT, AND FACILITIES

3B01, AERONAUTICAL CENTER INFRASTRUCTURE MODERNIZATION
FY 2007 Request $13.8M

- Aeronautical Center Infrastructure Modernization, F18.00-00

Program Description

The Aeronautical Center Infrastructure Modernization program supports FAA Training, Logistics, Engineering, Research, and Regulation and Certification programs and business services. This program upgrades and/or renovates aging facilities and infrastructure at the Mike Monroney Aeronautical Center. The addition of new equipment to the FAA's inventory, coupled with existing NAS support requirements, increases the need to maintain suitable space at the Aeronautical Center to house NAS support functions. In addition to facilities, the related infrastructure – such as storm sewers, water lines, and telecommunications equipment – must be upgraded. The center has 117 buildings (85 owned by the FAA, 32 leased to the FAA by the Oklahoma City Airport Trust), and 31 other structures, approximately three million square feet under roof.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Organizational Excellence.**
- **FAA Objective 2 –** Improve financial management while delivering quality customer service.
- **FAA Performance Target 1 –** Develop and implement a centrally managed cost control and productivity improvement program to lead the agency in reducing costs.

Relationship to Performance Target

The Aeronautical Center Infrastructure Modernization program improves efficiency and effectiveness by updating facilities and support infrastructure to meet the need of mission support organizations located at the Aeronautical Center. Efficiencies in logistics support translate to the right part in the right place to support the NAS. Efficiencies in aviation training infrastructure translate to more effective student training. Efficiencies in aviation research translate to improved understanding of the impact of human factors on aviation personnel and safer skies.

Program Plan FY2007 – Performance Output Goals

- Begin first phase of renovation construction of the Multi-purpose building.
- Install telecommunications equipment upgrades of: telephone system cabling, network equipment, and NORTEL telephone switch.
- Renovation construction of the Flight Inspection building to provide space for mission critical functions.
- Renovation construction of the Air Navigational Facility #2 building.

Program Plan FY2008-2011 – Performance Output Goals

- Begin Multi-purpose building renovation construction, second phase.
- Provide telecommunications upgrades; install telecommunications equipment.
- Design and construction of Hangar 9 fire suppression system to protect FAA aircraft in the event of fire.
- Complete the third and fourth phases of Multi-purpose building renovation construction.
- Accomplish telecommunications upgrades.
- Design and complete renovation construction to the Systems Training building.

System Implementation Schedule

The following buildings will be returned to service as phased renovation construction is completed:

- Air Navigation Facility #2, FY 2008,
- Hangar 9 Fire suppression systems, FY 2009,
- Multi-purpose building, FY 2011, and
- Systems Training building, FY 2013.

3B02, NATIONAL AIRSPACE SYSTEM (NAS) TRAINING FACILITIES

FY 2007 Request $14.0M

- A, NAS Training – Equipment Modernization, M20.00-00
- B, NAS Training – Equipment Modernization – Training Simulators, M20.01-00

A, NAS TRAINING – EQUIPMENT MODERNIZATION, M20.00-00

Program Description

The FAA Academy conducts technical training for air traffic controllers, airway facilities technicians, aviation safety inspectors, and other specialists, and is responsible for internal training infrastructure. Training on the new systems being installed (resulting from NAS modernization) requires updated simulators, training media, and communications equipment. This program provides funding to update the simulators, training media, and communications equipment that significantly cuts training costs and creates a well-trained technical workforce.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Organizational Excellence.**
- **FAA Objective 1 –** Make the organization more effective with stronger leadership, increased commitment of individual workers to fulfill organization-wide goals, and a better prepared, better trained, safer, diverse workforce.
- **FAA Performance Target 1 –** Increase Employee Attitude Survey scores in the areas of management effectiveness and accountability by at least 5 percent by FY 2010.

Relationship to Performance Target

A well-trained technical workforce is an effective and accountable workforce. The NAS Training Equipment Modernization program enhances operational/maintenance training for NAS systems. It also increases training efficiency by reducing the time it takes to train this workforce. This equates to less time spent in training and more time on position in the facility. The benefits of reduced training cost and a more effective workforce are reduced time and cost of operating and sustaining the NAS.

Reducing training time has provided substantial benefits. These benefits result from upgraded simulators, training media and communication equipment. Operational efficiency is improved because the Academy-trained technical workforce is applying the newly acquired skills to the operational elements of the NAS. All of these factors can be expected to contribute to an increase in management effectiveness scores in the Employee Attitude Survey.

B, NAS TRAINING – EQUIPMENT MODERNIZATION – TRAINING SIMULATORS, M20.01-00

Program Description

The NAS Training Simulator project will acquire and deploy training simulators to selected air traffic facilities in the field. Similar technology has been implemented at the Academy and by the US Air Force has proven successful. This project focuses on using technology to assist FAA in training newly hired controllers during the next 10 years in response to projected staffing requirements. This program provides funding to acquire simulators for air traffic facilities, training media, and communications equipment.

Relationship of Program to FAA Strategic Goals, Objective and Performance Target

- **FAA Strategic Goal - Increased Safety.**
- **FAA Objective 5** – Enhance the safety of FAA's air traffic systems.
- **FAA Performance Target 1 –** By FY 2010, reduce Category A and B (most serious) operational errors to a rate of no more than 3.18 per million activities.

Relationship to FAA Performance Target

Through the use of simulation at En Route and Terminal facilities, the FAA can further enhance training for air traffic controllers in a high fidelity, realistic environment. Not only will this reduce on-the-job training time, but also significantly reduce operational errors. Students need the simulated environment to learn from mistakes-- mistakes that could prove fatal if made with live traffic. Once again, this technology has already been proven at the FAA Academy and by the US Air Force.

Program Plans FY 2007 – Performance Output Goals

En Route:

- Acquire and deploy interim simulator systems at selected air route traffic control center locations.
- Conduct "train the trainer" training.
- Commence Stage III &IV new hire training at designated air route traffic control center locations.

Terminal:

- Acquire and install simulators at selected air traffic control tower hub locations.
- Begin installation of simulator software databases for selected air traffic control tower hub and satellite locations.
- Begin air traffic instructor simulator training at selected hub locations.
- Contractor Logistic Services implemented.
- Begin simulator training for new hires at hub locations.

Program Plans FY 2008-2011 – Performance Output Goals

En Route:

- Continue Stage III & IV new hire training.
- Training constraint relief begins.
- Interim systems program lifecycle ends in FY 2010.

Terminal:

- Complete installation of simulator software databases at selected air traffic control towers hubs.
- Complete air traffic instructor simulator training.
- Continue simulator training for new hires and expand training to include transfers, proficiency and skill enhancement, and recertification.
- Continue Contractor Logistic Services.
- Perform technical refresh on the deployed simulator systems.

3B03, DISTANCE LEARNING
FY 2007 Request $1.5M

- Distance Learning, M10.00-00

Program Description

The Distance Learning program will replace Computer-Based Instruction (CBI) Delivery Platforms at all CBI Learning Centers, increase connectivity, and upgrade network multimedia support and services. The system consists of about 1,400 Learning Centers located at virtually every FAA facility around the world. The FAA is replacing the platforms for two reasons: (1) to support high-performance media and simulations required in many lessons; and (2) because replacement parts for current platforms are becoming obsolete and hard to obtain.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Organizational Excellence.**
- **FAA Objective 1 –** Make the organization more effective with stronger leadership, increased commitment of individual workers to fulfill organization-wide goals, and a better prepared, better trained, safer, diverse workforce.
- **FAA Performance Target 1 –** Increase Employee Attitude Survey scores in the areas of management effectiveness and accountability by at least 5 percent by FY 2010.

Relationship to Performance Target

The major benefit of distance learning is the substantial reduction in student travel and per diem costs associated with resident-based training. In addition, distance learning delivery methods increase training effectiveness, increase training opportunities for all FAA employees, provide flexibility in training schedules through local management control, and decrease the time employees spend away from their worksite. The FAA CBI system must deliver initial operator, transition, and maintenance training for many NAS programs. By providing a standard training delivery and equipment simulation platform across all NAS programs, the need for such equipment and the space it would occupy is much reduced. All of these factors contribute to a reduction in the unit cost of service for enroute, terminal, and flight service. This program contributes well over $5M savings each year. These entire efficiencies combine to produce a better prepared, better trained, safer diverse workforce. Such an improvement in working conditions and workforce skills preparation is expected to help increase the Employee Attitude Survey scores in the areas of management effectiveness and accountability by at least 5 percent.

ACTIVITY 4. FACILITIES AND EQUIPMENT MISSION SUPPORT

4A01, SYSTEM ENGINEERING AND DEVELOPMENT SUPPORT
FY 2007 Request $25.9M

- A, System Engineering and Development Support – SETA, M03.01-00
- B, Provide ANF/ATC Support (Quick Response), M08.01-00

A, SYSTEM ENGINEERING AND DEVELOPMENT SUPPORT – SETA, M03.01-00

Program Description

The System Engineering and Development Support project enables the FAA to contract for critical expertise to assist in developing and managing the NAS Architecture and key modernization projects. System engineering support is also used for preparing four of the key modernization plans, the Flight Plan, NAS Operational Evolution Plan, Capital Investment Plan, and the NAS Aviation Research Plan. System engineering and integration are key to the NAS Architecture's success and to maintaining interface control between current systems and new systems.

Besides system engineering, the contracts under this program support the Air Traffic Organization (ATO) programs for automation systems, communications, navigation and landing aids, surveillance, and weather. This support includes program management, financial management and investment analysis support to assist with planning, decision making, and budgetary oversight of the activities involved in implementing newly acquired systems, components, and equipment in existing operational NAS facilities.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Organizational Excellence.**
- **FAA Objective 2 –** Improve financial management while delivering quality customer service.
- **FAA Performance Target 1 –** Develop and implement a centrally managed and highly visible cost control program to lead the agency in reducing costs.

Relationship to Performance Target

System Engineering and Development Support contributes to organizational excellence by providing support for designing and managing NAS modernization. With contractor assistance, the FAA is able to plan, analyze, and manage NAS system improvements more effectively. In addition, financial management and investment analysis support helps the FAA track cost, balance competing budgetary resources and make important decisions to ensure that limited program dollars provide the greatest return on investment.

B, PROVIDE ANF/ATC SUPPORT (QUICK RESPONSE), M08.01-00

Program Description

This program provides quick response support for ATO organizations to solve issues related to information technology and financial management systems. Examples include: providing additional ATO Cost Accounting Reports; installing an Information Technology (IT) link to support operations research; IT support for the DELPHI accounting system; and ensuring connectivity for automation systems in the multiple FAA buildings. It also provides emergency engineering response for unforeseen regional problems such as relocating an antenna for a remote communication facility and removing a decommissioned tower. These projects are unexpected and must be done swiftly.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Organizational Excellence.**
- **FAA Objective 2 –** Improve financial management while delivering quality customer service.
- **FAA Performance Target 1** – Develop and implement a centrally managed cost control and productivity improvement program to lead the agency in reducing costs.

Relationship to Performance Target

This project improves financial management by supporting the systems that generate financial baselines and track costs for individual projects. It allows financial management system problems to be corrected quickly so detailed cost and schedule information is available when needed. This allows managers to more quickly identify programs that are at risk and take corrective action. Quick action to resolve regional issues and sustain regional operations leads to a higher level of customer satisfaction.

4A02, PROGRAM SUPPORT LEASES
FY 2007 Request $45.0M

- Program Support Leases, M08.06-00

Program Description

This program secures real property rights required to operate the NAS by providing the payments for approximately 2,395 land leases, 670 space leases, and 75 leases covering both land and space for operational facilities. It also funds the purchase of land when doing so is more economically feasible than continuing to lease.

For FY 2007, the request will fund approximately 3,140 leases, other real estate requirements and will include:

- payment of rents on approximately 3,140 land and/or space leases that directly support navigation, communication, weather, and air traffic control facilities;
- costs associated with the rental and management of land and/or space for service/maintenance centers, deployment/development centers, laboratories, test beds, and other types of facilities that support the deployment and operation of technical facilities;
- payments for condemnation of real property interests;
- funds for conversion of existing leases to fee ownership;
- costs for real estate appraisals, market surveys, title reports, and other costs associated with the acquisition and management of real property assets;
- funds for the management and administration costs for establishing and maintaining a database of leases and owned facilities, for developing business tools to enhance logistics activities, and for implementing program efficiency practices; and
- funding for certain costs associated with real property disposals with sale proceeds to be used to offset other direct and related program costs.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 3 –** Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

Relationship to Performance Target

The FAA Program Support Leases project contributes to the FAA's greater capacity goal by providing funding for existing leases for land and space that directly support NAS operational facilities for air traffic

control, communications, air navigation, weather reporting and landing systems, and such critical NAS components as Air Traffic Control Towers (ATCT's), Technical Radar Approach Control facilities (TRACON's) and en route systems. The leases are contractual commitments and provide the legal right to locate, operate, and maintain critical ATC facilities essential for minimizing outages that result in delays and decreased capacity.

4A03, LOGISTICS SUPPORT SERVICES (LSS)

FY 2007 Request $7.9M

- NAS Regional/Center Logistics Support Services, M05.00-00

Program Description

The Logistics Support Services Contract (LSSC) program utilizes contractor-supplied services to perform real property acquisition, materiel management, and contracting activities in support of FAA CIP projects, and to conduct capitalization and property control-related activities. These services currently provide a significant portion of the workforce for acquisition, real estate, and materiel management at regions and centers. The LSSC program is instrumental in establishing new or upgraded facilities, including air traffic control towers and TRACONS throughout the NAS. LSSC resources will continue to be used for asset tracking and documentation efforts to obtain and maintain a clean audit opinion. The services will also be used to support the FAA Facility Security Risk Management (FSRM) program.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Organizational Excellence.**
- **FAA Objective 2 –** Improve financial management while delivering quality customer service.
- **FAA Performance Target 1** – Develop and implement a centrally managed cost control and productivity improvement program to lead the agency in reducing costs

Relationship to the Performance Target:

The contractor maintains adequate documentation, suitable for independent audit, to provide a basis for the accounting system for capital cost of facilities throughout the FAA. Having accurate accounting records and improving cost controls for real property management allow for efficiencies in acquisition, leasing and managing property.

4A04, MIKE MONRONEY AERONAUTICAL CENTER LEASES

FY 2007 Request $13.5M

- Mike Monroney Aeronautical Center – Leases, F19.00-00

Program Description

The FAA and the Oklahoma City Airport Trust have a fixed-term lease agreement through 2012 for approximately 1,100 acres of land and 32 leased buildings, which comprise the Aeronautical Center. The Center requires large parcels of land as NAS test sites for surveillance radar, communications, weather, and navigation/landing systems. The Center supports air traffic training, aviation research, engineering support of NAS equipment, logistics supply and repair, aviation medical research, and other important aviation regulation, certification, and business functions.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Organizational Excellence.**
- **FAA Objective 2 –** Improve financial management while delivering quality customer service.
- **FAA Performance Target 1** – Develop and implement a centrally managed cost control and productivity improvement program to lead the agency in reducing costs.

Relationship to Performance Target

Aeronautical Center operations result in efficiencies in logistics support, aviation training, second-level engineering support to the NAS, regulation and certification, aviation research, and business services that translate into improved cost control and more effective support services to the FAA.

4A05, TRANSITION ENGINEERING SUPPORT

FY 2007 Request $24.7M

- NAS Implementation Support Contract (NISC), M22.00-00

Program Description

The NISC supports organizations responsible for deploying, implementing, and integrating many different NAS components and equipment. Work products that support transition, implementation, and integration activities include: transition plans and timelines, equipment waterfall schedules, engineering site preparation packages, site implementation plans, analysis of environmental impacts, test procedures, site test monitoring, corporate work planning, and configuration management.

NISC supplements the agency's technical workforce in integrating CIP projects into the NAS. The pace of ATC modernization requires supplemental technical staffing to the existing FAA workforce. Additional, highly skilled, experienced personnel is provided at cost-effective rates that support over 80 CIP projects within the NAS, including STARS, Capstone, En Route Automation, ATCT/TRACON Replacement, and Occupational Safety, Health, and Environmental projects.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Organizational Excellence.**
- **FAA Objective 2 –** Improve financial management while delivering quality customer service.
- **FAA Performance Target 1 –** Develop and implement a centrally managed cost control and productivity improvement program to lead the agency in reducing costs.

Relationship to Performance Target

The FAA's transition, implementation and integration engineering contract provides experienced personnel at cost effective rates to support regional and headquarters offices with coordination of NAS programs. It also provides support to key FAA functions including F&E program management. This support assists the FAA in the financial management of a variety of F&E NAS modernization programs and projects.

4A06, FREQUENCY AND SPECTRUM ENGINEERING
FY 2007 Request $4.5M

- NAS Spectrum Engineering Management – NAS Spectrum Engineering Sustained Support, M15.01-00
- NAS Spectrum Engineering Management – Frequency Interference Support/Resolution, M15.02-00
- Global Positioning System Signal Monitoring, N12.03-01

Program Description

These programs provide spectrum engineering and frequency management for all FAA projects and facilities using radio frequencies. Prominent projects include advancing civil aviation interests in developing and coordinating the U.S. position for the 2007 World Radio Communication Conference; ensuring protection of aeronautical safety service radio spectrum; conducting frequency and spectrum studies in support of the International Civil Aviation Organization (ICAO) to protect frequency bands of the Global Navigation Satellite System (GNSS); and supporting efforts to modernize and develop equipment for more efficient radio frequency engineering capabilities that focus on increasing capacity and reducing air traffic delays. Additionally, this funding maintains and upgrades the automated frequency engineering and database management program model, radio frequency interference database, GPS anomaly database and provides spectrum management guidance to FAA personnel in national and international forums.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Greater Capacity.**
- **FAA Objective 1 –** Increase capacity to meet projected demand.
- **FAA Performance Target 3 –** Sustain adjusted operational availability at 99.5 percent for the reportable facilities that support the 35 OEP airports through FY 2010.

Relationship to Performance Target

This NAS Spectrum Engineering Management program supports the Greater Capacity Goal by ensuring 100 percent availability of the radio frequency spectrum required to install new or modify existing, communications, navigation and surveillance systems to support new runways and airspace redesign efforts. Spectrum engineering restoration of facility service interruptions due to interference will provide greater capacity as well.

Program Plans FY 2007 – Performance Output Goals

- Continue work on the implementation of the 25 Very High Frequency air-to-ground communications initiatives to expand the life of the current system.
- Continue engineering frequencies to support the reduced vertical separation minima and the national airspace redesign programs.
- Engineer required Expanded Service Volumes to support Area Navigation (RNAV) approaches.
- Modernize frequency engineering automation tools.
- Perform studies to develop future aeronautical spectrum requirements in accordance with International Telecommunications Union recommendations.
- Continue providing input for the development of the U.S. position for the World Radiocommunication Conference (WRC) 2007.
- Assess impacts on aeronautical systems by ultra-wideband devices.
- Perform Automatic Dependent Surveillance – Broadcast technical and capacity analysis.
- Assess the spectrum requirement of systems supporting the runway incursion program.

Program Plans FY 2008-2011 – Performance Output Goals

- Continue work on the implementation of the 25 Very High Frequency air-to-ground communications initiatives to expand the life of the current system.
- Engineer required Expanded Service Volumes to support RNAV approaches.
- Implement policy decisions from the 2007 WRC.
- Begin implementing the National Airspace System Interference Detection, Locating and Mitigation (NAS IDLM), M43.01, pending JRC approval.
- Develop a spectrum transition plan for the next generation air-to-ground communication system.
- Support WRC 2011.
- Support development of WRC 2010 positions.

4A07, TECHNICAL SUPPORT SERVICES CONTRACT (TSSC)

FY 2007 Request $35.0M

- Technical Support Services Contract, M02.00-00

Program Description

TSSC helps the FAA ensure timely installation of equipment for NAS modernization. Engineers and technicians, hired under this contract, oversee prime contractors and perform direct Facilities and Equipment project work themselves. They perform site surveys, site preparation, and equipment installation, as well as several other contract functions. As a work force multiplier, the TSSC contract is the agency's primary vehicle to provide a supplemental work force to install capital equipment to ensure that installation schedules will be met. Without this supplemental source of engineers and technical staff, installation and equipment modernization projects would be delayed.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Organizational Excellence.**
- **FAA Objective 2 –** Improve financial management while delivering quality customer service.
- **FAA Performance Target 1 –** Develop and implement a centrally managed cost control and productivity improvement program to lead the agency in reducing costs .

Relationship to Performance Target

The TSSC contributes to cost control by installing new equipment on a timely basis. This avoids costs of holding and storing equipment and also allows the FAA to receive the benefits of more modern equipment sooner. In a typical year, more than 3,700 separate projects are completed. Customers using TSSC support services benefit from high quality contractor support that is maintained through a twice-a-year award fee review of contractor quality, cost, and schedule performance.

4A08, RESOURCE TRACKING PROGRAM (RTP)

FY 2007 Request $1.7M

- Resource Tracking Program (RTP), M08.14-00

Program Description

The RTP contributes to the success of the FAA's mission by providing the primary management software system (including hardware, software, development, training and support) used by the regions, Implementation Centers and Aeronautical Center for requirements identification, internal budget preparation, implementation planning, resource estimating, project tracking and performance measuring of projects. The RTP enables the sharing of the agencies project data in the various stages of implementation (i.e., planned, scheduled, funded, executed and closeout). The system provides the data necessary to plan

and execute the Agency's Corporate Work Plan. The RTP provides the data and information necessary to management in making informed decisions and the overall impact of the Agency's Corporate Work Plan. The RTP system and its data are continuously utilized for reporting project metrics to various project managers, responsible engineers, program offices and various other customer stakeholders.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Organizational Excellence.**
- **FAA Objective 2 –** Improve financial management while delivering quality Customer Service.
- **FAA Performance Target 1** – Develop and implement a centrally managed cost control and productivity improvement program to lead the agency in reducing costs

Relationship to Performance Target

The RTP contributes to the FAA organizational excellence goal by providing the enterprise level project management system. The antiquated Legacy RTP systems currently operate in a distributed environment. The final steps in centralizing the system are underway. The centralized system will increase the quality of customer service. Both management and engineers will have up to date information on projects. Furthermore, the centralization effort will standardize reporting at all management levels allowing managers to better control overall project costs.

Program Plans FY 2007 – Performance Output Goals

- Recertify RTP Security Certificate and Accreditation for continued operation.
- Implement critical security patches on all applicable hardware and software.
- Implement and utilize the RTP2K centralized system.
- Plan for major upgrade of project management software.
- Implement ORACLE RAC technology to further control system management costs.

Program Plans FY 2008-2011 – Performance Output Goals

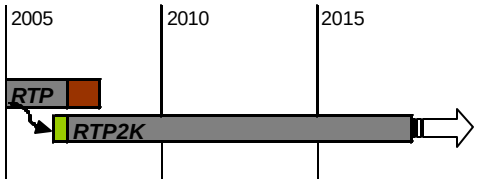
- Implement major upgrade of project management software.
- Plan for system hardware and software refresh (system reaching end of life cycle (5yr)).
- Implement Phase 2 RTP program upgrades approved by customer and stakeholders.
- Implement hardware and software refresh (system > 5yrs old) site.

System Implementation Schedule

Resource Tracking Program (RTP) 2K

First Site Decom: January 2007 -- Last Site Decom: December 2007

First site IOC: October 2006 -- Last site IOC: October 2006



4A09, CENTER FOR ADVANCED AVIATION SYSTEM DEVELOPMENT (CAASD)

FY 2007 Request $70.0M

- CIP Systems Engineering & Technical Assistance – MITRE, M03.02-00

Program Description

The CAASD is the FAA's Federally Funded Research and Development Center (FFRDC) operated under a long-term Sponsoring Agreement with the MITRE Corporation. A Product Based Work Plan, approved by the FAA's FFRDC Executive Board, Work Plan defines an outcome-based program of technically complex research, development, and system engineering assignments designed to support the goals and requirements of the NAS, as well as to ensure its continued growth, efficiency, safety and security. The work plan is developed annually within the context of the FAA Flight Plan, Next Generation Air Transportation System

(NGATS) Integrated Plan, and other agency plans. The FFRDC Long Range Plan, approved in December 2005, documents projected future CAASD activities through 2010. Those activities, by outcome, include:

NAS and NGATS Systems Integration and Evolution: Analyze NAS-wide strategic issues to inform NAS transformation strategy for efficient investment and operational decisions; provide definition and structure to the NAS Enterprise Architecture; assess and provide recommendations for harmonization of U.S. and international plans for flight data processing; assess and provide recommendations for NAS evolution paths; develop operational concepts for the safe, efficient, and compatible operation of Unmanned Aircraft Systems in the NAS; and develop recommendations and strategies for implementing net-centric strategies that reduce NAS complexity while improving user access to needed information.

Communications Modernization: Conduct technical analyses to support architecture alternatives, engineering analysis, network definition, and transition strategy studies for the FAA Telecommunications Infrastructure (FTI) program. Conduct studies and analyses addressing Spectrum and radio technology issues. Provide technical and operational insight into the implementation of data link services in the NAS.

Performance-Based NAS: Support establishment of new concepts for achieving a performance-based NAS; identifies airports/runways that will benefit from RNP/RNAV procedures; validate Flight Standards procedure development tools; identify issues and provides recommendations for the implementation of RNP/RNAV procedures. Analyzes navigation assets, divestiture of navigation aides, and harmonization of Global Positioning System (GPS) and Galileo.

En Route Evolution: Perform system engineering analyses for the en route system architecture and operational applications; develop concept of operations and prototypes for evaluation of new capabilities and procedures; develop system requirements; conduct risk management analyses and informs the FAA's of the operational, security, and maintainability aspects of the new en route automation system to ensure the successful deployment/transition of En Route Automation Modernization (ERAM) Release 1; develop functional and performance test guidance to ensure operational/technical compliance with ERAM requirements; develop en route performance metrics; prioritize en route extensible capabilities, that span across operational domains for ERAM Releases 2/3.

Terminal Operations and Evolution: Provide technical analyses and recommendations on architecture alternatives; provide technical/operational insight into systems that can safely reduced separation standards; provide risk analyses to identify future wake turbulence mitigation procedures.

Airspace Design and Analysis: Perform technical analyses that informs the FAA and Industry on airspace design and management; develop modeling, simulation, and analysis capabilities facilitating airspace design; research issues that influence strategic policy in airspace management and design (sectorization concepts); and integrate all theses efforts to provide a national, system-wide optimization of airspace.

NAS System Operations: Provide analytic information to develop operational strategies to manage emerging and chronic congestion; provide analyses to support customer responsiveness and improve traffic management strategies; design, model, and assess new traffic management procedures; develop analysis techniques and data to improve information on en route/terminal controller workload; and develop/evaluate new metrics to measure overall NAS operational performance.

Traffic Flow Management Evolution: Analyze TFM system requirements and system design to ensure it meets operational needs; develop metrics that provide insight on the performance of the TFM domain; conduct operational feasibility/implementation risk analysis; develop algorithms and prototype capabilities and conduct human-in-the-loop evaluation; collaborate with the NAS users, TFM researchers, and FAA contractors on new capabilities, procedures, and priorities for evolving the TFM operations

Future NAS Performance and Analysis: Assess the NAS-wide operational performance impacts of investment options and decisions; improve understanding of the future environment, including anticipated demand at airports and for airspace, and perform analyses to understand the affordability and long-term economic implications of different investments, operational changes, or proposed policies

Aviation Safety: Perform technical analyses of NAS-wide runway incursion risk and prioritize implementation of appropriate operational/technological mitigations actions. Develop metrics and processes that allow FAA to identify potential operational/architecture safety issues; and identify and assess the feasibility of new or advanced capabilities that mitigate safety issues in the NAS.

Mission Oriented Investigation and Experimentation: Conduct research to develop/explore tools and techniques for estimating controller productivity in the future NAS; enhance capabilities to estimate future aviation timetables; advance modeling capabilities that model global demand/capacity, develop a concept for Unmanned Aircraft Systems conflict detection and collision avoidance in civil airspace; and establish ways to apply state-of-the-art tools for traffic flow management data visualization and collaborative decision making.

NAS-Wide Information System Security: Provide technical guidance on engineering security capabilities into the NAS that reduces overall cost, leverages shared services and builds security into the underlying IT infrastructure; provide guidance on security threats, technology, standards, and practices being applied in other government/commercial enterprises in order to evolve Information Systems Security to adapt to changing threats and technology advances; propose a solution to implement a standards-based Personal Identity Verification card, and to use this for physical and logical access control, as required by the Presidential Decision Directive.

Broadcast and Surveillance Services: Research and design Automatic Dependent Surveillance-Broadcast (ADS-B) ground and cockpit-based solutions to support deployment of ADS-B throughout the entire NAS. Assess the impact of ADS-B on safety, capacity, and efficiency benefits for the FAA and users; develop domestic/international requirements and engineering standards for future ADS-B applications in close coordination with the users and manufacturers as part of RTCA, the International Civil Aviation Organization (ICAO), FAA, and Eurocontrol standards development activities; develop ADS-B security solutions that will enable NAS-wide information sharing while enforcing controlled access to sensitive airspace within the NAS.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Increased Capacity.**
- **FAA Objective 3 –** Increase on-time performance of scheduled carriers.
- **FAA Performance Target 1 –** Through FY 2010, maintain an 87.4 percent on-time arrival for all flights arriving at the 35 OEP airports, no more than 15 minutes late due to NAS related delays.

Relationship to Performance Target

The CAASD assists the FAA in analyzing and designing new systems to increase the efficiency and effectiveness of NAS systems. It performs analytical research, develops operational concepts, and tests new procedures. FAA adoption of these new systems and procedures for use in the NAS improves on-time performance, increases capacity, and provides a safer and more efficient air transportation system.

4A10, NOTAMS AND AERONAUTICAL INFORMATION PROGRAMS
FY 2007 Request $4.0M

- A, NAS Aeronautical Information Management Enterprise System (NAIMES), A08.01-00
- B, NOTAMS Infrastructure / Distribution (NOTAM Distribution Program (NDP)), A08.01-01

A, NAS Aeronautical Information Management Enterprise System (NAIMES), A08.01-00

Program Description

The FAA has established NAIMES to provide worldwide sharing of aeronautical information. NAIMES is an ISO 9001:2000/Qualified Internet Communication Provider approved program that consists of a number of closely integrated systems that provides domestic, military, and international aviation users with secure real-time access to critical aeronautical information and other services that are essential for flight planning and aviation operations.

NAIMES maintains and operates the Joint Department of Defense (DoD) and FAA US Notices to Airmen (NOTAM) System (USNS) & Master Database, Defense Internet NOTAM Service (DINS), Aeronautical Information System Replacement (AISR), Central Altitude Reservation Function (CARF), Graphical Temporary Flight Restriction (GTFR) and Special Use Airspace (SUA) Display System, NOTAM Distribution System (NDS), FAA PilotWeb, NOTAM Entry System (NES), National Operational Data Archive (NODA), NAS Resources (NASR), eNASR, CAPSTONE/Wide Area Augmentation System (WAAS)/Global Positioning System (GPS) outage reporting system, Internet Access Point (IAP), and network information services.

NAIMES provides multi-facetted services to the NAS, the DoD, Department of Transportation, Department of Agriculture, US Forest Service, Department of Interior, Commercial Air Carriers, General Aviation users, and International users. NAIMES services are used in all FAA and DoD facilities worldwide.

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Increased Safety.**
- **FAA Objective 2 –** Reduce the number of fatal accidents in general aviation.
- **FAA Performance Target 1–** By FY 2009, reduce the number of general aviation and nonscheduled Part 135 fatal accidents to no more than 325 (from 385, which represents the average number of fatal accidents for the baseline period of 1996-1998).

Relationship to Performance Target

The NAIMES program provides critical safety-related data, including NOTAMs other aeronautical information, to FAA, industry, and general public stakeholders. The provision of this data contributes to the reduction in the number of general aviation and nonscheduled Part 135 fatal accidents

NAIMES has long recognized that Aeronautical Information Management (AIM) is critical to ensure increased safety and capacity while maintaining a high percentage of on-time arrivals especially for flights to OEP airports. NAIMES enables the effective movement of aeronautical information including surveillance information, flight movement and NAS messages, NOTAMs, weather, and fixed asset data. NAIMES provides scalable, standards-based, high-reliability systems and network-centric services designed to provide legacy and future users with secure, real-time access to critical aeronautical information, essential for domestic, military, and international aviation operations. NAIMES is implementing NAS Architecture Version 5 and is continuing to modernize air traffic operations in support of the Next Generation Air Transportation System (NGATS) Program. NAIMES directly supports Traffic Flow Management and Collaborative Decision Making in the NAS.

Program Plans FY 2007 – Performance Output Goals

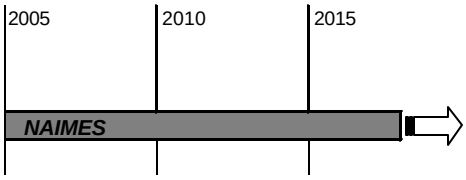
- Initiate replacement of selected legacy CARF system components.
- Initiate implementation of the International Civil Aviation Organization compliant standard for NOTAM and NASR processes.
- Complete AISR Workstation Replacement (ARTCCs).
- Complete the implementation of the Aeronautical Information Exchange Model (AIXM) compatible NAS Aeronautical Information Language Version 1.0.

Program Plans FY 2008-2011 – Performance Output Goals

- Continue NAIMES enhancements and sustainment of system infrastructure, including the development of enhanced web services.

Program Implementation Schedule

NAS Aeronautical Information Management Enterprise System (NAIMES)
First site IOC: 2000 -- Last site IOC: 2000



B, NOTAMS Infrastructure / Distribution (NOTAM Distribution Program (NDP)), A08.01-01

Program Description

The Notice to Airmen (NOTAM) Distribution Program (NDP) provides a standardized, automated NOTAM distribution system that ensures that NOTAMs are delivered to FAA ATC facilities in a timely, accurate and reliable manner NOTAMs inform pilots of changes in conditions in the NAS. The program originated from a June 2001 FAA memorandum identifying weaknesses in the current NOTAM distribution method, emphasizing the urgent need for a replacement system to help ensure that critical safety information reaches the pilot and other system users. NDP deployments are dependent upon the availability of FAA Telecommunications Infrastructure (FTI) internet protocol services at facilities that will receive the NOTAM Distribution System (NDS).

The NDP will automate, standardize, and provide centralized NOTAMs dissemination to approximately 700 FAA facilities using reliable telecommunications provided by the FTI network. NOTAM data from the United States NOTAM System (USNS) central database in Herndon, Virginia will be transmitted to the FAA's Airport Traffic Control Towers (ATCTs), Terminal Radar Approach Controls (TRACONs), Air Route Traffic Control Centers (ARTCCs), Federal Contract Towers, and Flight Service Stations (FSSs). In addition, the system provides for NOTAM receipt acknowledgement and an evolutionary path for the eventual distribution of all classes of NOTAMs (Domestic, Flight Data Center, ICAO, Military and Local).

Relationship of Program to FAA Strategic Goal, Objective, and Performance Target

- **FAA Strategic Goal – Increased Safety.**
- **FAA Objective 1 –** Reduce the commercial airline accident rate.
- **FAA Performance Target 2 –** Reduce the three-year rolling average fatal accident rate below 0.010 per 100,000 departures by FY 2010.

Relationship to Performance Target

The NDP modernizes the processing and distribution of critical NOTAM information to FAA ATC facilities and other end users in a timely and standardized format. This will contribute to the reduction in the commercial airline fatal accident rate.

Program Plans FY 2007 – Performance Output Goals

- Continue efforts toward achieving Joint Resource Council (JRC) decision.

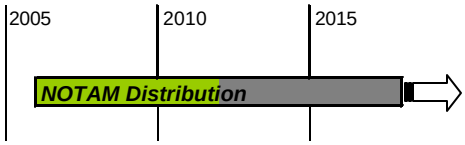
Program Plans FY 2008-2011 – Performance Output Goals

- Continue development, testing, hardware procurement, Tech refresh, and deployment of NDP systems to Terminal facilities (ATCT, TRACON, and FCTs).
- Continue implementation of the solution to En Route (ARTCCs) facilities.
- Update the Security Certification and Authorization Package.

Program Implementation Schedule

Notice to Airmen (NOTAM) Distribution

First site IOC: 2006 -- Last site IOC: 2011



Federal Aviation Administration

National Airspace System

Capital Investment Plan

Appendix C

Fiscal Years 2007 – 2011

APPENDIX C

FACILITIES AND EQUIPMENT ESTIMATED EXPENDITURES

FAA future budget projections are not released to the public due to the requirement for the FAA budget to be approved by the Office of the Secretary of Transportation and Office of Management and Budget and submitted as part of the President's budget to Congress.

Federal Aviation Administration

National Airspace System

Capital Investment Plan

Appendix D

Fiscal Years 2007 – 2011

LIST OF ACRONYMS AND ABBREVIATIONS

A	
A/G	air-to-ground
ABAS	aircraft based augmentation system
ACE-IDS	automated surface observing system controller equipment information display system
ADAS	automated weather observation data acquisition system
ADL	aeronautical data link
ADS-B	automatic dependent surveillance broadcast
ADS-C	automatic dependent surveillance-contract
AFSS	automated flight service station
AIM	aeronautical information management
AIXM	aeronautical information exchange mode
ALAR	approach/landing accident reduction
ALDARS	ASOS lightning detection and reporting system
ALSF-2	approach lighting system with sequenced flashing light model 2
ALSIP	approach lighting system improvement program
AMASS	airport movement area safety system
ANICS	Alaskan national airspace system interfacility communications system
ARE	aircraft and related equipment
ARTCC	Air route traffic control center
ARTS	automated radar terminal system
ASAS	aviation safety analysis system
ASDE-3X	airport surface detection equipment – model 3x
ASDE-X	airport surface detection equipment – model x
ASKME	aviation system knowledge management environment
ASOS	automated surface observing system
ASR	airport surveillance radar
ASR-9	airport surveillance radar model 9
ASR-11	airport surveillance radar model 11
ASWON	automated surface weather observation network
ATC	Air traffic control
ATCBI	Air traffic control beacon interrogator
ATCBI-6	Air traffic control beacon interrogator model 6
ATCSCC	Air traffic control system command center
ATCT	airport traffic control tower
ATDP	advanced technology development prototyping
ATM	Air traffic management
ATO	Air Traffic Organization
ATOMS	Air traffic operations management system
ATOP	advanced technologies and oceanic procedures
AUTOMET	automated meteorological
AWOS	automated weather observing system
AWSS	automated weather sensor systems
B	
BLI	budget line item
C	
C3	command, control, and communications
CAEG	computer aided engineering graphics
CAI	contractor acceptance inspection

CAP	common automation platform
CARF	central altitude reservation facility
C-ARTS	common-automated radar tracking system
CASSD	Center Advance Aviation System Development
CAST	commercial aviation safety team
CATMT	collaborative air traffic management technologies
CBI	computer-based instruction
CERAP	center radar approach control
CETS	compliance and enforcement tracking subsystem
ADS-C	automatic dependent surveillance-contract
CFE	communications facilities enhancement
CFIT	controlled flight into terrain
CIP	capital investment plan
CIWS	corridor integrated weather system
CONUS	contiguous United States
COTS	commercial off-the-shelf
CPDSS	covered position decision support system
CSIRC	computer security incident response center
CST	communication support team
D	
DHS	Department of Homeland Security
DME	distance measuring equipment
DoD	Department of Defense
DOT	Department of Transportation
DOTS	dynamic ocean tracking system
DSR	display system replacement
DVOR	Doppler very high frequency omni-directional range
E	
EBUS	enhanced backup surveillance
ECG	En route communication gateway
EFSTS	electronic flight strip system
EOSH	environmental & occupational safety and health
EPA	Environmental Protection Agency
ERAM	En route automation modernization
ERIDS	En route information display
ETVS	enhanced terminal voice switches
F	
F&E	facilities and equipment
FAA	Federal Aviation Administration
FAASAT	FAA telecommunications satellite
FBWTG	FAA bulk weather telecommunications gateway
FDIO	flight data input/output
FDP	Flight data processor
FFP2	free flight phase 2
FFRDC	federally funded research and development center
FIS	flight information service
FIS-B	flight information service – broadcast
FISDL	flight information services data link
FM	frequency modulated
FSAS	flight services automation system
FSRM	facility security risk management
FSS	flight service station
FST	fuel storage tank

FTI	FAA telecommunications infrastructure
FY	fiscal year
G	
GAVF	general aviation/ vertical flight technology
GBAS	ground based augmentation system – wide area augmentation system
GBT	ground based transceivers
GNSS	global navigation satellite system
GPS	global positioning system
GWP	global weather processor
H	
HCS	host computer system
HVAC	heating, ventilating, and air-conditioning
I	
IAPA	Instrument approach procedures automation
ICAO	International Civil Aviation Organization
IDS	Information display system
IFR	Instrument flight rule
ILS	Instrument landing system
IOC	initial operating capability
ISS	information systems security
IT	information technology
ITWS	integrated terminal weather system
J	
JAWS	Juneau airport wind system
JPDO	joint planning and development
JRC	joint resources council
L	
LAAS	local area augmentation system
LAHSO	land and hold short operations
LAN	local area network
LCSS	logistical center support system
LINCS	leased interfacility NAS communications system
LLWAS	low-level wind shear alert system
LPDME	low power distance measuring equipment
LRR	long-range radar
LSS	logistics support services
LSSC	logistics support services center
M	
MALS	medium-intensity approach lighting system
MALSR	medium-intensity approach light system with runway alignment indicator lights
MDCRS	meteorological data collection and reporting system
MEARTS	microprocessor en route automated radar tracking system
MIAWS	medium intensity airport weather system
MOA	memorandum of agreement
MOPS	Minimum operational performance standard
N	
NAFIS	next generation flight inspection system
NAIMES	national airspace system aeronautical information management enterprise system
NAR	national airspace redesign
NAS	national airspace system
NASA	national aeronautics and space administration
NASR	national airspace system resources

NDB	non-directional beacon
NDP	NOTAM distribution program
NEXCOM	next generation air/ground communications
NEXRAD	next generation weather radar
NGATS	next generation air traffic system
NIMS	national airspace system infrastructure management system
NISC	national airspace system implementation support contract
NOTAM	notice to airmen
NTSB	National Transportation Safety Board
NVS	national airspace system voice switch
NWS	National Weather Service
O	
OASIS	operational and supportability implementation
OEP	operational evolution plan
OFDPS	offshore flight data processing system
OMB	Office of Management and Budget
ORD	operational readiness demonstration
OSHA	Occupational Safety and Health Administration
P	
P3I	pre-planed product improvement
PAPI	Precision approach path indicator
PCB	polychlorinated biphenyl
PCS	Permanent change of station
PDARS	performance data analysis and reporting system
PIREPS	pilot reports
PLM	programming language for microcomputers
PRM	Precision runway monitor
PS3	power systems sustained support
R	
RATP	route availability planning tool
RCAG	remote center air/ground
RCE	radio control equipment
RCISS	Regulation and certification infrastructure for system safety
RCOM	recovery communications
RDA	radar data acquisition
RDP	radar data processing
REIL	runway end identifier lights
RFI	radio frequency interference
RIRP	runway incursion reduction program
RMMS	remote maintenance monitoring system
RNAV	area navigation
RNP	required navigation performance
RTP	resource tracking program
RVR	runway visual range
RWSL	runway status lights
S	
SASO	system approach for safety oversight
SAWS	standalone weather sensors
SBAS	space based augmentation system – local area augmentation system
SETA	system engineering and technical assistance.
SF-21	safe flight 21
SLEP	service life extension program
SMO	system maintenance office

SMP	strategic management process
SMS	surface management system
SNI	simultaneous non-interface
STAR	standard terminal arrival routes
STARS	standard terminal automation replacement system
STMS	surface traffic management system
SWIM	system-wide information management
T	
TACAN	tactical air navigation antenna
TAMDAR	tropospheric airborne meteorological data reporting
TAMR	terminal automation modernization replacement
TCWF	terminal convective weather forecast
TDWR	terminal Doppler weather radar
TFM	traffic flow management
TFM-M	traffic flow management modernization
TFR	temporary flight restriction
TIS	traffic information service
TMA	traffic management advisor
TMA-SC	traffic management advisor - single center
TRACON	terminal radar approach control
TSSC	technical support services contract
TVSR	terminal voice switch replacement
TWIP	terminal weather information for pilots
U	
UAT	universal access transceiver
UHF	ultra high frequency
URET	user request evaluation tool
V	
VASI	visual approach slope indicator
VHF	very high frequency
VOR	very high frequency omni-directional range
VORTAC	very high frequency omni-directional range collocated with tactical air navigation
VSCS	voice switching and control system
W	
WAAS	wide area augmentation system
WARP	weather and radar processor
WJHTC	William J. Hughes Technical Center
WMSCR	weather message switching center replacement
WMSS	WARP maintenance and sustainment service
WRC	world radiocommunication conference
WSP	weather systems processor