



Federal Aviation  
Administration

# AVS Work Plan for NextGen 2010





## From the Associate Administrator for Aviation Safety

March 2010



Dear Members of the Aviation Safety Community:

The Next Generation Air Transportation System era is upon us and, in many ways, the hard work has just begun. With this agency, this industry, and this country now firmly committed to this path, it's time to work together to maintain the NextGen momentum achieved over the past year and to carry the transformation of the national airspace system to new heights in the upcoming years.

NextGen is a clear priority for President Obama, the Secretary of Transportation and our administration. Through the RTCA's *NextGen Mid-Term Implementation Task Force*, the aviation community made recommendations to speed the delivery of benefits to the traveling public. The FAA embraced these recommendations and through the NextGen Implementation Plan, existing programs and systems were refined and enhanced.

Aviation Safety (AVS) plays an integral role in NextGen, by setting, overseeing, and enforcing safety standards for all parts of the aviation industry. AVS employees must establish the standards and policies for NextGen operations, certify compliance with those standards, and assure continued operational safety once we adopt new aircraft technologies and change procedures for flight crews and controllers. Under the AVS umbrella, three primary organizations are leading the charge for executing the NextGen Implementation Plan: the Flight Standards Service, the Aircraft Certification Service, and the Air Traffic Safety Oversight Service.

The FAA will not accomplish its NextGen goals unless the AVS workforce is ready to play its part. That is why we have developed this Work Plan, which shows what we need to do, by when, and how we are going to meet that challenge. The work ahead of us will be challenging, but gratifying, and I look forward to the NextGen world ahead!

A handwritten signature in black ink that reads "Margaret Gilligan". The signature is written in a cursive, flowing style.

Margaret Gilligan  
Associate Administrator for Aviation Safety



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## Acronyms

|                  |   |
|------------------|---|
| <b>ACO</b>       | Aircraft Certification Office                     |
| <b>ACOLT</b>     | Aircraft Certification Office Leadership Team     |
| <b>ADS-B</b>     | Automatic Dependent Surveillance – Broadcast      |
| <b>ASIAS</b>     | Aviation Safety Information Analysis and Sharing  |
| <b>ATC</b>       | Air Traffic Control                               |
| <b>ATN</b>       | Aeronautical Telecommunication Network            |
| <b>ATO</b>       | Air Traffic Organization                          |
| <b>CANSO</b>     | Civil Air Navigation Service Organization         |
| <b>CATMT</b>     | Collaborative Air Traffic Management Technologies |
| <b>CDTI</b>      | Cockpit Display of Traffic Information            |
| <b>EA</b>        | Enterprise Architecture                           |
| <b>EAB</b>       | Enterprise Architecture Board                     |
| <b>EASA</b>      | European Aviation Safety Agency                   |
| <b>EFVS</b>      | Enhanced Flight Vision System                     |
| <b>FANS</b>      | Future Air Navigation System                      |
| <b>GBAS</b>      | Ground Based Augmentation System                  |
| <b>GLS</b>       | (Ground Based Augmentation System) Landing System |
| <b>ICAO</b>      | International Civil Aviation Organization         |
| <b>IMC</b>       | Instrument Meteorological Conditions              |
| <b>JPDO</b>      | Joint Planning and Development Organization       |
| <b>JPE</b>       | Joint Planning Environment                        |
| <b>JRC</b>       | Joint Resources Council                           |
| <b>LOB</b>       | Line of Business (AVS, for example)               |
| <b>NAS</b>       | National Airspace System                          |
| <b>NGI&amp;I</b> | NextGen Integration & Implementation Office       |
| <b>NGIP</b>      | NextGen Implementation Plan                       |
| <b>NGPT</b>      | NextGen Policy Team                               |
| <b>NMB</b>       | NextGen Management Board                          |
| <b>NRB</b>       | NextGen Review Board                              |
| <b>OI</b>        | Operational Improvement                           |
| <b>OPR</b>       | Office of Primary Responsibility                  |
| <b>OTA</b>       | Other Transaction Authority                       |
| <b>PBN</b>       | Performance Based Navigation                      |
| <b>RNAV</b>      | Area Navigation                                   |
| <b>RNP</b>       | Required Navigation Performance                   |
| <b>SMS</b>       | Safety Management System                          |
| <b>SMT</b>       | Standards Management Team                         |
| <b>SRMD</b>      | Safety Risk Management Document                   |
| <b>SWIM</b>      | System Wide Information Management                |
| <b>TCAS</b>      | Traffic Alerting and Collision Avoidance System   |
| <b>TLS</b>       | Target Level of Safety                            |
| <b>UAS</b>       | Unmanned Aircraft System                          |
| <b>VDL</b>       | (Very High Frequency) Data Link                   |
| <b>VMC</b>       | Visual Meteorological Conditions                  |
| <b>WAAS</b>      | Wide Area Augmentation System                     |



## SECTION 1 Introduction

The Next Generation Air Transportation System, better known as NextGen, represents the most significant overhaul of the National Airspace System (NAS) in our history. Aviation Safety (AVS) contributions are vital to the successful implementation of NextGen because efficiency and capacity benefits will not occur without the successful integration of new technologies into the existing operational structure. Safety, aircraft centric operations, and aircraft equipage are keys to NextGen's success.

Our primary objective is to improve aircraft and operator safety standards. As the economy recovers, we must be ready for increased operations without compromising safety. Aircraft centric operations revolve around the idea of relying on autonomous aircraft movements, interconnected with other aircraft, less reliant on external control. It capitalizes on capabilities of the aircrew and aircraft to execute efficiencies of traffic flow and safety. Existing aircraft capabilities can provide incremental safety and capacity benefits. Performance based operations provide flexibility for technology evolution, specifying required performance rather than simply citing a current solution. Required Navigation Performance (RNP) procedures are an example of performance based operations. Defining the performance characteristics of Automatic Dependent Surveillance – Broadcast (ADS-B) is another.

This AVS Work Plan for NextGen provides an overall perspective of FAA NextGen planning activities, focusing on AVS-specific responsibilities and deliverables. This work plan:

- Explains how AVS is organizing for NextGen
- Charts a course for AVS involvement during a period of significant change
- Lays out major deliverables AVS will contribute toward the successful implementation of NextGen

## **A. What is NextGen?**

The Next Generation Air Transportation System is a collection of programs and initiatives to improve the capacity, efficiency, safety, security, and environmental impact of aviation in the United States. Some of the programs and initiatives are mature: the Wide Area Augmentation System (WAAS) is a multi-billion dollar program used by tens of thousands of aircraft, supporting approaches with vertical guidance at over 1000 airports. Other initiatives are still in the research phase, such as conducting parallel approach operations to closely spaced runways. Closely spaced parallel operations will allow some airports to make better use of existing runway configurations and have greater design flexibility as they plan for new runways. As FAA employees and industry experts continue to develop new ideas, and we learn from our successes and failures along the way, new initiatives will be included in the NextGen work plan.

NextGen is unique in its management and execution, with an unprecedented degree of integration across the FAA and cooperation with industry. It represents a large investment for both government and industry and demands thorough planning to gain efficiencies.

## **B. Modernization Is A Complex Effort**

We must recognize that NextGen capabilities do not happen instantaneously. Before the FAA can deliver each new capability to achieve a NextGen objective, multiple activities must occur, such as:

- Identifying, developing and installing needed infrastructure and software;
- Developing new aircraft equipment performance standards and installation guidance;
- Testing to determine how the capability affects pilot and controller workload;
- Evaluating and mitigating risks through safety assessments; and
- Training aviation safety inspectors, operators, and controllers on how to use new capabilities.

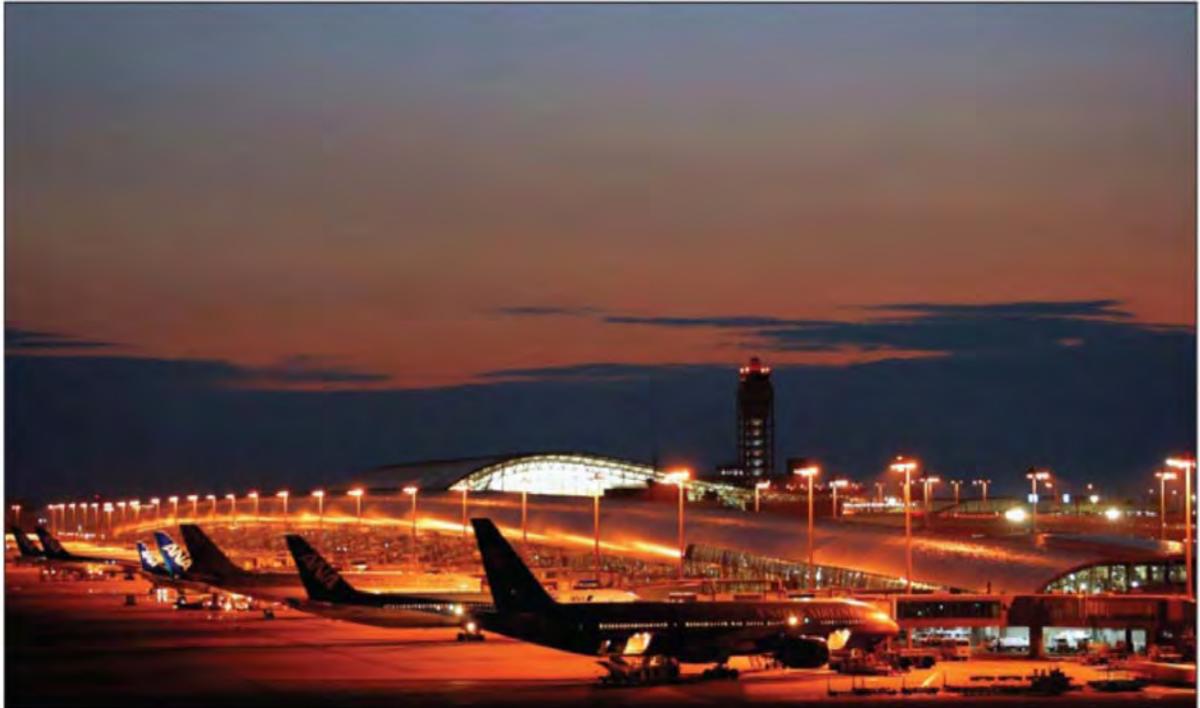
The development of NextGen capabilities does not occur in a vacuum. The FAA lead for NextGen is the Air Traffic Organization (ATO) Senior Vice President for NextGen and Operations Planning. AVS works with the ATO and other lines of business in order to align all organizations in the FAA. Throughout this process, the FAA collaborates with aviation community stakeholders, including operators, equipment manufacturers, academia, and other federal agencies.

Effective NextGen implementation requires a coordinated cross-agency effort. The FAA's office of NextGen Integration and Implementation (AJP-A) developed a portfolio approach to track, plan, report and execute this large-scale integration project. This includes an enterprise-wide emphasis on risk-mitigation solutions and balance between ground-based and airborne systems. The portfolio consists of solution sets (listed in Section 2, Figure 1) focusing on a series of related operational capabilities.

### **C. A Global Strategy Is Essential**

The FAA works to ensure international harmonization of NextGen technology, procedures and standards through continuing collaboration with international aviation organizations. These include the International Civil Aviation Organization (ICAO), other civil aviation authorities (CAAs), the Civil Air Navigation Services Organization (CANSO), and the European Commission.

Harmonized global operations improve safety by minimizing the risks of operational errors, and reducing costs to manufacturers and operators through common solutions. It is essential that AVS activities for NextGen continually strive to deliver globally accepted standards, criteria, and operational procedures.







## SECTION 2 Overview of Planning Activities

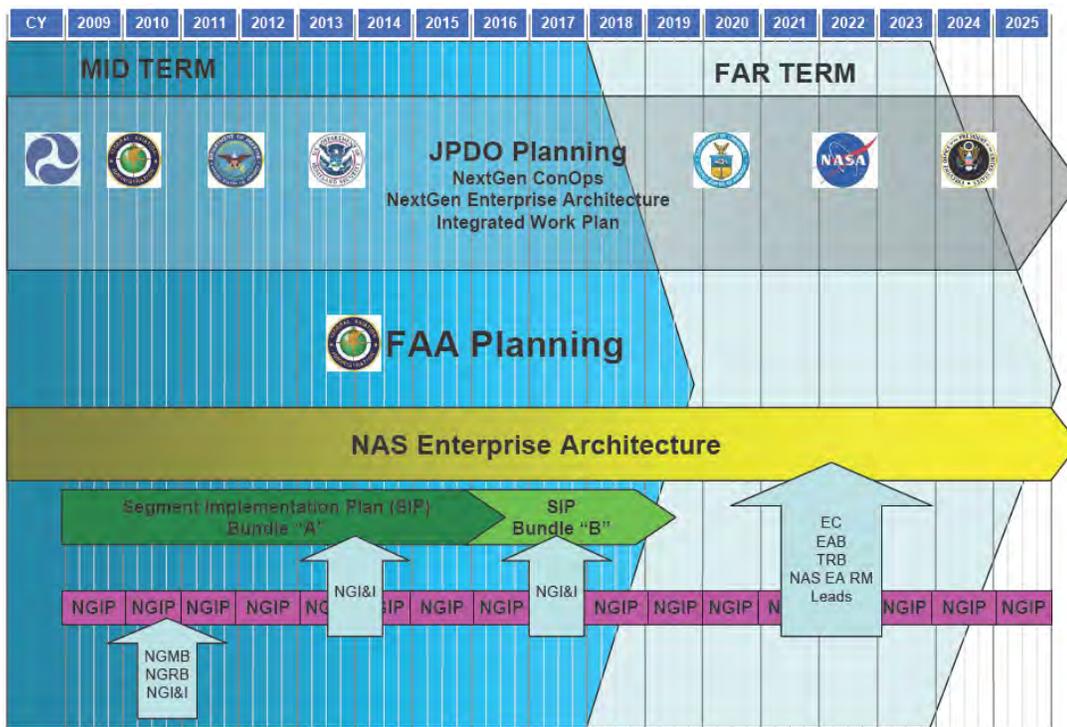
NextGen is a massive and complex undertaking which reaches beyond the FAA and the Department of Transportation. It is a combination of many initiatives, in different phases of maturity and adoption. Seven solution sets support the eight portfolios (see Figure 1 and Appendix C).



**Figure 1. NextGen Portfolio Approach**

Several key planning documents provide overall structure. The Joint Planning and Development Organization (JPDO) is the lead inter-agency coordinating body to ensure

NextGen’s seven participating government agencies and offices<sup>1</sup> perform in a coordinated and complementary manner. JPDO has responsibility to develop the overall vision and plan, focused on the far-term. The FAA has responsibility for planning and implementing the majority of NextGen’s near-term (current through 2012) and mid-term (2012 through 2018) goals. The FAA uses several planning doctrines, described below, to provide the framework for all FAA NextGen activities. Figure 2 shows the overview of planning activities.



**Figure 2. NextGen Planning Overview**

**A. Plans**

**JPDO Enterprise Architecture**

The JPDO Enterprise Architecture (EA), commonly referred to as the “blueprint” for NextGen, is a technical document of more than 600 pages describing the segments, capabilities, operational activities, and identified relationships to the key target components of NextGen in the year 2025. The EA defines how these capabilities fit together and serves as a tool for planning, negotiating and understanding the dynamic, interrelated business processes and technical solutions affecting the aviation community. The key difference between the JPDO Enterprise Architecture and the FAA’s NAS Enterprise Architecture is the JPDO Enterprise Architecture has a broader scope and looks at the entire air transportation system. The JPDO EA describes operations and systems beyond the responsibilities of the FAA. For further JPDO Enterprise

<sup>1</sup> Department of Transportation, Federal Aviation Administration, Department of Defense, Department of Homeland Security, Department of Commerce, NASA, and the White House Office of Science and Technology

Architecture information, refer to the Joint Planning Environment (JPE) website at <http://jpe.jpdo.gov/ee/> .

### **JPDO Integrated Work Plan**

The Integrated Work Plan (IWP) provides a tool to support the collaborative planning and deliberation needed among partners and stakeholders to prioritize needs, establish commitments, coordinate efforts, and focus resources on the work needed to achieve NextGen. The IWP provides comprehensive information about the elemental operational improvements, enablers, development and research milestones, and policies, which define the overall NextGen plan. The IWP facilitates coordination with government and industry partners as they implement NextGen. For further IWP information, refer to the JPE website.

### **NAS Enterprise Architecture**

The National Airspace System (NAS) Enterprise Architecture (EA) establishes the foundation to model NAS evolution. The structure and discipline of ongoing NAS EA efforts aims to provide accurate and concise architecture information for NAS enterprise-level decision making. The NAS EA includes a comprehensive set of Operational Improvements (OIs), which are the specific operational changes that will deliver benefits under NextGen. The NAS EA also includes different ways to view the FAA's plans, through operational depictions and technology roadmaps. The Aircraft Roadmap is one aspect of the NAS EA of particular interest to AVS since it concerns needed aircraft capabilities. The NAS EA is an on-line database of information, available at <http://nasea.faa.gov> .

The FAA updates the NAS EA annually in December. Aspects of the EA are approved by the Joint Resources Council, notably program funding (for baseline programs), and identification of key decision points.

### **NextGen Implementation Plan**

The NextGen Implementation Plan (NGIP) provides an overview of the FAA's ongoing transition to NextGen. This plan typically addresses results of the previous year's activities as well as FAA commitments now and into the mid-term (defined as 2012-2018). The NextGen Integration and Implementation (I&I) Office (AJP-A) is the lead office for this document, released annually at the beginning of the year. In addition to the NGIP, the FAA response to the RTCA Mid-Term Implementation Task Force is on the FAA's NextGen website: <http://www.faa.gov/nextgen> .

Within the NextGen Implementation Plan, air traffic initiatives are in seven solution sets, in which the Operational Improvements reside. Appendix C defines the following solution sets.

- Initiate Trajectory-Based Operations (TBO)

- Increase Arrivals/Departures at High Density Airports
- Increase Flexibility in the Terminal Environment
- Improve Collaborative Air Traffic Management
- Reduce Weather Impact
- Improve Safety, Security and Environmental Performance
- Transform Facilities

## **B. Planning Organizations**

Since the implementation of NextGen involves organizations all across the FAA, understanding how all these organization relate to each other is essential. The following paragraphs explain how FAA organizations fit into the NextGen managing structure (see Figure 3).

### **NextGen Management Board**

The NextGen Management Board, chaired by the FAA's Deputy Administrator, takes an enterprise approach to developing and executing the FAA's NextGen plan. With representatives from all key agency lines of business, the Board has the authority to force timely resolution of emerging NextGen implementation issues. The Board's focus includes:

- Measuring deployment progress and key activities
- Ensuring essential resources are available, including reprioritizing resources as necessary
- Issuing policy and guidance
- Identifying leaders that are accountable for delivering system changes

Additionally, the NextGen Management Board manages a number of cross-agency issues, including accommodating aircraft at various levels of equipage during the mid-term, increasing capacity on closely spaced parallel runways, accommodating the addition of hundreds of new FAA employees, managing environmental challenges, pursuing a global strategy, and maintaining the integrity of information shared through NextGen systems.

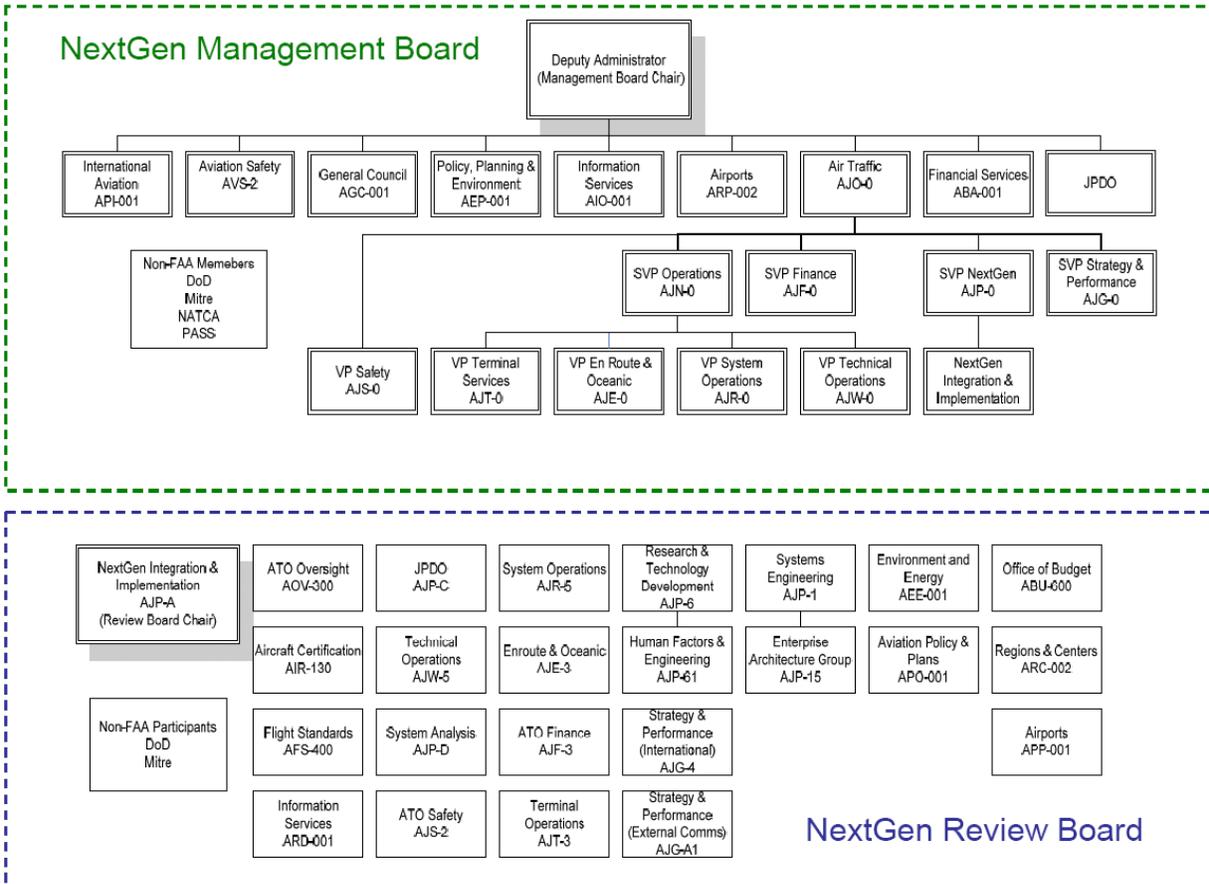
The Deputy Associate Administrator for Aviation Safety (John Hickey) represents AVS on the NextGen Management Board.

### **NextGen Review Board**

The NextGen Review Board provides oversight, status, and prioritization of guidance on existing and proposed NextGen initiatives. To facilitate this oversight, the NRB includes members from the various organizations to assist with integration and identification of

required policy changes, and understanding of funding impacts. The NextGen Review Board provides recommendations to the NextGen Management Board.

AVS Participation: AIR (Bruce DeCleene, AIR-130)  
 AFS (Les Smith, AFS-400)  
 AOV (Art Politano, AOV-320)



**Figure 3. FAA NextGen Organization Managing Structure**

### Senior Vice President for NextGen and Operations Planning

The FAA’s Senior Vice President for NextGen and Operations Planning has primary responsibility for the development and execution of the NextGen plan. The Senior Vice President is also responsible for managing FAA’s research and development, Enterprise Architecture, systems engineering, and performance modeling.

### NextGen Integration and Implementation Office

The NextGen Integration and Implementation Office (AJP-A) develops and maintains the NextGen Implementation Plan and NextGen Segment Implementation Plan. This office is deeply involved in NextGen system integration, coordinating obligation of NextGen funds, monitoring the progress of NextGen development and implementation, and facilitating key collaboration processes.

AVS Participation:

Aircraft and Operator Solution Set Coordinator (Lou Volchansky, AIR-130)

Safety Integration Team Lead (Mark Liptak, AVP-200)

### NAS Enterprise Architecture Board

The NAS Enterprise Architecture Board develops and maintains the FAA's architecture, which describes the structure of how all of the FAA's systems are inter-related. It also describes how future FAA systems integrate into a single coherent enterprise. AVS participates in this group, representing the aircraft and aircraft related activities in the Enterprise Architecture's various system views.

AVS Participation: Aircraft Roadmap Lead (Steve Van Trees, AIR-130)

### Joint Planning and Development Office

Joint Planning and Development Office (JPDO), whose focus remains on the long-term NextGen vision (2018-2025), ensures FAA's alignment with partner government agencies and other stakeholders that contribute to the overall NextGen effort. Other JPDO member organizations include the departments of Defense, Homeland Security, and Commerce, as well as NASA and the White House Office of Science and Technology Policy.

Under the JPDO (see Figure 4), working groups were established as joint industry-government bodies exploring NextGen-related issues and building industry-government consensus around possible solutions. The current working groups are Aircraft, Air Navigation Services, Airports, Safety, Environment, Weather, Net-Centric, Security, and Global Harmonization. AVS provides the government co-chair to the Aircraft and Safety Working groups (see arrow).

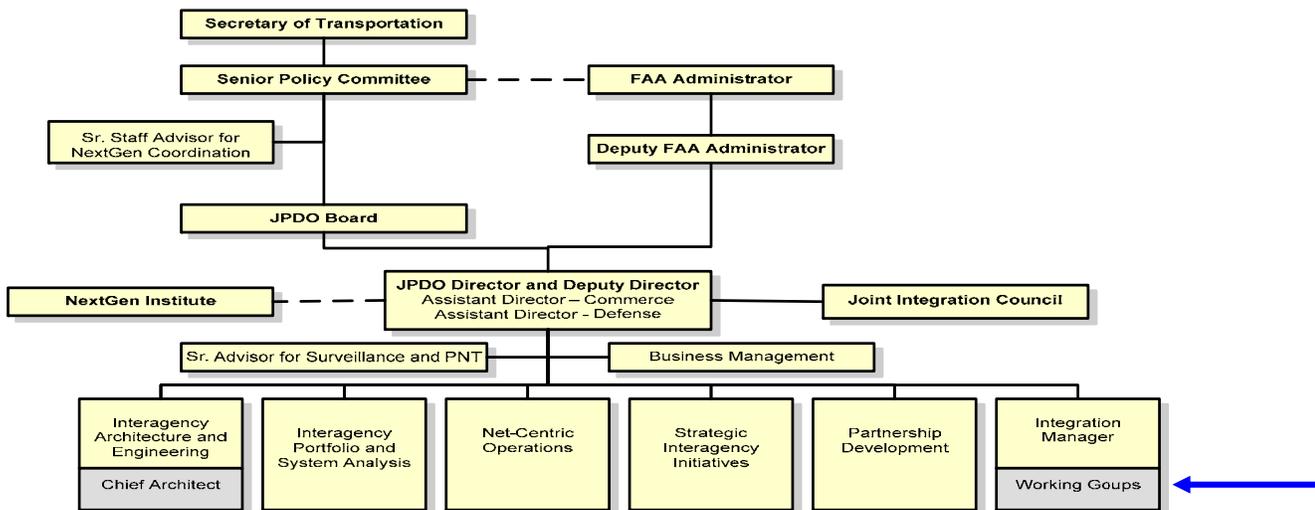


Figure 4. JPDO Organization Chart

AVS Participation within JPDO working groups:

Aircraft Working Group: Co-Chair (Steve Van Trees, AIR-130)

Member (Trent Prange, AIR-130)

Member (Hank Cabler, AFS-430)

Member (Art Politano, AOV-320)

Safety Working Group: Co-Chair (Jay Pardee, AVP-1)

Member (Warren Randolph, AVP-220)

Member (Frank Stadmeier, AVP-200)

Member (Scott VanBuren, AVP)

Member (Ann Azevedo, AIR-100)

Member (Don Arendt, AFS-900)

Member (Andy Muir, AFS-20)

Member (Charles Huber, ANM-100)

Member (Sherry Borener, AVP-220)

Member (Steve Van Trees, AIR-130)

Member (Mark Liptak, AVP-200)

Air Navigation Services Working Group:

Member (Trent Prange, AIR-130)

Global Harmonization Working Group:

Member (Hank Cabler AFS-430)

Weather Working Group, Weather Policy Team, 4-D Cube Definition:

Member (Jim Sheets, AFS-400/SAIC)





## SECTION 3

# AVS Roles and Responsibilities for NextGen

### A. Service and Office Roles and Responsibilities

NextGen involves implementation of new complex systems and flight crew procedures. Our safety mission dictates we ensure those systems are reliable and safe, even when they fail, and that we address the operational aspects of these systems. Our certification and operational approval processes provide the tools to address flight crew procedures, maintenance procedures, training development, and continuous safety monitoring.

Modifications to aircraft, including installation or upgrades to aircraft avionics, are approved through the certification process as defined in Title 14 of the U.S. Code of Federal Regulations (14 CFR) Part 21. The use of specific navigation, surveillance, and communication equipment for a particular operation typically requires operational approval for air carriers and air taxi operators. It can require operational approval for general aviation if there are unique training or qualification requirements warranting additional FAA oversight. An overview of service responsibilities follows, as they apply to NextGen.

#### **AFS Roles and Responsibilities**

The Flight Standards Service (AFS) supports NextGen implementation through aviation safety standards and oversight of the aircraft operators. AFS promotes the safety of flight of civil aircraft by establishing regulations and standards for the operator and airmen. AFS accomplishes certification, inspection, surveillance, investigation and enforcement activities related to operators and airmen.

The operational approval for a commercial operator includes:

- Approval of flight crew procedures
- Approval of maintenance procedures
- Approval of training programs

For general aviation operations, AFS provides standards, guidance, and recommended practices and procedures for the installation of equipment and conducting flight

operations. A unique operational approval is only required for operations where the complexity of the operation, or the level of risk associated with conducting the operation, warrants unique FAA oversight.

With respect to NextGen, the operational approval focuses on all of the above areas and considers the ability of the aircraft to support the operation (aircraft qualification). Due to both the unique technologies and the new operations, flight crew and maintenance training and procedures require particular emphasis.

When a specific approval is required, it is reflected in Operating Specifications (Ops Specs), Management Specifications (MSpecs for part 91 subpart K), and Letters of Authorization (LOA for part 91). The approval identifies the operation, the aircraft, and any unique requirements or limitations.

An example is the approval of an operator to conduct Required Navigation Performance – Authorization Required (RNP AR) approach operations.

### **AIR Roles and Responsibilities**

The Aircraft Certification Service (AIR) supports NextGen through administering safety standards governing the design, production, and airworthiness of civil aeronautical products. AIR promotes the safety of flight of civil aircraft by establishing regulations and standards for aircraft, engines, and enabling avionics.

Aircraft certification includes:

- Developing avionics equipment performance standards and installation guidance
- Overseeing design, production, and airworthiness certification programs to ensure compliance with prescribed safety standards
- Working with aviation authorities, manufacturers, and other stakeholders to help them successfully improve the safety of the international air transportation system.

With respect to NextGen, the aircraft certification evaluation process considers the design of the system, potential failure conditions and crew interface issues, to ensure the equipment can support its intended function, and if it fails, it fails in a safe manner.

The Type Certificate or Supplemental Type Certificate reflects approval of installed equipment. A Technical Standard Order (TSO) authorization reflects approval of avionics (prior to installation). Both processes are in accordance with procedures defined in 14 CFR Part 21.

Examples of certification include approval of a Boeing 737 aircraft with RNP capability, or approval of Garmin to produce WAAS navigation equipment for sale for subsequent installation on aircraft.

## **AOV Roles and Responsibilities**

The Air Traffic Safety Oversight Service (AOV) supports NextGen implementation by providing regulatory safety oversight of the FAA's Air Traffic Organization (ATO). AOV accomplishes this task through certification, inspection, surveillance, and compliance actions related to ATO operations. AOV assures changes to the National Airspace System (NAS), whether by new equipment, modifications to existing equipment or procedural changes, perform in a manner to preserve or enhance operational safety of the NAS.

AOV does this by:

- Approving the Air Traffic Organization's Safety Management Manual and any changes to it
- Continuously monitoring ATO's compliance with the safety standards related to acquiring and implementing new systems
- Approving key actions prior to implementation by the ATO, such as: (1) Controls to mitigate or eliminate initial or current high-risk hazards which may be introduced by changes to the NAS, (2) Changes to orders or other instruments that affect separation minima, and (3) NAS equipment availability

Any new NextGen initiative will require certification of new equipment and requisite standards development. Once new equipment is certified and new standards are developed, the NextGen initiative must integrate safely into air traffic control operations. By coordinating safety requirements for NextGen initiatives with AIR and AFS, AOV minimizes potential operational disruptions.

AOV oversight of ATO NAS changes is evolving from reactive oversight to proactive oversight. The complexity of NextGen demands safety risk management oversight, and involvement early in the development process to promote seamless integration into the existing NAS. Through early, proactive engagement and mitigation of potential safety concerns, AOV seeks to avoid last minute non-approvals or non-acceptance actions.

## **Accident Investigation and Prevention (AVP)**

The Office of Accident Investigation and Prevention coordinates the FAA Safety Management System, the backbone of proactive risk management and successful transition to NextGen. AVP establishes an integrated approach to system safety management, one that will provide a strategy for building increased safety into the air transportation system. AVP supports the FAA as it develops and implements NextGen and manages the safe transition from the current NAS. During NextGen implementation, AVP will evolve and define its emerging analytical requirements through a series of activities that include research, analysis, demonstrations, and acquisition. AVP will define the evolving role of system safety management for improving safety in the current and future NAS. Additionally, AVP will make certain changes introduced with NextGen maintain or enhance safety while delivering capacity and efficiency benefits to the FAA

and stakeholders. In support of NextGen implementation, AVP roles and responsibilities are to:

- Lead and manage the Agency's transformation to a Safety Management System (SMS)
- Define and coordinate the implementation of integrated system safety risk management capabilities, including system safety information sharing and risk modeling
- Manage the transformation process to ensure system safety performance is improved as NextGen increases capacity and efficiency
- Manage the AVS research requirements and budget process to support safety and other NextGen priorities, coordinating NextGen-specific research requirements with the NextGen I&I office for inclusion in the overall NextGen budget.

### **Rulemaking Roles and Responsibilities (ARM)**

The Office of Rulemaking (ARM) manages the Agency's rulemaking process. Through the Rulemaking Management Council, it provides general direction, priority determination and resource allocation to individual rulemaking projects. ARM works with all lines of business within the FAA to facilitate drafting, review, and expeditious processing of rulemaking documents. ARM will provide these rulemaking services to NextGen initiatives.

### **Quality, Integration and Executive Services (AQS)**

The Office of Quality, Integration, and Executive Services (AQS) manages the AVS budget for NextGen in support of the other offices. AQS also provides the information technology for the work force in order to improve our efficiency, and the specific tools that will be identified for NextGen communication, coordination, and training.

### **Aerospace Medicine**

At this time, specific NextGen activities for the Office of Aerospace Medicine are not identified. However, the Civil Aerospace Medical Institute may be involved to support future human factors studies.

## **B. AVS Integration**

Coordination within AVS is essential to effective management and execution of the NextGen initiatives. The specific initiatives within NextGen will continue to evolve, as we learn from research, prototyping and early in-service experiences. The following section describes the AVS management structure, and how NextGen activities are coordinated.

## **AVS Management Team**

The AVS Management Team (AVSMT) provides oversight to all AVS NextGen activities. As the AVS member of the NextGen Management Board, AVS-2 has a critical role in representing the organization on core, and sometimes controversial, issues.

The AVSMT identified AFS-2P as the AVSMT lead for NextGen (John McGraw). In this capacity, AFS-2P is responsible for establishing a coordinated position and recommendation on NextGen-related matters.

The entire AVSMT will receive a NextGen status briefing at least quarterly, focused on strategic issues, objectives and challenges.

AVS-2, AFS-2P, and the Service Management Leads will have a NextGen coordination meeting at least monthly to prepare AVS-2 for NextGen Management Board meetings as required.

## **Service Management Leads**

NextGen has the greatest effect on the AVS Services (AIR, AFS and AOV). They will need to conduct research, develop policy, coordinate approvals and monitor operations. Each Service has identified a management lead for NextGen responsible for monitoring NextGen developments. They represent their organization on the NextGen Review Board, and handle routine NextGen-related issues.

The leads are:

- Aircraft Certification Service: AIR-100 (Bruce DeCleene, AIR-130)
- Flight Standards Service: AFS-400 (Les Smith)
- Air Traffic Safety Oversight Service: AOV-300 (Alex McDowell, AOV-330)

NextGen focal points exist throughout AVS. These focal points are responsible for monitoring NextGen developments and handling routine issues. Due to the lack of direct impact to their business, these offices are not on the NextGen Review Board.

- Office of Rulemaking: ARM-100 (Ida Klepper)
- Office Quality, Integration and Executive Services: AQS-400 (Charles Davis); Communication, AQS-300 (Sheryl Friedman); Training, AQS-500 (Stacy Wells)
- Office of Accident Investigation and Prevention: AVP-220 (Warren Randolph)

## **AVS NextGen Working Group**

To promote coordination and integration of NextGen activities, AVS established the AVS NextGen Working Group to share information and concerns on NextGen initiatives, with

emphasis on the planning, resourcing, and policy. The Aircraft Certification and Flight Standards Service leads co-chair this working group, which also includes the other Service and Office leads, and key AVS representatives to the JPDO, NextGen Integration and Implementation Office, and the Enterprise Architecture Board. This working group, which predominantly consists of headquarters personnel, is responsible for coordinating inputs provided by AVS to ATO in any of the following areas:

- NextGen Implementation Plan
- NextGen Segment Implementation Plan
- Enterprise Architecture
- JPDO Working Groups

This working group meets at least biweekly, and may meet weekly when required.

### **AVS Representation to NextGen Integration and Implementation (I&I) Office**

AVS has provided an Aircraft and Operator Solution Set Coordinator and a Safety Solution Set Coordinator to the NextGen I&I office. The Solution Set Coordinators act as liaisons to facilitate communication, identify and resolve issues, and foster integration across the Agency. The Solution Set Coordinators have a unique role in representing the AVS perspective with the Air Traffic Solution Set Coordinators. We will assess the effectiveness of these position requirements in July 2010, and make a determination whether to continue the positions, increase the number of AVS representatives, or seek an alternative coordination strategy.

### **Coordination between Headquarters and Other AVS Offices**

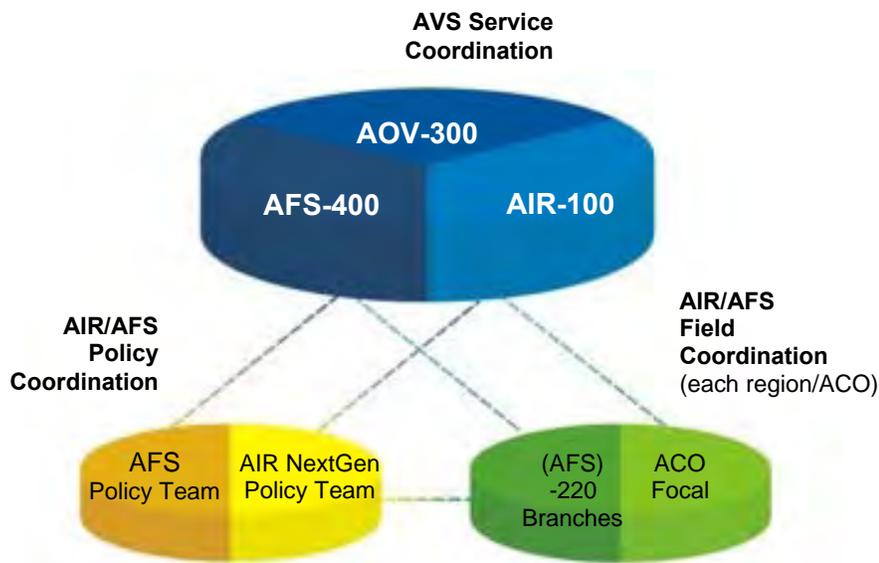
Coordination between AFS, AIR, and AOV in the field is required. Fostered by the close coordination of the headquarters offices the AFS NextGen branches, AIR-130 NextGen focal points, and the AOV-330 NextGen Program will work together on NextGen-related projects and applications (see Figure 5).

AFS has established NextGen Branches in each region, to provide expertise to facilitate approvals of new technologies and operators and ensure standardization and coordination among offices. These NextGen Branches are an efficient way to improve standardization, quality of service, support, and specialized training for NextGen capabilities. AFS also established a policy team consisting of the headquarters divisions to coordinate policy relating to NextGen.

The AIR Standards Management Team has created a NextGen Policy Team to coordinate policy and discussions across Directorates. In addition, Aircraft Certification Offices with significant NextGen-related activity will have NextGen focal points established to work in concert with the AFS NextGen Branches within the same region. The ACO focal points are NextGen specialists residing in ACOs with a large workload related to the airworthiness approval of NextGen technology. The ACO specialists will be knowledgeable in NextGen issues to facilitate approval of new technologies in an

efficient, consistent and standardized manner. The ACO focal points will work with AIR-130 and directorate standards staff in the development of policy for new and novel applications.

AOV provides specialists from its NextGen Program to oversee and support the NextGen Implementation Plan. Through this organization, AVS will provide a leading-edge local presence in each office that is able to monitor NextGen activities in other offices, maintain a rapport with other NextGen specialists and the policy offices, and facilitate flow of information within the organization. This organization will provide a leading-edge local presence in each office to monitor NextGen activities in the region, maintain a rapport with other NextGen specialists and the policy offices, and facilitate flow of information within the Service.



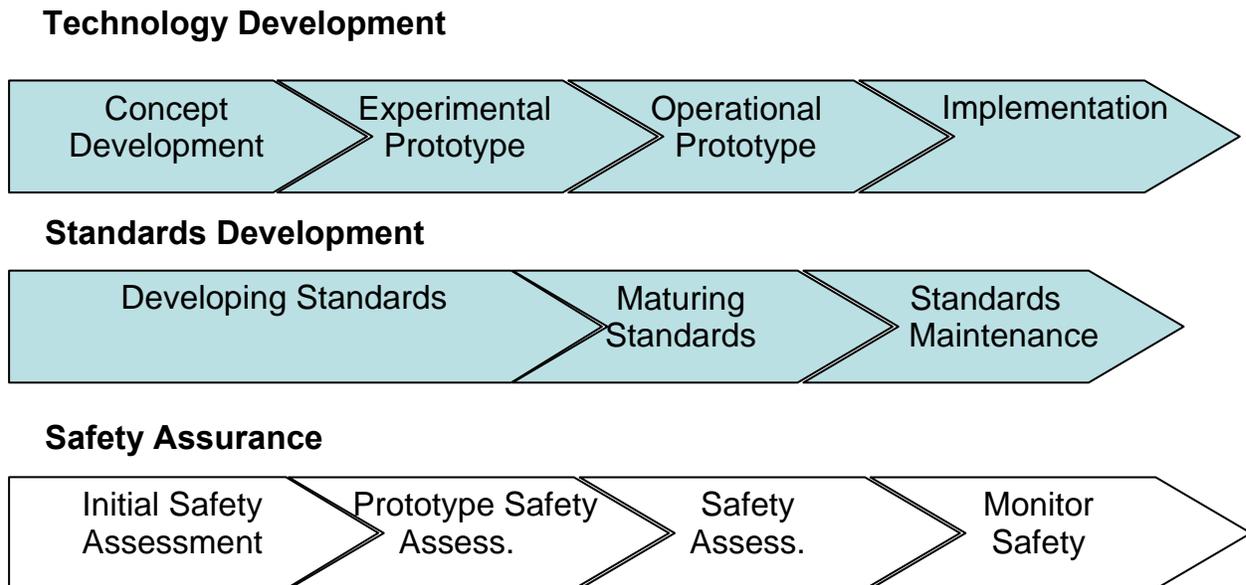
**Figure 5. AVS NextGen Coordination between HQ Offices and Field**

### C. AVS and the NextGen Development Lifecycle

AVS plays an important role in each of the phases of development and implementation for the new NextGen projects. Figure 6 portrays generalized phases for technology development within each project as an initiative matures from an initial concept, through experimental prototyping, operational prototyping and then deployment. However, not all projects go through these stages – a concept may go directly to implementation without an experimental or operational prototype, if the technology and concepts involved are mature.

The figure also shows the primary responsibilities of AVS, in the collaborative development of standards and the oversight of the safety assessment. The figure shows an ideal alignment of the development of standards with the technology itself. The standard should be initiated early in the concept development, with a baseline standard available for use by the operational prototype. If an industry standard is not available in time for an operational prototype, the applicant and the FAA must determine the appropriate requirements to apply to the system to ensure safety and achieve the desired operation.

The third row of the figure illustrates the importance of safety assessment throughout the development lifecycle. Consideration of the safety aspects must be embedded within the initial concept development – otherwise, whole aspects of the technology or operational concept may need revision in order to ensure safety. In addition, the safety assessment must mature as the standards are developed, with a sufficient safety assessment available to enter the operational prototype into service. Typically, the operational prototype is approved with some unique operational limitations to address potential deficiencies in the requirements, until the requirements can be validated. The mature standards are aligned with a mature safety assessment, after which the initiative must be monitored in service to ensure that any assumptions or analysis is valid, and to identify any unanticipated risks.



**Figure 6. AVS Key Activities and the Development Lifecycle**

The demand for AVS resources, on a per-application basis, peaks throughout the operational prototype stage. This stage is where the initial standards and corresponding safety assessments must be accepted, and where it is crucial to mature the standards and concepts leading to a final standard.

The demand for AVS resources, as applied to an entire initiative, peaks in the implementation phase as many applicants seek approvals and the scope of monitoring for safety continues to expand. The required resources for the implementation phase can be reduced by ensuring that the standards are robust and simple. In general, NextGen standards will be developed as performance-based standards when possible, due to the flexibility in implementation that they accommodate. However, this flexibility increases the workload for implementation, as the AVS workforce must be prepared to provide oversight of the technological and operational variations engendered by that flexibility. This is an important consideration when standards are developed.







## SECTION 4

# Overview of AVS NextGen Activities

This section provides an overview of AVS activity in support of NextGen, recognizes our safety oversight mission, and discusses our three core businesses: developing of standards, managing approval processes and procedures, and overseeing continuous operational safety.

### A. Developing Standards

To achieve NextGen goals, we must develop appropriate guidance for the new technologies and operations. By reviewing the overall plans for NextGen, we have identified those aircraft capabilities that are required to enable new capabilities. The aircraft enablers generally fall into three categories of communication, navigation and surveillance. Each aircraft enabler offers some benefits when taken individually, but achieves the greatest benefits when integrated together. For example, area navigation (RNAV) procedures provide new arrival and departure routes, and become more effective with performance-based Air Traffic Management capabilities such as time-based metering and the adoption of ATC digital communication that can dynamically define those procedures.

Another example of an integrated initiative is the development of standards supporting closely spaced parallel operations (CSPO). It is increasingly difficult for airports to expand by building new runways at current separations standards. The FAA is conducting studies and research on simultaneous independent approaches to parallel runways to investigate potential reductions of runway separation standards. Currently, 231 U.S. airports have at least one set of runways with centerlines separated by at least 3000 feet but less than 4300 feet. CSPO may be feasible at some of these airports. By completing the standards and obtaining agreement with the operators on a timeframe for their equipage, airports will likely be able to increase capacity and have greater design flexibility as they plan for new runways.

Table 1 lists the new aircraft enablers and the corresponding AVS plans for key standards and criteria. A description of these aircraft enablers is in the FAA NextGen Implementation Plan, Appendix A.

| <b>Plan for New Aircraft Capability Guidance</b>   |                                       |                 |  |
|--|---------------------------------------|-----------------|--|
| <b>Avionics Enablers</b>                           | <b>Aircraft and Operator Guidance</b> |                 | <b>Aircraft Implications</b>   |
|  | <b>Guidance</b>                       | <b>Schedule</b> |  |
| Data Communications (FANS 1/A+, ATN)               | AC 20-140A, AC 120-70B                | 2010            | Identifies equipage standards for all current ATS data comm operations                                     |
| Airborne-CDTI (ADS-B In)                           | AC, TSO                               | 2010            | Displays surrounding air traffic data as well as other airspace information                                |
| EFVS   | AC                                    | 2010            | Sensors provide enhanced views of the runway environment   |
| Ground-CDTI (ADS-B In)                             | AC, TSO                               | 2010            | Enhanced surface situational awareness by the display of ADS-B data  |
| Surface Indications/Alerts (ADS-B In)              | AC, TSO                               | 2012            | Displays and provides alerts based on non-normal traffic status  |
| Along Track Guidance/ITP (ADS-B In)                | AC, TSO                               | 2012            | Display of along-track guidance, control and indications, and alerts                                       |
| GLS III  | Project specific policy               | 2012            | GBAS Landing System (CAT III)  |
| Data Communications (ATN)                          | AC 20-140B, AC 120-70C                | 2012, 2013      | Based on SC-214  |
| Airborne-CDTI with Conflict Detection (ADS-B In)   | AC, TSO                               | 2014            | Displays and alerts crew to airborne conflicts independent of TCAS alerting                                |
| De-confliction Guidance (ADS-B In)                 | AC, TSO                               | 2014            | Guidance information ensures aircraft remains well clear of other aircraft                                 |
| Parallel Approach Guidance and Alerting (ADS-B In) | AC, TSO                               | 2014            | Guidance information for aircraft participating in dependent or independent approaches (still in research) |

**Table 1. Plan for Aircraft Capability Guidance**

## **B. Managing Approval Processes and Procedures**

NextGen involves unprecedented changes to the National Airspace System. We must work together with industry, air traffic, and airports to ensure safety is not compromised. Some NextGen initiatives provide a direct safety improvement, such as a Required Navigation Performance (RNP) procedure providing a guided, stabilized approach to IFR runways. Surface moving maps have the potential to reduce the risks of runway incursions, and enhanced vision systems can greatly improve the pilot's situation awareness in a variety of conditions. For all of the initiatives, we must ensure new systems are reliable and safe, even when they fail, and ensure we address the operational aspects.

Industry recently developed recommendations for implementation of NextGen through RTCA's *NextGen Mid-term Implementation Task Force* (sometimes referred to as Task Force 5). While subscribing to our safety objectives, the Task Force challenged the FAA to "identify the operational approval and certification issues that may impede adoption and acceleration of NextGen capabilities and implement timely solutions to these challenges." It identified timely completion of safety oversight as essential, whether it is aircraft certification, operational approval, commissioning a new ground system, or implementing new air traffic procedures. Without a reliable and reasonable schedule for operator approval to begin reaping operational benefits, already daunting investment decisions become impossible.

The FAA agreed with the RTCA Task Force recommendation concerning streamlining the approval process, without compromising safety or oversight. We examined our organization, our resource requirements, our procedures, and our guidance. We also identified ways in which industry can contribute to streamlining approvals. The initiatives we began are described below.

### *Organization*

A recurring theme from AVS employees and the Task Force report is the need for coordination and collaboration throughout a project between the FAA and industry. Each service within AVS identified ways to improve coordination by creating new branches and identifying NextGen focal points. AVS NextGen organization is in section 3 of this work plan.

### *Training and Implementation*

Another critical recommendation concerned training. We will institute a program to provide timely and appropriate training to ensure each inspector, engineer and flight test pilot has the knowledge necessary to execute NextGen approvals. We will also be using the NextGen branches and specialists as regional experts to assist in evaluating applications and overseeing operations. We plan to review our existing distributed learning and centralized courses, revise them as necessary, and develop new and varied forms of instruction. Hands-on experience with new technologies will be incorporated

into a number of these courses. Section 5 of this work plan provides additional information on training the AVS workforce.

#### *Lean Review of Navigation Procedures*

We initiated a review of processes, tools, and procedures related to standards, policies, development, approval, publication, and utilization of instrument flight procedures including conventional and Performance Based Navigation (PBN). A cross-agency team is reviewing the end-to-end process with the objective of creating a “lean” process that provides efficiency and consistency for development and implementation of instrument flight procedures. This team, led by the Senior Vice President for Operations in the Air Traffic Organization and the Deputy Associate Administrator for Aviation Safety, will review the following processes:

- Developing standards and criteria
- Designing a procedure
- Processing a navigation database
- Obtaining SMS and operational approval, and
- Integrating with the airspace and environment

The program plan goal is to begin implementation of the “lean” process recommendations before October 2010.

#### *Streamlining Operational Approvals*

AVS is committed to streamlining operational approval practices and procedures, and to provide transparency to applicants on the status of their applications by implementing a structured reporting process. We plan to develop additional capabilities embedded within our current information technologies (for example, *Web-Based automated Operational Safety System* (WebOPSS)) to also allow greater use of electronic tools for operator applications and approvals and provide enhanced visibility on applications in progress. WebOPSS may also allow applicants to submit bundled applications for different operations electronically.

#### *Aircraft Certification and Alteration*

As indicated by the Task Force, the FAA has already taken significant steps in facilitating review and approvals using Designated Engineering Representatives (DERs) and the adoption of Organization Designation Authorizations (ODAs). Use of an Approved Model List (AML) allowed safe and efficient upgrades of small aircraft. For example, through an AML, tens of thousands of small aircraft are capable of conducting localizer performance with vertical guidance (LPV) approach procedures using the Wide Area Augmentation System.

Further improvements in certification will be possible with industry support. An avionics manufacturer can facilitate approvals by providing comprehensive installation data for its

products. To accomplish this, AIR plans to expand the use of Approved Model Lists to rotorcraft and transport category aircraft to allow the appropriate reuse of compliance data across multiple type designs. AIR also plans on clarifying policy on additional functions included in equipment approved under a Technical Standard Order (TSO), and developing guidance on how to use data developed for a TSO during installation approval.

To ensure we use our resources effectively, we are identifying ways to improve efficiency with the available resources. We will update criteria for assigning projects to recognize that NextGen projects support the public good. AIR will also clarify the difference between major changes in type design, which require approval by the FAA, and minor changes for which several approval methods exist. For minor changes, we are considering clarifying the use of approved and accepted data to give industry flexibility in using DERs to support field approvals.

### *Transformational Program Oversight*

Transformational programs provide key infrastructure needed to achieve NextGen. AOV is designating specific teams to serve as a focal point for each major transformational program. These teams continuously monitor program development throughout the various stages of the Acquisition Management System to assure risk requirement protocols of the ATO's Safety Management System are incorporated early in the process, providing a robust and thorough safety analysis and decision making framework. Examples of this oversight include the approvals of Safety Risk Management Documents (SRMDs) which include mitigations for high risks. AOV recently assessed the ATO's Safety Management System process and approved its use.

AOV's internal restructuring ensures NextGen initiatives receive priority in its yearly work plan. While this reflects a diversion of existing resources from the approved work programs, the commitment to make NextGen a success for AVS is compelling. AVS would like to expand AOV's collaborative efforts, particularly as NextGen grows and accelerates in the coming years.

### *Safety Assessment*

We will evaluate NextGen changes to the National Airspace System in accordance with the ATO safety management system with oversight by AOV. However, not all new systems or changes to the NAS will require the development of a Safety Risk Management Document (SRMD). The FAA may implement new systems that do not have the potential to raise the level of safety risk by filing a Safety Risk Management Decision Memorandum (SRMDM) with ATO's Safety Service, after examining the safety risk and verifying the change does not affect any safety standard. For those changes that warrant a full safety review, AOV will apply criteria commensurate with the risks and mitigations for each specific change.

Early coordination and resolution of issues is critical to reducing risks and delivering new capabilities on schedule and in a safe manner. We are conducting a preliminary safety

assessment on operational initiatives proposed through the JPDO. For those initiatives already captured in the FAA plan, we created, with the ATO, a team of experts responsible for coordinating safety assessments, led by the Safety Solution Set Coordinator. This team will facilitate timely integration and execution of safety assessments.

In addition, we initiated an activity to develop an FAA-wide Integrated Safety Assessment Policy (ISAP). Each organization in the FAA has the responsibility to conduct safety analyses. These analyses sometimes involve crosscutting issues that would benefit from input from other organizations. The FAA SMS Committee is working on a definition of crosscutting issues and is developing procedures promoting intra-organizational cooperation to characterize and manage risk. Through the integrated application of best practices, the team will help reduce the redundancy and gaps in the safety assessment process, thereby improving its efficiency and risk management impact.

The ISAP will:

- Define the criteria of when it is necessary to do integrated assessment to avoid duplication and assure integration across all impacted lines of business;
- Develop how the integration process will work to simplify the process of developing integrated teams; and,
- Establish the final decision process consistent with current functional responsibilities, including recommendations on who has final approval(s) responsibility for project go-ahead.

#### *Streamlining Performance Based Navigation*

The Task Force placed emphasis in the near term on the implementation of Performance Based Navigation (PBN), and provided additional detail on streamlining the approval process for these operations. We have already targeted several specific areas for improvement. First, we worked with the aircraft manufacturers to develop compliance data and recommended operating procedures. This is particularly important since development of initial RNP Authorization Required (AR) operations began *after* the aircraft were already in service (that is, some aspects of the operation were not considered or evaluated when the equipment was originally developed and approved). Second, we identified RNP AR approval consultants, who have the skills and competency to assist operators in developing their operating procedures and training materials. Relatively few organizations, in government and industry, have experience in RNP AR approaches. These consultancies provide an avenue for companies who want to expedite their approvals to gain access to that experience. Third, we learned from experience and are refining our guidance material for operators and our personnel. Finally, we are working with industry to update the criteria used to evaluate applications. We now have several years of experience with RNP AR, and are able to identify certain areas where the initial criteria can be refined to reduce the costs of compliance. For example, we are revising requirements for training and navigation data flyability checks.

## *Promoting International Harmonization and Interoperability*

AVS will continue efforts toward common global standards to improve safety, allow for portability of authorizations, and increase operational efficiencies. In the area of PBN, coordinating bodies include the International Civil Aviation Organization (ICAO) PBN Study Group and the ICAO Global PBN Task Force. Direct coordination with other organizations, such as the European Aviation Safety Agency (EASA), is essential to achieving harmonization for all the new operations and technologies. These efforts must also be well coordinated with industry, to ensure the resulting standards are achievable. Complementing these efforts, we will continue to share our expertise in the area of operational approvals for advanced operations, advocating for harmonized PBN operations approvals.

As the U.S. transitions to SMS, it is critical for the FAA to ensure elements are interoperable with the international community. ICAO requires SMS for the management of safety risk in air operations, maintenance, air traffic services and aerodromes. We expanded these requirements to include flight training, design, and production of aircraft. Furthermore, ICAO published safety management requirements for States for establishing a State Safety Program (SSP) in order to achieve acceptable safety performance in their civil aviation systems. As such, it is beneficial for civil aviation authorities to harmonize their SMS and SSP requirements and implementation activities and collaborate on common topics of interest.

### **C. Overseeing Continuous Operational Safety**

Throughout the transition to NextGen, safety of operations remains our highest priority. NextGen will not replace or otherwise amend the Continuous Operational Safety (COS) programs in place for Aircraft Certification and Flight Standards Services.

NextGen embraces the transition to SMS, including the promotion of aviation safety data collection, analysis and risk based decision-making. SMS proactively seeks to discover safety concerns before accidents and incidents occur. Early discovery should lead to timely mitigation and prevention strategies. In support of SMS functions, the Aviation Safety Information Analysis and Sharing (ASIAS) capability delivers a suite of tools used to share and analyze safety data, turning disparate data into useful system safety knowledge and the identification of hazards. Through required SMS processes, the system safety knowledge will help the FAA and industry partners monitor the effectiveness of implemented system enhancements. Additionally, the knowledge will help aviation decision makers ensure planned operational improvements of capacity, efficiency and environment will not degrade system safety performance.

### **D. Managing Emerging System Risk**

Using known historical causes of events and potential future exposures, the System Safety Assessment (SSA) risk modeling and forecasting capability identifies potential

risk issues and provides an estimate of the magnitude of future risks due to system changes compared to a forecast risk baseline. Data gathering and analysis provide fundamental information for developing risk baselines and constructing models to assess emerging risks. The construction of relevant metrics and ongoing measurement processes is crucial in understanding operational concerns and identifying emerging risks. Process analysis and developing metrics that link those processes to desired outcomes is another important element in analyzing safety in the aviation system. A focus on process has long been an important element of the FAA's safety oversight for airlines and aircraft manufacturers. With the implementation of the safety management system concept, the oversight mechanism will evolve to emphasize pro-active risk identification and reduction. As the FAA implements SMS, the role of process analysis and developing measurements that track desired outcomes will become more important.





## SECTION 5 Communications and Training Plan

In order for NextGen to be successful, we must tap into the ingenuity and insights of AVS employees, who are in a unique position to make potential enhancements and improvements as well as identify risk areas. To reach these employees, we developed an overall message on NextGen for AVS. We will distribute information about NextGen throughout AVS, and will develop comprehensive training on the details of NextGen initiatives as they affect AVS.

### A. Key Messages

#### 1. NextGen is an integrated collection of initiatives, not a single program.

NextGen is an integrated program to improve safety, efficiencies, and the environment. It consists of different acquisition programs, operational changes, research projects and prototypes. Some of the programs and initiatives are mature; other initiatives are still in research. These initiatives will take advantage of existing aircraft capabilities, empower the flight crew by providing applicable information to the flight deck, and be implemented as performance-based operations where practical. Many of the cockpit initiatives relate to the transformational programs of Performance-Based Navigation, ADS-B, and ATC data communications. The NAS transformation will occur over time, not all in one year.

#### 2. The importance of safety.

As NextGen is implemented, we will ensure system safety is not only maintained but improved. Safety improvements must accompany both the expected increase in traffic and new operations flown in increasingly demanding conditions. SMS is a comprehensive, proactive approach for managing and evaluating all aspects of system safety, especially monitoring the level of safety achieved in the air transportation system, as well as evaluating changes to the system. ASIAs is a tool that will play a significant role in supporting the tenants of SMS including Safety Risk Management and Safety Assurance requirements

### **3. The importance of efficient safety oversight.**

The implementation of NextGen involves a significant investment from industry and government. In order for those investments to continue, work must demonstrate a return on investment within a few years. We must use our resources effectively to identify and mitigate risks, while promptly introducing new systems and operations that have been tested and proven safe. In addition, we must ensure industry understands the safety requirements and expectations through early involvement of AVS in developmental activities.

### **4. The importance of integrating AVS activities for NextGen.**

The field is the first to see the applications for approval of new technologies and operations. We need a coordinated capability description for NextGen products so we know how each individual approval fits into the larger picture. We need a coordinated operational approval process for NextGen across AVS so the NextGen changes are planned, certified, operationally approved, and integrated with the NAS. We are aligning resources to meet these challenges of NextGen, through the NextGen branches in AFS, NextGen focal points in AIR, and the NextGen program plan in AOV. We developed an AVS work plan for NextGen, which captures the impact of NextGen on AVS services and offices.

### **5. The importance of coordination with other FAA offices.**

In the last several years, we have worked more closely with other lines of business such as the offices of Air Traffic, Airports, and Environment and Energy to plan for NextGen. The aircraft applicant cannot achieve benefit for equipage if air traffic automation and the ATC workforce cannot implement the change. Many core NextGen changes for air traffic and airspace redesign rely on improved aircraft capability.

### **6. The importance of coordination with stakeholders.**

The NextGen initiatives cannot be implemented by the FAA alone. Manufacturers will need to develop new aircraft systems, and operators will need to install those systems and train for their use. We must coordinate the planned capabilities to ensure that the other members of the aviation community can align their plans and focus their resources to achieve our goals. We must also coordinate with other agencies as appropriate (for example, the Department of Defense).

## **B. Outreach Methodology**

We must all have an opportunity to review NextGen objectives and contribute to their refinement and overall program success. People throughout AVS have unique insights into the opportunities and challenges we face in implementing NextGen. AVS plans to use the following tools to inform and engage the workforce.

### **1. AVSMT site visits**

The AVS Management Team (AVSMT) is visiting each office to promote an understanding of NextGen, among other areas of focus.

### **2. AVS Town Hall meetings**

Regular town hall meetings allow the AVSMT to discuss pertinent NextGen issues and to address questions.

### **3. Establish an AVS intranet site for NextGen communication**

The AVS intranet site will contain an overview of NextGen: the air traffic challenges, the solutions, and the steps leading to the solution. The site will enable users to track the AVS NextGen planning and implementation process. A major source of confusion is the proliferation of plans. This site will explain the interrelationship and progress of plans from the NAS Enterprise Architecture on down. It will also contain links to more general ATO NextGen video and information site at <http://www.faa.gov/nextgen>. The AVS website will include a fact sheet, frequently asked questions, and an e-mailbox for feedback, which will be checked regularly to answer employee questions about NextGen.

### **4. Identify appropriate target audiences for messaging -- who needs to know what – general knowledge by everyone versus applied knowledge by few for early adoption**

#### **AIR: NextGen Policy Team (NGPT) and ACO focal points**

The NextGen Policy Team is a cross-organization team coordinating policy and initial issue papers relating to NextGen technologies and complex avionics issues. The primary focus is on the development of consistent and coordinated approaches to the airworthiness approval of these systems. Initial issue papers include first installations of NextGen and related technologies. In support of NextGen, the Aircraft Certification Service plays a critical role in ensuring the timely availability of standards, policy and guidance material for aircraft installations. The Standards Management Team (SMT) is responsible for the coordination of policy, and tasks the NGPT to develop and maintain detailed policy plans on its behalf. In some cases, prototype or early-adopter projects will precede the availability of standards and guidance, and will require additional coordination to balance the precedent established by the project. Some of these projects will require coordination with other organizations, such as AFS and ATO. Additionally, ACO focal points will work with AIR-130 and directorate standards staff in the development of policy for new and novel applications.

## **AFS NextGen Field Offices**

AFS has established NextGen branches in the AFS regional offices. These NextGen liaisons will facilitate understanding of the big picture and ensure the FAA's safety workforce sees, knows, and understands where the agency is headed with NextGen. Administrator Randy Babbitt unveiled the plan at a conference on NextGen implementation, explaining that the newly assigned specialists will ensure the approval aspects of NextGen. "Let's face it: equipment and procedures aren't going to amount to much if the players don't know where it all fits and how it all works. I'm going to make sure that when NextGen shows up at the door, our safety workforce knows exactly what's in the box." If we understand NextGen, we are more likely to accept it and take advantage of its capabilities.

## **AOV**

AOV is developing an organizational initiative to address NextGen issues as efficiently and effectively as possible. This initiative, the NextGen program, acknowledges the need to enable the safe and timely transformation of the NAS. In a two-phase effort, the AOV NextGen program is going to ensure a systematic management of safety risks, establish and solidify working relationships in AOV, AVS, and ATO, and develop a multi-disciplined work force with experience and knowledge of the FAA acquisition management system. In October 2009, a program charter was established and implemented. The first phase of the program, to be completed this year, is to develop the program management plan and to define the oversight portfolio. The second phase will execute the plan and carry out the program in 2011.

## **5. Internal Awareness Campaign**

We will conduct an internal awareness campaign at the AVS level to promote understanding and awareness of what NextGen is and how it will improve aviation. We will report our progress regular using the AVS intranet site.

## **C. Training of the AVS workforce on NextGen**

### **1. AVS NextGen Training Oversight Team**

To promote coordination, integration and standardization of NextGen training throughout AVS, an AVS NextGen Training Oversight Team will be established. This team will meet regularly to share information and concerns on NextGen training. The team will be co-chaired by the Aircraft Certification and Flight Standards Service leads. This Oversight Team will consist of the two co-chairs, and members from AFS-500, AIR-500 and AOV-20. Coordination with the AVS Training Council and the AVS Training Workgroup will be accomplished as needed.

This team will meet at least monthly, and more frequent when required. It will serve as the curriculum oversight committee for new courses developed as part of the program plan, and be augmented as needed.

## **2. New Course Development**

New training courses will be developed in key areas, as individual initiatives within NextGen are matured. The following new courses have been identified.

**AVS-NextGen Overview.** This training re-emphasizes the importance of NextGen and explains how the workforce assists in the successful deployment of new equipment and procedures. The new technology and procedures that accompany NextGen may in the end change aviation to the same degree as the advent of avionics itself and it is incumbent that we provide the safety professionals the tools to meet this challenge.

**NextGen Technologies for ASIs.** This course is designed to give ASIs the operational knowledge and hands on experience with NextGen technologies. This will enable the ASI to understand the capabilities and the pilot training requirements for NextGen Technologies. This course will also be available to related positions such as flight test pilots and engineers.

**AFS-Oceanic/Remote.** NextGen technologies are integral to new oceanic operations and it is vital that ASIs be versed in these initiatives. In addition, training in Oceanic and International Operations will enhance standardization for certification, authorizations and international standards and requirements.

**New NextGen Training Profiles for AFS, AIR, and AOV.** We will review and update the current training profiles for NextGen Branches (regions), and Aircraft Evaluation Groups (AEGs), aviation safety engineers, flight test pilots, and AOV Air Traffic Safety Inspectors (ATSI).

## **D. Current Challenges:**

### **1. Resource (expertise) limitations**

Many of the AVS senior staff involved in NextGen are still intensively involved in the core NextGen planning. Their involvement is required from the beginning of course development to ensure the course is relevant and accurate.

### **2. Timeliness of training**

As new NextGen work enters the approval cycle, we all need to know the NextGen overall vision, overall strategy, and where our job “fits.” Many of the NextGen operational improvements rely on integrated assessments which must be accomplished across AVS. NextGen is rolling out now, so we must develop training rapidly.





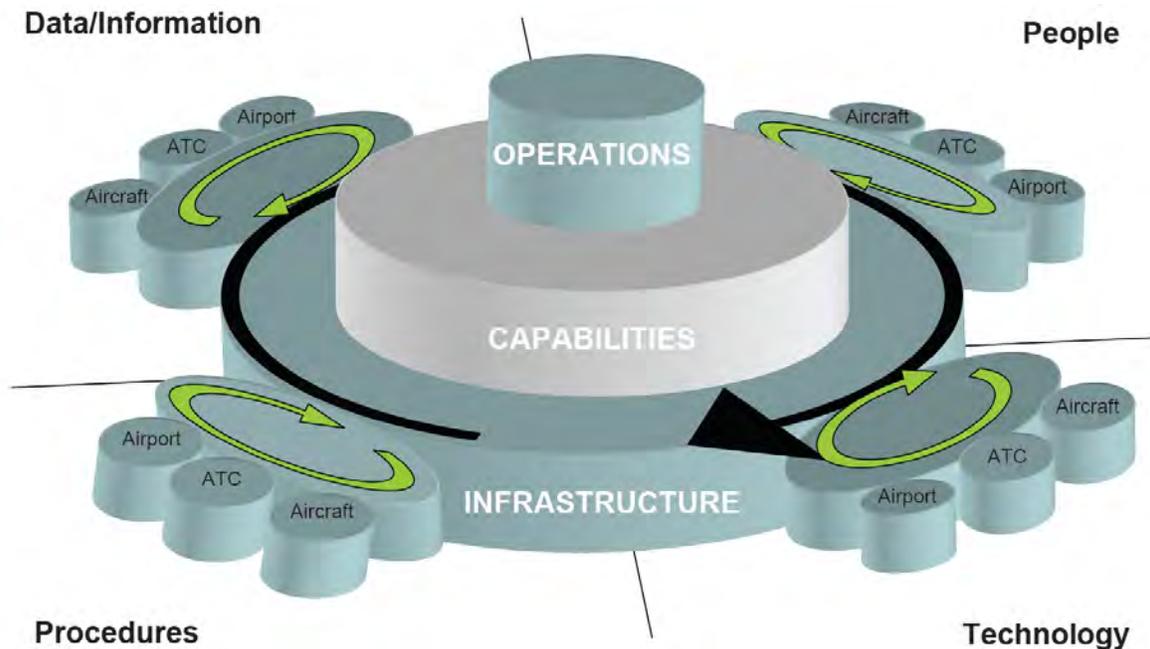
## SECTION 6

# Future Challenges

AVS contributions are vital to the successful implementation of NextGen. We must continue to improve safety, as the number of operations will continue to increase. Safety, aircraft centric operations, and equipage components are key metrics for AVS. Without the successful integration of new infrastructure capabilities within the existing operational structure, efficiency and capacity benefits will not occur. This AVS NextGen Work Plan will help us fulfill our certification and safety oversight responsibilities for safe flight operations, and integrate our activities with the FAA’s planned NextGen infrastructure and capabilities.

NextGen occurs in a highly complex and integrated environment. To be successful, we must keep our focus on a common set of operations linked to sound services and an enabling infrastructure that accounts for the people, procedures, technology, and data shared across the aircraft, air traffic, and airport communities. As depicted in Figure 7, the operational level describes the improved performance and future aircraft operations stakeholders (commercial, business, general aviation and military) are seeking in the NAS. Services are features or functions across the airborne, air traffic and airport communities enabling the desired operations. The infrastructure is the foundation on which the aviation community relies. It defines the people, procedures, technology, and data required to support the services and perform an operation.





**Figure 7. NextGen Air-Ground Framework**

This plan provides the high-level objectives from which NextGen tasks are derived. As we move forward with implementation of these activities, the following areas need further consideration.

**A. NextGen will evolve over time**

Like the FAA NextGen Implementation Plan, the AVS work plan for NextGen will evolve over time. NextGen is a complex task because interdependent systems in various stages of development and maturity are implemented in a variety of timeframes. We may learn our initial activities need correction. When corrections are needed, we must acknowledge this fact and quickly take action. We will need to be flexible and willing to adapt to the ever-changing scenarios we are sure to encounter. NextGen’s success also depends on operators equipping their aircraft. Some factors are out of our control. While never forgetting safety is our primary responsibility, we need a fresh perspective on NextGen initiatives and challenges to ensure its success.

We must keep ourselves up to date on the newest technologies and procedures. Through programs such as the AVSMT site visits, NextGen branches in the regional offices, and the AVS NextGen website, we will ensure everyone has access to current information on the latest NextGen initiatives.

**B. Resources must be stable**

Stable funding and priority from Congress is essential to the implementation of our NextGen initiatives. AVS will continue to integrate our planning and resource needs into

the Agency requirements, and provide visibility to Congress on the use of those resources.

### **C. UAS integration**

Unmanned Aircraft Systems (UAS) are gaining more and more attention, but are missing in this plan. This does not imply UAS operations are not part of the future. UAS production will likely increase and play a larger role in daily NAS operations. The RTCA Task Force also listed UAS as an additional consideration in its report. The FAA responded, “in collaboration with industry- (we) will have to implement policy decisions, minimum operational performance standards guidance, and technical requirements to support certification and operational approval for routine operations in the NAS”. We must keep UAS operational considerations in mind. In fact, due to the growth and importance of the UAS segment, we have created a specific UAS program office, AFS-407, which is responsible for all of the UAS integration issues within AVS.

### **D. Space-based backup policy decision yet to be made**

Virtually all NextGen capabilities depend on the increased accuracy and availability of space-based navigation. However, no backup policy decision has been made when considering the impacts of space-based navigation not being available. NextGen includes considerations for distance measuring equipment (DME) area navigation capability, but this only benefits multi-sensor aircraft.

### **Conclusion**

We recognize the importance of NextGen to our nation, and are preparing to face the challenges of timely and coordinated implementation of new technologies. We play an integral role in the success of NextGen, and to be successful we must understand NextGen as it relates to our responsibilities. The Flight Standards Service, the Aircraft Certification Service and the Air Traffic Oversight Service are our primary offices that will oversee the safe implementation of NextGen. This work plan is an initial step to prepare our organization. Working together with other FAA offices and with industry, we will take the remaining steps to arrive at the full potential of NextGen.





## APPENDICES





**APPENDIX A  
COORDINATION AND STREAMLINING INITIATIVES**

The following table outlines 23 coordination and streamlining initiatives.

| <b>Initiative</b>                       | <b>Specific Action</b>   |
|---|--|
| Plan for NextGen standards              | <p>The FAA agrees that timely and cost-effective standards for new capabilities are essential. As part of the NextGen Implementation Plan, the FAA will maintain a plan for all of the standards for aircraft systems and operational approval. This plan is coordinated as a part of NextGen in an effort to provide the standards at the right time, when sufficiently mature to achieve safe and cost-effective solutions.</p> <p>Lead: NextGen Management Board<br/>Schedule: Complete (Jan 2010); update annually.</p>  |
| Coordination: Operational Approvals     | <p>AFS will implement NextGen branches in each Regional Office. These branches will concentrate experts in new technologies and procedures to support the operational review and approval of NextGen throughout the region. They will also work with other NextGen branches, and their activities will be coordinated through a National NextGen focal point in the office of Flight Technologies and Procedures.</p> <p>Lead: Director, Flight Standards Service (AFS-1)<br/>Schedule: Complete. Offices established; existing specialists in all weather operations assigned</p> |
| Coordination: Aircraft Certification    | <p>AIR will implement a NextGen Policy Team to coordinate across the Directorates (responsible for different types of aircraft), and will identify NextGen Specialists in aircraft certification offices with significant NextGen activity.</p> <p>Lead: Director, Aircraft Certification Service (OPR: AIR-130 and ACOLT)<br/>Schedule: The NextGen Policy Team has been established. In FY10, the implementation plan for NextGen Specialists will be completed including the number and location of specialists.</p>  |
| Coordination: System Safety Assessments | <p>FAA will create a cross-agency team responsible for coordinating across all lines of business and performing organizations. This team will facilitate timely integration and execution of safety assessments. The cost and schedule risks associated with ensuring a safe system can best be mitigated by addressing safety from the onset of the program. This ensures the requisite performance, robustness, human factors and mitigations are built into the system and the operation.</p> <p>Lead: Safety Integration Team Lead<br/>Schedule: Complete.</p>                 |

| Initiative   | Specific Action   |
|--|---|
| Procedures for Coordination of New Technology Certification Projects | <p>FAA will publish new procedures for coordinating aircraft certification projects which introduce new NextGen technologies, to ensure coordination between the field office conducting the project and the offices responsible for NextGen standards (through issue papers). Through early coordination, provide more effective feedback on innovative projects early in their application process, as well as utilize the experience from these projects in developing national policy. (FAA Order on Standardized Usage of Issue Papers)</p> <p>Lead: Manager, Aircraft Engineering Division, Aircraft Certification Service (AIR-100)</p> <p>Schedule: June 2010</p> |
| Tracking Operational Applications                                    | <p>FAA will provide status reports at certain milestones to applicants for operational approvals that require Flight Standards Service Regional Office (RO) and/or Headquarters (HQ) level concurrence. At a minimum, these updates should be provided monthly; upon receipt of an application package at RO and HQ levels; and once final concurrence is provided. Note: These and other applicants may receive an update within 3 days of a request for status.</p> <p>Lead: Director, Flight Standards Service (OPR: AFS-470)</p> <p>Schedule: September 2010</p>  |
| Coordination of Policy   | <p>FAA will coordinate draft policy and guidance material with appropriate industry forums during development of the policy when possible. For example, the FAA will continue to coordinate PBN documents with the Performance-Based Operations Aviation Rulemaking Committee (PARC). Recognizing that no single forum represents all industry stakeholders, the FAA will also provide for public comment on all draft policy.</p> <p>Lead: Director, Aircraft Certification Service (AIR-1); Director, Flight Standards Service (AFS-1)</p> <p>Schedule: Complete</p>  |
| Aviation Safety Communication  | <p>AVS will develop a website to promote communication and coordination of NextGen-related projects and policy.</p> <p>Lead: Manager, AQS-300, Office of Quality, Integration, &amp; Executive Services, Planning &amp; Performance Division</p> <p>Schedule: September 2010</p>  |
| Aviation Safety Training Plan  | <p>AVS will develop a training plan to identify NextGen training requirements for the AVS workforce.</p> <p>Lead: NextGen Training Oversight Committee</p> <p>Schedule: December 2010</p>   |
| Consolidated, Electronic Application Process                         | <p>A review of the capabilities of Web-based automated Operations Safety System (WebOPSS) will be conducted to determine the feasibility of multiple, electronic applications for various NextGen operations.</p> <p>Lead: Director, Flight Standards Service (AFS-1)</p> <p>Schedule: September 2010</p>   |

| Initiative   | Specific Action   |
|--|---|
| Process Review: Lean Process review for Instrument Flight Procedures | <p>FAA will conduct a review of processes, tools, and procedures related to standards, policies, development, approval, publication, and utilization of instrument flight procedures such as RNAV and RNP. A cross-Agency team with representation from all affected offices will review the end-to-end process with the objective of establishing a Lean process that provides efficiency and consistency for development and implementation of all instrument flight procedures. This review will also address the operational approval process for procedures. Lead: Senior Vice President for Operations, Air Traffic Organization; Deputy Associate Administrator, Aviation Safety (OPR: AFS-402 and AJR-37)</p> <p>Schedule: Process review, with recommendations, completed by the end of 2010.</p>  |
| Early-Adopter Procedure for Coordination                             | <p>The FAA will develop coordination procedures for all projects to ensure early involvement of aviation safety representatives when the FAA is funding development or implementation of technology or procedure. Lead: Aircraft and Operator Solution Set Coordinator</p> <p>Schedule: December 2010</p>   |
| Expansion of Consultants for RNP AR Approvals                        | <p>The FAA had previously allowed companies to apply as RNP AR approval consultants. When approved by the FAA, these companies are recognized as having the skills and experience to assist operators in developing applications for RNP AR operations. The FAA will re-open this program to allow additional companies to obtain this accreditation. Lead: Director, Flight Standards Service (OPR: AFS-470)</p> <p>Schedule: September 2010</p>   |
| Update Guidance for RNP (Authorization Required) Approaches          | <p>Working with the Performance-based Aviation Rulemaking Committee (PARC), AVS will develop an update to AC 90-101 <i>APPROVAL GUIDANCE FOR RNP PROCEDURES WITH SAAAR</i>. This revision will clarify training requirements, reduce the requirements for operator flyability checks, and harmonize with ICAO Doc 9613 PBN MANUAL (including name change to RNP AR). Additional guidance with respect to database validation will be developed. Concurrent with this revision, a change to the relevant procedure design criteria, FAA Order 8260.52 <i>UNITED STATES STANDARD FOR REQUIRED NAVIGATION PERFORMANCE (RNP) APPROACH PROCEDURES WITH SPECIAL AIRCRAFT AND AIRCREW AUTHORIZATION REQUIRED (SAAAR)</i>, will be published. Equivalent changes will be made to FAA inspector guidance in Order 8900.1 <i>FLIGHT STANDARDS INFORMATION MANAGEMENT SYSTEM</i> and relevant operations specifications (OpsSpecs). Lead: Director, Flight Standards Service (OPR: AFS-470)</p> <p>Schedule: December 2010</p> |

| Initiative   | Specific Action   |
|--|---|
| Coordination of PBN implementation                                 | <p>AVS will task the PARC to coordinate implementation of PBN from a national perspective. The PARC will share domestic developments, certification and operational approval issues, procedure design challenges, and track international development. The FAA will review the membership of the PARC to ensure there are appropriate representatives for all stakeholder groups.</p> <p>Lead: Deputy Associate Administrator, Aviation Safety (OPR: AFS-400)</p> <p>Schedule: June 2010</p>  |
| Update operational specifications for international RNP approaches | <p>OpsSpecs paragraph <i>C384 REQUIRED NAVIGATION PERFORMANCE (RNP) PROCEDURES WITH SPECIAL AIRCRAFT AND AIRCREW AUTHORIZATION REQUIRED (SAAAR)</i> will be revised. This update will provide for operations on RNP AR procedures designed in accordance with U.S. or international RNP AR procedure design standards.</p> <p>Lead: Director, Flight Standards Service (OPR: AFS-470)</p> <p>Schedule: September 2010</p>   |
| Establish international procedures coordination procedure          | <p>AVS will refine processes for the recently developed International Review Board conducted by the Flight Technologies and Procedures Division, AFS-400. In addition, AFS-400 will circulate draft Order 8260.31C <i>FOREIGN TERMINAL INSTRUMENT PROCEDURES</i> for review and publication.</p> <p>Lead: Director, Flight Standards Service (OPR: AFS-460)</p> <p>Schedule: December 2010</p>  |
| Prioritization and Sequencing                                      | <p>AVS will update the criteria used for sequencing projects for aircraft certification to recognize NextGen projects. Safety initiatives will continue to receive the highest priority.</p> <p>Lead: Director, Aircraft Certification Service (AIR-1)</p> <p>Schedule: September 2010</p>  |
| Use of Manufacturer-Data for Installation                          | <p>NextGen avionics are typically approved under a Technical Standard Order (TSO). The FAA will publish guidance material on the use of TSO data when an article is installed in aircraft. This guidance will acknowledge that the manufacturer of the article has typically accomplished many demonstrations and tests that may be needed for installation approval, including verification that the software has been developed in accordance with industry standards. Unique installation issues will still have to be addressed under the installation approval. (AC for Engineering Data Approvals and TSO Installations)</p> <p>Lead: Manager, Aircraft Engineering Division, Aircraft Certification Service (OPR: AIR-110)</p> <p>Schedule: Feb 2011</p> |

| Initiative  | Specific Action   |
|---|---|
| Manufacturer approval of TSO articles                       | <p>AVS will update policy on the issuance of TSO authorizations, and provide guidance to industry in an Advisory Circular. The AC will address the TSO submittal and approval process, as well as address how applicants may obtain FAA acceptance of additional functions included in the article but not covered under the TSO.</p> <p>Lead: Manager, Aircraft Engineering Division, Aircraft Certification Service (OPR: AIR-120)<br/>Schedule: December 2010</p>  |
| Expansion of Approved Model Lists                           | <p>AVS views the expansion of the Approved Model List, STC process as a key enabler for streamlining the installation approval of several NextGen technologies. The process leverages the appropriate re-use of compliance data across multiple type data approvals whereby an applicant can obtain one approval that encompasses multiple aircraft. The FAA created a team to evaluate the harmonization of this policy across aircraft types, which will propose recommendations for new policy.</p> <p>Lead: Director, Aircraft Certification Service (OPR: AIR-110)<br/>Schedule: December 2010</p> |
| Field Approvals of Avionics Installations                   | <p>AVS will update guidance to aviation safety inspectors on the approval of avionics installations under field approvals. This will include the use of approved data, and address integration with other avionics. This update will also address the approval authority of changes to the aircraft flight manual.</p> <p>Lead: Manager, Aircraft Maintenance Division, Flight Standards Service (OPR: AFS-360)<br/>Schedule: September 2011</p>  |
| Guidance Material on Major and Minor Changes in Type Design | <p>AVS will publish guidance material on the determination of changes in an aircraft type design as being major or minor. Major changes must be approved by amended type certificate or supplemental type certificate, while minor changes can be approved through several different methods, thereby enabling more flexible and potentially expedient approvals.</p> <p>Lead: Manager, Aircraft Engineering Division, Aircraft Certification Service (OPR: AIR-110)<br/>Schedule: July 2011</p>  |

**Table 2. Streamlining Initiatives**

**APPENDIX B**

**OPERATIONAL IMPROVEMENT (OI) RELATED ACTIVITY**

| OI Number/Title  | AVS |     |     |     | AIR-AFS-AOV NextGen Activity/Target  |
|--|-----|-----|-----|-----|--|
|  | AIR | AFS | AOV | AVP |  |
| <b>OI 102117</b> Reduced Horizontal Separation Standards, En Route - 3 Miles                   | ■   | ■   | ■   |     | <b>AIR:</b> -- Complete ADS-B AC ( <b>Apr 2010</b> )<br><b>AFS:</b> -- Support the Working Group (WG) and Safety Risk Management Panel (SRMP). Perform modeling, simulations and analyses to validate risk assessments for proposed procedures. ( <b>ongoing</b> )<br><b>AOV:</b> -- Support Working Groups & Program Office Approvals/Disapprovals for High Risk Safety Mitigations, when required ( <b>ongoing</b> )   |
| <b>OI 102118</b> Delegated Responsibility for Horizontal Separation                            | ■   | ■   | ■   |     | <b>AIR:</b> -- Complete ADS-B AC ( <b>Apr 2010</b> )<br>-- Develop ADS-B Guidance Display TSO ( <b>TBD</b> )<br><b>AFS:</b> -- Support the Working Group (WG) and Safety Risk Management Panel (SRMP). Perform modeling, simulations and analyses to validate risk assessments for proposed procedures.( <b>TBD</b> )<br><b>AOV:</b> -- Support Working Groups & Program Office Approvals/Disapprovals for High Risk Safety Mitigations, when required ( <b>TBD</b> )  |
| <b>OI 102141</b> Improve Parallel Runway Operations  | ■   | ■   | ■   |     | <b>AIR:</b> -- Develop TSO & AC ( <b>2014</b> )<br><b>AFS:</b> -- Develop Research & Simulation CSPO/NTZ ( <b>Jul 2010</b> )<br>-- Support SRMP: New Runway Spacing Criteria ( <b>Sep 2010</b> )<br>-- Complete analysis of ILS Simultaneous Approach ( <b>Aug 2010</b> )<br>-- Complete research of current CSPO separations incorporating RNAV (GPS) ( <b>Sep 2010</b> )<br><b>AOV:</b> -- Support Working Groups & Program Office Approvals/Disapprovals for High Risk Safety Mitigations, when required ( <b>2011</b> )                                |
| <b>OI 102143</b> Delegated Responsibility for Horizontal Separation (Lateral and Longitudinal) | ■   | ■   | ■   |     | <b>AIR:</b> -- Complete ADS-B out AC ( <b>Apr 2010</b> )<br>-- Develop ADS-B Guidance Display TSO ( <b>TBD</b> )<br><b>AFS:</b> Support the Working Group (WG) and Safety Risk Management Panel (SRMP). Perform modeling, simulations and analyses to validate risk assessments for proposed procedures. ( <b>TBD</b> )<br><b>AOV:</b> -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required ( <b>TBD</b> )   |
| <b>OI 102146</b> Flexible Routing  | ■   | ■   | ■   |     | <b>AIR:</b> -- Complete FANS 1/A AC20-140A ( <b>2010</b> )<br>-- Complete AC20-138B ( <b>2010</b> )<br><b>AFS:</b> -- Support safety assessments and risk analyses. Support the Working Group (WG) and Safety Risk Management Panel (SRMP). Perform modeling, simulations and analyses to validate risk assessments for proposed procedures. ( <b>ongoing</b> )<br><b>AOV:</b> -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required ( <b>TBD</b> )   |
| <b>OI 102147</b> Self-Separation Airspace - Oceanic  | ■   | ■   | ■   |     | <b>AIR:</b> -- Complete AC20 -138B ( <b>Jul 2010</b> )<br>-- Develop ADS-B In (Multi Aircraft Self Separation) ( <b>TBD</b> )<br>-- Develop SC-214 Data Comm over Sat Comm TSO&AC ( <b>TBD</b> )<br><b>AFS:</b> -- Support safety assessments and risk analyses.( <b>TBD</b> )<br><b>AOV:</b> -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required ( <b>TBD</b> )  |
| <b>OI 102148</b> Self-Separation Airspace Operations   | ■   | ■   | ■   |     | <b>AIR:</b> -- Complete AC20-138B ( <b>Jul 2010</b> )<br>-- Develop ADS-B In (Multi Aircraft Self Separation) ( <b>TBD</b> )<br>-- Develop SC-214 Data Comm over Sat Comm TSO&AC ( <b>TBD</b> )<br><b>AFS:</b> -- Perform computer modeling, simulations, and analyses to support risk assessments and the development of separation standards ( <b>TBD</b> )<br><b>AOV:</b> -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required ( <b>TBD</b> )   |
| <b>OI 102149</b> Delegated Separation - Complex Procedures                                     | ■   | ■   | ■   |     | <b>AIR:</b> -- Complete AC20-138B ( <b>Jul 2010</b> )<br>-- Develop ADS-B In (Multi Aircraft Self Separation) ( <b>TBD</b> )<br>-- Develop SC-214 Data Comm over Sat Comm TSO&AC ( <b>TBD</b> )<br><b>AFS:</b> -- Support the Working Group (WG) and Safety Risk Management Panel (SRMP). Perform modeling, simulations and analyses to validate risk assessments for proposed procedures. ( <b>TBD</b> )<br><b>AOV:</b> -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required ( <b>TBD</b> ) |
| <b>OI 102150</b> Reduce Separation - High Density Terminal - Less Than 3 Miles                 | ■   | ■   | ■   |     | <b>AIR:</b> -- Far Term ( <b>TBD</b> )<br><b>AFS:</b> -- Support safety assessments and risk analyses. Support the Working Group (WG) and Safety Risk Management Panel (SRMP). Perform modeling, simulations and analyses to validate risk assessments for proposed procedures.( <b>TBD</b> )<br><b>AOV:</b> -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required ( <b>TBD</b> )   |
| <b>OI 102152</b> Dynamic, Pairwise Wake Turbulence Separation                                  | ■   | ■   | ■   |     | <b>AIR:</b> -- Plan Far Term ( <b>TBD</b> )<br><b>AFS:</b> -- Support safety assessments and risk analyses. Support the Working Group (WG) and Safety Risk Management Panel (SRMP). Perform modeling, simulations and analyses to validate risk assessments for proposed procedures. ( <b>ongoing</b> )<br><b>AOV:</b> -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required ( <b>TBD</b> )   |
| <b>OI 102153</b> Limited Simultaneous Runway Occupancy   | ■   | ■   | ■   |     | <b>AIR:</b> -- Plan Far Term ( <b>TBD</b> )<br><b>AFS:</b> -- Support safety assessments and risk analyses. Support the Working Group (WG) and Safety Risk Management Panel (SRMP). Perform modeling, simulations and analyses to validate risk assessments for proposed procedures. ( <b>TBD</b> )<br><b>AOV:</b> -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required ( <b>TBD</b> )   |
| <b>OI 103122</b> Full Improved Weather Sensor Network  | ■   | ■   | ■   |     | <b>AIR:</b> -- Develop Weather Reporting AC ( <b>TBD</b> )<br><b>AFS:</b> -- Update Order 8900.1 vol 3 Ch 26 ( <b>Sep 2010</b> )<br>-- Support NextGen Aviation Weather WGs ( <b>ongoing</b> )<br>-- Support Weather Technology in the Cockpit ( <b>ongoing</b> )<br><b>AOV:</b> -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required ( <b>2013</b> )  |

|  |   |   |   |   |
|--|---|---|---|---|
| OI 103208 Improve Runway Safety Situational Awareness for Pilots             | ■ | ■ | ■ | <p><b>AIR:</b> -- Complete ADS-B out Surface TSO&amp; AC (TBD)<br/>-- Complete CDTI with Alerting (ADS-B In) (2010)<br/><b>AFS:</b> -- Complete draft SMGCS AC (Mar 2010)<br/><b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2010)</p>   |
| OI 104105 Automation-Assisted Trajectory Negotiation and Conflict Resolution | ■ | ■ | ■ | <p><b>AIR:</b> -- Develop SC-214 Data Comm Standards (TBD)<br/>-- Complete AC20-138B (Jul 2010)<br/>-- Develop SWIM AC (TBD)<br/><b>AFS:</b> -- Develop guidance and Operational Approval (as required)<br/><b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (TBD)</p>  |
| OI 104121 Automated Negotiation/Separation Management                        | ■ | ■ | ■ | <p><b>AIR:</b> -- Develop SC-214 Data Comm Standards (TBD)<br/>-- Complete AC20-138B (Jul 2010)<br/>-- Develop SWIM AC (TBD)<br/><b>AFS:</b> -- Develop guidance and Operational Approval, as required<br/><b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (TBD)</p>   |
| OI 104123 Time Based Metering Using RNAV and RNP Route Assignments           | ■ | ■ | ■ | <p><b>AIR:</b> -- Complete AC20-138B (Jul 2010)<br/><b>AFS:</b> -- Support general oversight of time based metering (ongoing)<br/><b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2010)</p>   |
| OI 104124 Use Optimized Profile Descent                                      | ■ | ■ | ■ | <p><b>AIR:</b> -- Complete AC20-138B (Jul 2010)<br/><b>AFS:</b> -- Support general oversight of optimized profile descent (ongoing)<br/><b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (TBD)</p>  |
| OI 104126 Trajectory-Based Management - Gate-To-Gate                         | ■ | ■ | ■ | <p><b>AIR:</b> -- Develop SC-214 Data Comm Standards (TBD)<br/>-- Complete AC20-138B (Jul 2010)<br/>-- Develop SWIM AC (TBD)<br/><b>AFS:</b> -- (TBD)<br/><b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (TBD)</p>  |
| OI 104206 Full Surface Traffic Management with Conformance Monitoring        | ■ | ■ | ■ | <p><b>AIR:</b> -- Complete ADS-B Out Surface TSO&amp;AC (TBD)<br/>-- Develop SC-214 Data Comm Standards (TBD)<br/>-- Develop CDTI (ADS-B In) TSO&amp;AC (2010)<br/><b>AFS:</b> -- (TBD) as ADS-B matures<br/><b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (TBD)</p>   |
| OI 104207 Enhanced Surface Traffic Operations                                | ■ | ■ | ■ | <p><b>AIR:</b> -- Complete AC20-140A (TBD)<br/>-- Develop SC-214 Data Comm Standards (TBD)<br/><b>AFS:</b> (TBD)<br/><b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2010)</p>  |
| OI 104208 Enhanced Departure Flow Operations                                 | ■ | ■ | ■ | <p><b>AIR:</b> -- Develop SC-214 Data Comm (TBD)<br/><b>AFS:</b> -- Develop guidance and Operational Approval, as required<br/><b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2011)</p>  |
| OI 106202 Enhance Emergency Alerting   | ■ | ■ | ■ | <p><b>AIR:</b> -- ADS-B AC (Apr 2010)<br/><b>AFS:</b> -- Incorporate operator guidance with revision to AIM (TBD)<br/><b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2010)</p>   |
| OI 107107 Ground Based Augmentation System (GBAS) Precision Approaches       | ■ | ■ | ■ | <p><b>AIR:</b> -- Complete Cat I TSO C161a, C162a (TBD)<br/>-- Update Cat III: TSO C161/C162 (2015)<br/><b>AFS:</b> -- Complete draft combination of AC 120-29A and AC 120-28D (Sep 2010)<br/>-- Complete update Order 8900.1 guidance (Sep 2010)<br/>-- Complete update OpSpec C052 (Sep 2010)<br/>-- Support safety assessments and risk analyses. Support the Working Group (WG) and Safety Risk Management Panel (SRMP). Perform modeling, simulations and analyses to validate risk assessments for proposed procedures. (ongoing)<br/><b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2010)</p> |
| OI 107114 Domestic RNP Navigation  | ■ | ■ | ■ | <p><b>AIR:</b> -- Complete AC20-138B (Jul 2010)<br/><b>AFS:</b> -- Support safety assessments and risk analyses. Support the Working Group (WG) and Safety Risk Management Panel (SRMP). Perform modeling, simulations and analyses to validate risk assessments for proposed procedures. (ongoing)<br/><b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (TBD)</p>  |
| OI 107115 Low Visibility/Ceiling Takeoff Operations                          | ■ | ■ | ■ | <p><b>AIR:</b> -- Update MASPS (2011)<br/>-- Update AC20-VS (2012)<br/><b>AFS:</b> -- Amend OPSPECS to permit 500 RVR takeoffs (TBD)<br/>-- Complete draft combination of AC 120-29A and AC 120-28D (Sep 2010)<br/>-- Complete draft SMGCS AC with ARP (Sep 2010)<br/>-- Complete proof of concept using EFVS in lieu of centerline lights/low visibility takeoff (Jun 2010)<br/>-- Create Minimum Performance Standards for Advanced Vision Systems (Sep 2010)<br/>-- Specify airport criteria for 500 RVR SMGCS operations (May 2010)<br/><b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2010)</p> |

|   |   |   |   |  |
|---|---|---|---|--|
| <p><b>OI 107116</b> Low Visibility/Ceiling Departure Operations</p>   | ■ | ■ | ■ | <p><b>AIR:</b>-- Support AFS<br/> <b>AFS:</b> -- Draft combination of AC 120-29A and AC 120-28D (<b>Sep 2010</b>)<br/> -- Complete proof of concept using EFVS in lieu of centerline lights/low visibility takeoff (<b>Aug 2010</b>)<br/> -- Complete draft SMGCS AC with ARP (<b>Sep 2010</b>)<br/> -- Create Minimum Performance Standards for Advanced Vision Systems (<b>Sep 2010</b>)<br/> -- Amend OPSPECS to permit 500 RVR takeoffs (<b>Apr 2010</b>)<br/> <b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (<b>2010</b>)</p>  |
| <p><b>OI 107117</b> Low Visibility/Ceiling Approach Operations</p>  | ■ | ■ | ■ | <p><b>AIR:</b> -- Complete EFVS, SVS MASPS refresh (<b>Dec 2011</b>)<br/> -- Develop Mid-Term ACs (<b>2012-2014</b>)<br/> -- Update GBAS TSO C161 (<b>2012-2013</b>)<br/> <b>AFS:</b> -- Specify airport criteria for 500 RVR SMGCS operations (<b>TBD</b>)<br/> -- Complete draft combination of AC 120-29A and AC 120-28D (<b>Sep 2010</b>)<br/> -- Complete draft new OpSpecs for Cat III (<b>Aug 2010</b>)<br/> -- Complete draft updated Cat III/II approval process (<b>Jul 2010</b>)<br/> -- Complete coordinated Draft SMGCS AC with ARP (<b>Sep 2010</b>)<br/> -- Complete Minimum Performance Standards for Advanced Vision Systems (<b>Sep 2010</b>)<br/> -- Complete coordinated draft of NPRM for EFVS to touchdown (<b>Jul 2010</b>)<br/> <b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (<b>2010</b>)</p>   |
| <p><b>OI 107118</b> Low Visibility/Ceiling Landing Operations</p>   | ■ | ■ | ■ | <p><b>AIR:</b> -- Cat III TSO C161/C162 (<b>2015</b>)<br/> -- AC20-VS Update (<b>2012</b>)<br/> <b>AFS:</b> -- Support safety assessments and risk analyses. Support the Working Group (WG) and Safety Risk Management Panel (SRMP). Perform modeling, simulations and analyses to validate risk assessments for proposed procedures. (<b>ongoing</b>)<br/> <b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (<b>2010</b>)</p>   |
| <p><b>OI 107119</b> Expanded Low Visibility Operations using Lower RVR Minima</p>   | ■ | ■ | ■ | <p><b>AIR:</b> -- Support AFS AC (<b>2010</b>)<br/> <b>AFS:</b> -- Complete proof of concept for using EFVS/EVS for low visibility (SMGCS) taxi operations (<b>Jun 2010</b>)<br/> -- Complete OSA and report on 1400 RVR minima for CAT I ILS (<b>May 2010</b>)<br/> -- Complete proof of concept using EFVS in lieu of centerline lights/low visibility takeoff (<b>Jun 2010</b>)<br/> -- Create Minimum Performance Standards for Advanced Vision Systems (<b>Sep 2010</b>)<br/> -- Complete coordinated draft of NPRM for EFVS to touchdown (<b>Jul 2010</b>)<br/> -- Complete proof of concept of Hybrid (Autoland + HUD) lower RVR credit (<b>Jun 2010</b>)<br/> <b>AOV:</b> -- Support Working Groups &amp; Program Office Approvals/Disapprovals for High Risk Safety Mitigations, when required (<b>2010</b>)</p>  |
| <p><b>OI 108105</b> Flow Corridors - Level 1 Static</p>   | ■ | ■ | ■ | <p><b>AIR:</b> -- Complete AC20 -138B (<b>Jul 2010</b>)<br/> -- Develop ADS-B In (Multi Aircraft Self Separation) (<b>TBD</b>)<br/> -- Develop SC-214 Data Comm TSO&amp;AC (<b>TBD</b>)<br/> <b>AFS:</b> -- Support safety assessments and risk analyses. Support the Working Group (WG) and Safety Risk Management Panel (SRMP). Perform modeling, simulations and analyses to validate risk assessments for proposed procedures. (<b>TBD</b>)<br/> <b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (<b>TBD</b>)</p>   |
| <p><b>OI 108106</b> Flow Corridors - Level 2 Dynamic</p>  | ■ | ■ | ■ | <p><b>AIR:</b> -- Complete AC20 -138B (<b>Jul 2010</b>)<br/> -- Develop ADS-B In (Multi Aircraft Self Separation) (<b>TBD</b>)<br/> -- Develop SC-214 Data Comm Standards (<b>TBD</b>)<br/> <b>AFS:</b> -- Support safety assessments and risk analyses. Support the Working Group (WG) and Safety Risk Management Panel (SRMP). Perform modeling' simulations and analyses to validate risk assessments for proposed procedures (<b>TBD</b>)<br/> <b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (<b>TBD</b>)</p>   |
| <p><b>OI 108209</b> Increase Capacity and Efficiency Using Area Navigation (RNAV) and Required Navigation Performance (RNP)</p> | ■ | ■ | ■ | <p><b>AIR:</b> -- Complete AC20 -138B (<b>Jul 2010</b>)<br/> <b>AFS:</b> -- Complete updated Order 8260.52A (<b>Apr 2010</b>)<br/> -- Complete draft RNP departure criteria to use down to RNP 1.0 (<b>Sep 2010</b>)<br/> -- Complete software validation website (<b>Feb 2010</b>)<br/> -- Complete RNAV and RNP SAAAR validation models (<b>Feb 2010</b>)<br/> -- Support new flight validation program and promoting review within 30 days of request (<b>TBD</b>)<br/> -- Complete FMC airframe data collection to support TERPs modeling programs (<b>Aug, 2010</b>)<br/> -- Complete support for Third Party vendors in RNP procedure development (<b>Sep 2010</b>)<br/> -- Provide oversight service to RNP SAAAR service providers (<b>Sep 2010</b>)<br/> -- Complete revising AC 90 -101A (<b>Sep 2010</b>)<br/> -- Complete evaluating use of GPS or WAAS equipment at required alternate airport (Sep 2010) --<br/> Support safety assessments and risk analyses. Support the Working Group (WG) and Safety Risk Management Panel (SRMP). Perform modeling, simulations and analyses to validate risk assessments for proposed procedures. (<b>ongoing</b>)<br/> <b>AOV:</b> -- Support Working Groups &amp; Program Office; High Risk Safety Mitigations (<b>2010</b>)</p> |
| <p><b>OI 109313</b> Environmentally and Energy Favorable Terminal Operations-Level 1</p>  | ■ | ■ | ■ | <p><b>AIR:</b> -- Complete AC20 -138B (<b>Jul 2010</b>)<br/> <b>AFS:</b> -- Revise Order 8260.3 to incorporate environmental framework (<b>2015</b>)<br/> <b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (<b>2011</b>)</p>   |
| <p><b>OI 107202</b> Low Visibility Surface Operations</p>   | ■ | ■ |   | <p><b>AIR:</b> -- Complete EFVS MASPS refresh (<b>Dec 2011</b>)<br/> -- Update AC20-VS (<b>2012</b>)<br/> <b>AFS:</b> -- Complete draft SMGCS AC (<b>Mar 2010</b>)<br/> -- Complete proof of concept using EFVS in lieu of centerline lights/low visibility takeoff (<b>Aug 2010</b>)<br/> -- Create Minimum Performance Standards for Advanced Vision Systems (<b>Sep 2010</b>)<br/> -- Complete coordinating draft NPRM for EFVS to touchdown (<b>Sep 2010</b>)</p>  |

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|-----------|--|---|---|---|--|
| OI 102108 | Oceanic In-Trail Climb and Descent   | ■ | ■ |   | <p><b>AIR:</b> -- Complete ADS-B Out AC (TBD)<br/> -- Develop ADS-B In (ITP) AC&amp;TSO (2011)<br/> -- Develop FANS 1/A AC20-140B (2012)<br/> <b>AFS:</b> -- Evaluate / validate safety assessments and risk analyses (ongoing)<br/> -- Update Order 8900.1 (as needed)</p>  |
| OI 102123 | ADS-B Separation   | ■ | ■ |   | <p><b>AIR:</b> -- (Current)<br/> <b>AFS:</b> -- Deliver final rule to OST in accordance with schedule approved by rulemaking management council (TBD)<br/> -- Complete review/comment on SRMD to determine ADS-B separation standards at key sites (Apr 2010)<br/> -- Complete AC and Order 8900.1 guidance (Aug 2010)<br/> -- Complete developing interactive video training for inspectors (Jul 2010)<br/> -- Complete AVS specific items on the ISR checklist and obtain AVS signature (Sep 2010)</p> |
| OI 102136 | Reduced Oceanic Separation and Enhanced Procedures   | ■ | ■ |   | <p><b>AIR:</b> -- Complete AC20-140A (2010)<br/> <b>AFS:</b> -- Support safety assessments and risk analyses (TBD)</p>   |
| OI 101103 | Provide Interactive Flight Planning from Anywhere  | ■ |   | ■ | <p><b>AIR:</b> -- Develop SC-214 Data Comm Standards (TBD)<br/> -- Complete AC20-138B (Jul 2010)<br/> -- Develop SWIM AC (TBD)<br/> <b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2013)</p>  |
| OI 102138 | Expanded Radar-like Services to Secondary Airports   | ■ |   | ■ | <p><b>AIR:</b> -- Complete ADS-B AC (Apr 2010)<br/> <b>AFS:</b> -- Support Working Group (WG) and Safety Risk Management Panel (SRMP). Perform modeling, simulations and analyses to validate risk assessments for proposed procedures. (TBD)<br/> <b>AOV:</b> -- Support Working Groups &amp; Program Office Approvals/Disapprovals for High Risk Safety Mitigations, when required (TBD)</p>   |
| OI 102406 | Provide Full Surface Situation Information   | ■ |   | ■ | <p><b>AIR:</b> -- Complete ADS-B In TSO&amp;AC (TBD)<br/> <b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2011)</p>  |
| OI 103116 | Initial Improved Weather Information From Non-Ground Based Sensors   | ■ |   | ■ | <p><b>AIR:</b> -- Support ATO-Weather (ongoing)<br/> <b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2011)</p>   |
| OI 103305 | On-Demand NAS Information  | ■ |   | ■ | <p><b>AIR:</b> -- Develop SWIM AC (TBD)<br/> -- Develop SC-214 Data Comm Standards (TBD)<br/> <b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2012)</p>  |
| OI 104117 | Improved Management of Arrival/Surface/Departure Flow Operations   | ■ |   | ■ | <p><b>AIR:</b> -- Develop SC-214 DataComm Standards (TBD)<br/> <b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (TBD)</p>  |
| OI 104122 | Integrated Arrival/Departure Airspace Management   | ■ |   | ■ | <p><b>AIR:</b> -- Complete AC20-138B (Jul 2010)<br/> <b>AFS:</b> -- Support safety assessments and risk analyses. Support the Working Group (WG) and Safety Risk Management Panel (SRMP). Perform modeling, simulations and analyses to validate risk assessments for proposed procedures (TBD)<br/> <b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2011)</p>   |
| OI 109311 | Environmentally and Energy Favorable En Route Operations-Level 1   | ■ |   | ■ | <p><b>AIR:</b> -- Complete AC20-138B (Jul 2010)<br/> <b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2011)</p>   |
| OI 109315 | Implement NextGen Environmental Engine and Aircraft Technologies-Level 1   | ■ |   |   | <p><b>AIR:</b> -- Review ANE, ANM (TBD)</p>  |
| OI 109316 | Increased Use of Alternative Aviation Fuels  | ■ |   |   | <p><b>AIR:</b> -- Review ANE (TBD)</p>   |
| OI 102140 | Wake Turbulence Mitigation for Departures (WTMD): Wind-Based Wake Procedures   |   | ■ | ■ | <p><b>AFS:</b> -- Support the Working Group (WG) and Safety Risk Management Panel (SRMP). Perform modeling, simulations and analyses to validate risk assessments for proposed procedures (ongoing)<br/> <b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2010)</p>   |
| OI 102142 | Efficient Metroplex Merging and Spacing  |   | ■ | ■ | <p><b>AFS:</b> -- (TBD)<br/> <b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (TBD)</p>  |
| OI 102144 | Wake Turbulence Mitigation for Arrivals: CSPRs   |   | ■ | ■ | <p><b>AFS:</b> -- Participate in SRMP and support risk analyses with computer modeling, simulations and analyses (ongoing)<br/> <b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2013)</p>  |
| OI 102145 | Single Runway Arrival Wake Mitigation  |   | ■ | ■ | <p><b>AFS:</b> -- Support the Working Group (WG) and Safety Risk Management Panel (SRMP). Perform modeling, simulations and analyses to validate risk assessments for proposed procedures (ongoing)<br/> <b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (TBD)</p>  |
| OI 102151 | Single Runway Departure Wake Mitigation  |   | ■ | ■ | <p><b>AFS:</b> -- Support the Working Group (WG) and Safety Risk Management Panel (SRMP). Perform modeling, simulations and analyses to validate risk assessments for proposed procedures (ongoing)<br/> <b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (TBD)</p>  |
| OI 102409 | Provide Surface Situation to Pilots, Service Providers and Vehicle Operators for Near-Zero-Visibility Surface Operations |   | ■ | ■ | <p><b>AFS:</b> -- Complete SMGCS AC (2010)<br/> <b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2012)</p>  |
| OI 103119 | Initial Integration of Weather Information into NAS Automation and Decision Making                                       |   | ■ | ■ | <p><b>AFS:</b> -- Update 8900.1 vol 3 Ch 26 (Sep 2010)<br/> -- Support NextGen Aviation Weather WGs (Q3 2010)<br/> -- Support Weather Technology in the Cockpit (ongoing)<br/> <b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2010)</p>   |

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|---|---|---|--|
| OI 103121 Full Improved Weather Information and Dissemination   | ■ | ■ | AFS: -- Update Order 8900.1 vol 3 Ch 26 (as required)<br>-- Support NextGen Aviation Weather WGs (Q3 2010)<br>-- Support Weather Technology in the Cockpit (ongoing)<br>AOV: -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (TBD)  |
| OI 103123 Full Integration of Weather Information into NAS Automation and Decision Making               | ■ | ■ | AFS: -- Update Order 8900.1 vol 3 Ch 26 (as required)<br>-- Support NextGen Aviation Weather WGs (Q3 2010)<br>-- Support Weather Technology in the Cockpit (ongoing)<br>AOV: -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2013)   |
| OI 104125 Integrated Arrival/Departure and Surface Traffic Management for Metroplex                     | ■ | ■ | AFS: -- Support the Working Group (WG) and Safety Risk Management Panel (SRMP). Perform modeling, simulations and analyses to validate risk assessments for proposed procedures (TBD)<br>AOV: -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (TBD)   |
| OI 105104 NAS-Wide Sector Demand Prediction and Resource Planning                                       | ■ | ■ | AFS: -- Develop guidance and Operational Approval (as required)<br>AOV: -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2011)  |
| OI 107105 CAT 1 Precision Approach (GLS)  | ■ | ■ | AFS: -- Draft combination of AC 120-29A and AC 120-28D (Sep 2010)<br>-- Update Order 8900.1 guidance (Sep 2010)<br>-- Update OpSpec C052 (Sep 2010)<br>AOV: -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (TBD)   |
| OI 109309 Implement EMS Framework - Level 1   | ■ | ■ | AFS: -- Revise Order 8260.3 to incorporate environmental framework (TBD)<br>AOV: Support as needed (2011)  |
| OI 109310 Implement EMS Framework-Level 2   | ■ | ■ | AFS: -- Revise Order 8260.3 to incorporate environmental framework (TBD)<br>AOV: -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (TBD)  |
| OI 109314 Environmentally and Energy Favorable Terminal Operations-Level 2                              | ■ | ■ | AFS: -- Support the Working Group (WG) and Safety Risk Management Panel (SRMP). Perform modeling, simulations and analyses to validate risk assessments for proposed procedures (TBD)<br>AOV: Support as needed (TBD)  |
| OI 109402 Remotely Staffed Tower Services   | ■ | ■ | AFS: -- Incorporate operator guidance with revision to AIM (TBD)<br>AOV: -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (TBD)  |
| OI 109306 Increased International Cooperation for Aviation Safety                                       | ■ | ■ | AFS: -- Provide US technical participation and leadership in ICAO meetings to achieve US objectives (ongoing)<br>-- Provide ongoing representation and support to the ICAO PBN Study Group, Separation and Airspace Safety Panel and also the Operations Panel (ongoing)<br>-- Participate in PBN related international workshop (ongoing)<br>-- Participate in international Wake Vortex Steering and Working Groups (ReCat, A380, B747-8) (ongoing)<br>AVP: -- Lead and manage an international outreach effort to harmonize civil aviation authority SMS and SPS activities (ongoing) |
| OI 109303 ASIAs - Information Sharing and Emergent Trend Detection                                      | ■ | ■ | AOV: -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2011)<br>AVP: -- Lead and manage the development, operation, and continuous improvement of the ASIAs capability (ongoing)<br>-- Lead and manage the development of a capability to detect emergent system safety trends (ongoing)   |
| OI 109304 Enhanced Aviation Safety Information Analysis and Sharing                                     | ■ | ■ | AOV: -- Support Working Groups & Program Office (2012)<br>AVP: -- Lead and manage the development, operation, and continuous improvement of the ASIAs capability (ongoing)   |
| OI 109305 Improved Safety for NextGen Evolution   | ■ | ■ | AOV: -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (TBD)<br>AVP: -- Lead and manage agency-wide implementation of an interoperable Safety Management System (SMS) (ongoing)   |
| OI 109307 Improved Safety Across Air Transportation System Boundaries                                   | ■ | ■ | AOV: -- Support Working Groups & Program Office (TBD)<br>AVP: -- Lead and manage agency-wide implementation of an interoperable Safety Management System (SMS) (ongoing)   |
| OI 109308 Enhanced (Automated) Aviation Safety Information Sharing and Analysis Scope and Effectiveness | ■ | ■ | AOV: -- Support Working Groups & Program Office (TBD)<br>AVP: -- Lead and manage the development, operation, and continuous improvement of the ASIAs capability (ongoing)  |
| OI 101102 Provide Full Flight Plan Constraint Evaluation with Feedback                                  | ■ | ■ | AOV: -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2011)   |
| OI 101202 Trajectory Flight Data Management   | ■ | ■ | AOV: -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (TBD)  |
| OI 102114 Initial Conflict Resolution Advisories  | ■ | ■ | AFS: -- Support the Working Group (WG) and Safety Risk Management Panel (SRMP). Perform modeling, simulations and analyses to validate risk assessments for proposed procedures (TBD)<br>AOV: -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2011)  |
| OI 102137 Automation Support for Mixed Environments   | ■ | ■ | AOV: -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2011)   |
| OI 104102 Flexible Entry Times for Oceanic Tracks   | ■ | ■ | AOV: -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2010)   |
| OI 104120 Point-in-Space Metering   | ■ | ■ | AOV: -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2011)   |
| OI 105208 Traffic Management Initiatives with Flight Specific Trajectories                              | ■ | ■ | AFS: -- Support safety assessments and risk analyses. Support Working Group (WG) and Safety Risk Management Panel (SRMP). Perform modeling, simulations and analyses to validate risk assessments for proposed procedures (ongoing)<br>AOV: -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2010)  |
| OI 105302 Continuous Flight Day Evaluation  | ■ | ■ | AOV: -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2011)   |

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|---|--|--|---|---|
| <b>OI 108203</b> Expand Use of RNAV/RNP Procedures  |  |  | ■ | <p><b>AFS:</b> -- Support safety assessments and risk analyses. Support Working Group (WG) and Safety Risk Management Panel (SRMP). Perform modeling, simulations and analyses to validate risk assessments for proposed procedures (<b>ongoing</b>)</p> <p><b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (<b>TBD</b>)</p>     |
| <b>OI 108206</b> Flexible Airspace Management   |  |  | ■ | <p><b>AFS:</b> -- Support safety assessments and risk analyses. Support the Working Group (WG) and Safety Risk Management Panel (SRMP). Perform modeling, simulations and analyses to validate risk assessments for proposed procedures (<b>ongoing</b>)</p> <p><b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (<b>TBD</b>)</p> |
| <b>OI 108212</b> Improved Management of Airspace for Special Use  |  |  | ■ | <b>AOV:</b> -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required ( <b>2011</b> )  |
| <b>OI 108213</b> Dynamic Airspace Performance Designation   |  |  | ■ | <b>AOV:</b> -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required ( <b>TBD</b> )   |
| <b>OI 109302</b> Operational Security Capability for Threat Detection and Tracking, NAS Impact Analysis, and Risk-Based Assessment          |  |  | ■ | <b>AOV:</b> -- Support Working Groups & Program Office ( <b>2013</b> )  |
| <b>OI 109312</b> Environmentally and Energy Favorable En Route Operations - Level 2   |  |  | ■ | <p><b>AFS:</b> -- Support the Working Group (WG) and Safety Risk Management Panel (SRMP). Perform modeling, simulations and analyses to validate risk assessments for proposed procedures (<b>TBD</b>)</p> <p><b>AOV:</b> -- Support as needed (<b>as required</b>)</p>   |
| <b>OI 109317</b> Operational Security Capability with Dynamic Flight Risk Assessment for Improved Security Airspace Planning and Management |  |  | ■ | <b>AOV:</b> -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required ( <b>TBD</b> )   |
| <b>OI 109404</b> Automated Virtual Towers   |  |  | ■ | <b>AOV:</b> -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required ( <b>TBD</b> )   |



**APPENDIX C**

**NEXTGEN IMPLEMENTATION PLAN (NGIP)  
RELATED ACTIVITY**

## APPENDIX C

### NEXTGEN IMPLEMENTATION PLAN (NGIP) RELATED ACTIVITY

Appendix B of the Implementation Plan describes transformational programs, airspace enhancements, and solution sets. The following brief explanations provide insight as to how AVS integrates into the overall NextGen plan.

- Transformational Programs: provide the infrastructure needed to achieve NextGen. AVS is involved in these transformational programs as listed in the subsequent table.
  - Automatic Dependent Surveillance-Broadcast
  - System Wide Information Management (SWIM)
  - Data Communications (Data Comm)
  - NextGen Network Enabled Weather
  - NAS Voice Switch
  - Collaborative Air Traffic Management Technologies (CATMT)
- Airspace Enhancements and Procedures: consist of four projects, for which AVS provides criteria and approvals for RNAV, RNP and LPV
  - Airspace Enhancements (in specific geographic locations)
  - RNAV and RNP procedure development
  - Localizer Performance with Vertical Guidance (LPV)/Localizer Performance (LP) Procedures
  - Airfield Development (at specific airports)
- NextGen Solution Sets
  - Initiate Trajectory-Based Operations (TBO). The Trajectory Based Operations solution set focuses primarily on high-altitude cruise operations in en route airspace. TBO provides the capabilities, decision-support tools and automation to manage aircraft movement by trajectory.
  - Increase Arrivals/Departures at High Density Airports (HD). The HD Airports solution set provides capabilities improving arrival and departure capacity for multiple airports and runways in high-demand airspace. This solution set takes advantage of performance based navigation, traffic flow management capabilities in the Collaborative Air Traffic Management solution set and builds on the capabilities of the Flexible Terminals and Airports solution set.
  - Increase Flexibility in the Terminal Environment (FLEX). The Flexible Terminals and Airports solution set provides capabilities necessary to increase access to and manage the separation of aircraft in the terminal environment at and around all airports – large and small. FLEX addresses initial surface management capabilities, procedures that improve access to runways in low visibility and new automation supporting and maximizing the use of available data to enable surface trajectory-based operations.

- **Improve Collaborative Air Traffic Management (CATM).** The CATM solution set provides capabilities to improve traffic flow management system-wide as well as at the tactical, or location-based, level. This solution set focuses on delivering services to accommodate flight operator preferences to the maximum extent possible. CATM develops capabilities that support both system-level (strategic) and location-specific (tactical) traffic flow management.
- **Reduce Weather Impact (RWI).** The Reduce Weather Impact solution set supports the integration of a broad range of weather information into air traffic decision making. In the mid-term, new operational improvements and technologies will mitigate the effects of weather resulting in safer and more efficient and predictable day-to-day NAS operations.
- **Improve Safety, Security and Environmental Performance (SSE).** Improving safety, security and the environment is an inherent part of the FAA's overall mission, and embedded in the activities of individual programs agency-wide. This solution set involves activities directly related to ensuring that NextGen systems contribute to steadily reducing risks to safety and information security while mitigating adverse effects on the environment and ensuring environmental protection that allows sustained aviation growth.
- **Transform Facilities (FAC).** The Transform Facilities solution set focuses on capabilities that enable a network of integrated facilities designed to support the delivery of safer and more efficient operations system-wide. It enables a facilities infrastructure that supports NextGen capabilities as they are integrated into the current system and as they mature over time.

The following table delineates AVS tasks linking the FAA NextGen Implementation Plan Appendix B (NextGen Commitments and Targets) to all Operational Improvements previously listed. It provides a crosscheck against near-term FAA commitments listed in Appendix B of the Implementation Plan, available at <http://www.faa.gov/nextgen/>. Although System Development (SD) is not one of the seven solution sets, it is listed as a category for projects having broad applicability across the solution sets and to NextGen overall.

| OI Number/Title   | Solution Set | NGIP                      |                             |                            | AIR-AFS-AOV-AVP NextGen Activity/Target  |
|---|--------------|---------------------------|-----------------------------|----------------------------|--|
|   |              | Transformational Programs | Airspace Enhance/Procedures | Solution Set Plans/Targets |  |
| <b>OI 101102</b> Provide Full Flight Plan Constraint Evaluation with Feedback     | CATM         | ■                         |                             | ■                          | <b>AOV:</b> -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2011)  |
| <b>OI 105208</b> Traffic Management Initiatives with Flight Specific Trajectories | CATM         | ■                         |                             | ■                          | <b>AFS:</b> -- Support safety assessments and risk analyses. Support Working Group (WG) and Safety Risk Management Panel (SRMP). Perform modeling, simulations and analyses to validate risk assessments for proposed procedures (ongoing)<br><b>AOV:</b> -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2010)  |
| <b>OI 105302</b> Continuous Flight Day Evaluation                                 | CATM         | ■                         |                             | ■                          | <b>AOV:</b> -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2011)  |
| <b>OI 108212</b> Improved Management of Airspace for Special Use                  | CATM         |                           | ■                           | ■                          | <b>AOV:</b> -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2011)  |
| <b>OI 102144</b> Wake Turbulence Mitigation for Arrivals: CSPRs                   | Flex         | ■                         |                             | ■                          | <b>AFS:</b> -- Participate in SRMP and support risk analyses with computer modeling, simulations and analyses (ongoing)<br><b>AOV:</b> -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2013)   |
| <b>OI 103207</b> Improved Runway Safety Situational Awareness for Controllers     | Flex         |                           |                             | ■                          | <b>AIR:</b> Current<br><b>AFS:</b> Current<br><b>AOV:</b> Current  |
| <b>OI 103208</b> Improve Runway Safety Situational Awareness for Pilots           | Flex         | ■                         |                             | ■                          | <b>AIR:</b> -- Complete ADS-B out Surface TSO& AC (TBD)<br>-- Complete CDTI with Alerting (ADS-B In) (2010)<br><b>AFS:</b> -- Complete draft SMGCS AC (Mar 2010)<br><b>AOV:</b> -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2010)  |
| <b>OI 104124</b> Use Optimized Profile Descent                                    | Flex         |                           |                             | ■                          | <b>AIR:</b> -- Complete AC20-138B (Jul 2010)<br><b>AFS:</b> -- Support general oversight of optimized profile descent (ongoing)<br><b>AOV:</b> -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (TBD)  |
| <b>OI 104207</b> Enhanced Surface Traffic Operations                              | Flex         |                           |                             | ■                          | <b>AIR:</b> -- Complete AC20-140A (TBD)<br>-- Develop SC-214 Data Comm Standards (TBD)<br><b>AFS:</b> -- Complete draft combination of AC 120-29A and AC 120-28D (Sep 2010)<br>-- Complete update Order 8900.1 guidance (Sep 2010)<br>-- Complete update OpSpec C052 (Sep 2010)<br>-- Support safety assessments and risk analyses. Support the Working Group (WG) and Safety Risk Management Panel (SRMP). Perform modeling, simulations and analyses to validate risk assessments for proposed procedures (ongoing)<br><b>AOV:</b> -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2010)   |
| <b>OI 107107</b> Ground Based Augmentation System (GBAS) Precision Approaches     | Flex         |                           |                             | ■                          | <b>AIR:</b> -- Complete Cat I TSO C161a, C162a (TBD)<br>-- Update Cat III: TSO C161/C162 (2015)<br><b>AFS:</b> -- Complete draft combination of AC 120-29A and AC 120-28D (Sep 2010)<br>-- Complete update Order 8900.1 guidance (Sep 2010)<br>-- Complete update OpSpec C052 (Sep 2010)<br><b>AOV:</b> -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2010)  |
| <b>OI 107117</b> Low Visibility/Ceiling Approach Operations                       | Flex         |                           |                             | ■                          | <b>AIR:</b> -- Complete EFVS, SVS MASPS refresh (Dec 2011)<br>-- Develop Mid-Term ACs (2012-2014)<br>-- Update GBAS TSO C161 (2012-2013)<br><b>AFS:</b> -- Specify airport criteria for 500 RVR SMGCS operations (TBD)<br>-- Complete draft combination of AC 120-29A and AC 120-28D (Sep 2010)<br>-- Complete draft new OpSpecs for Cat III (Aug 2010)<br>-- Complete draft updated Cat II/III approval process (Jul 2010)<br>-- Complete coordinated Draft SMGCS AC with ARP (Sep 2010)<br>-- Complete Minimum Performance Standards for Advanced Vision Systems (Sep 2010)<br>-- Complete coordinated draft of NPRM for EFVS to touchdown (Jul 2010)<br><b>AOV:</b> -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2010) |
| <b>OI 102141</b> Improve Parallel Runway Operations                               | HD           |                           | ■                           | ■                          | <b>AIR:</b> -- Develop TSO & AC (2014)<br><b>AFS:</b> -- Develop Research & Simulation Plans for CSPO/NTZ changes (Jul 2010)<br>-- Support SRMP: New Runway Spacing Criteria (Sep 2010)<br>-- Complete analysis of ILS Simultaneous Approaches (Aug 2010)<br>-- Complete research of current CSPO separations incorporating RNAV (GPS) (Sep 2010)<br><b>AOV:</b> -- Support Working Groups & Program Office Approvals/Disapprovals for High Risk Safety Mitigations, when required (2011)  |
| <b>OI 104117</b> Improved Management of Arrival/Surface/Departure Flow Operations | HD           | ■                         |                             | ■                          | <b>AIR:</b> -- Develop SC-214 DataComm Standards (TBD)<br><b>AOV:</b> -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (TBD)   |
| <b>OI 104123</b> Time Based Metering Using RNAV and RNP Route Assignments         | HD           |                           | ■                           | ■                          | <b>AIR:</b> -- Complete AC20-138B (Jul 2010)<br><b>AFS:</b> -- Support general oversight of time based metering (ongoing)<br><b>AOV:</b> -- Support Working Groups & Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2010)   |
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| OI 104209 | Initial Surface Traffic Management  | HD  |   | ■ | <p><b>AIR:</b> N/A<br/> <b>AFS:</b> N/A<br/> <b>AOV:</b> N/A</p>   |
| OI 109303 | ASIAS - Information Sharing and Emergent Trend Detection  | SD  |   | ■ | <p><b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2011)<br/> <b>AVP:</b> -- Lead and manage the development, operation, and continuous improvement of the ASIAS capability (ongoing)<br/> -- Lead and manage the development of a capability to detect emergent system safety trends (ongoing)</p>  |
| OI 109304 | Enhanced Aviation Safety Information Analysis and Sharing   | SD  |   | ■ | <p><b>AOV:</b> -- Support Working Groups &amp; Program Office (2012)<br/> <b>AVP:</b> -- Lead and manage the development, operation, and continuous improvement of the ASIAS capability (ongoing)</p>  |
| OI 109309 | Implement EMS Framework - Level 1   | SD  |   | ■ | <p><b>AFS:</b> -- Revise Order 8260.3 to incorporate environmental framework (TBD)<br/> <b>AOV:</b> Support as needed (2011)</p>   |
| OI 109311 | Environmentally and Energy Favorable En Route Operations-Level 1  | SD  |   | ■ | <p><b>AIR:</b> -- Complete AC20-138B (Jul 2010)<br/> <b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2011)</p>   |
| OI 109313 | Environmentally and Energy Favorable Terminal Operations-Level 1  | SD  |   | ■ | <p><b>AIR:</b> -- Complete AC20 -138B (Jul 2010)<br/> <b>AFS:</b> -- Revise Order 8260.3 to incorporate environmental framework (2015)<br/> <b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2011)</p>  |
| OI 109315 | Implement NextGen Environmental Engine and Aircraft Technologies-Level 1                                | SD  |   | ■ | <p><b>AIR:</b> -- Review ANE, ANM (TBD)</p>  |
| OI 109316 | Increased Use of Alternative Aviation Fuels   | SD  |   | ■ | <p><b>AIR:</b> -- Review ANE (TBD)</p>   |
| OI 109402 | Remotely Staffed Tower Services   | SD  |   | ■ | <p><b>AFS:</b> -- Incorporate operator guidance with revision to AIM (TBD)<br/> <b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (TBD)</p>   |
| OI 106202 | Enhance Emergency Alerting  | SSE | ■ | ■ | <p><b>AIR:</b> -- ADS-B AC (Apr 2010)<br/> <b>AFS:</b> -- Incorporate operator guidance with revision to AIM (TBD)<br/> <b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2010)</p>  |
| OI 102108 | Oceanic In-Trail Climb and Descent  | TBO | ■ | ■ | <p><b>AIR:</b> -- Complete ADS-B Out AC (TBD)<br/> -- Develop ADS-B In (ITP) AC&amp;TSO (2011)<br/> -- Develop FANS 1/A AC20-140B (2012)<br/> <b>AFS:</b> -- Evaluate / validate safety assessments and risk analyses (ongoing)<br/> -- Update Order 8900.1 (as needed)</p>  |
| OI 102137 | Automation Support for Mixed Environments   | TBO |   | ■ | <p><b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2011)</p>   |
| OI 104120 | Point-in-Space Metering   | TBO |   | ■ | <p><b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2011)</p>   |
| OI 108209 | Increase Capacity and Efficiency Using Area Navigation (RNAV) and Required Navigation Performance (RNP) | TBO | ■ | ■ | <p><b>AIR:</b> -- Complete AC20 -138B (Jul 2010)<br/> <b>AFS:</b> -- Complete updated Order 8260.52A (Apr 2010)<br/> -- Complete draft RNP departure criteria to use down to RNP 1.0 (Sep 2010)<br/> -- Complete software validation website (Feb 2010)<br/> -- Complete RNAV and RNP SAAAR validation models (Feb 2010)<br/> -- Support new flight validation program and promoting review within 30 days of request (TBD)<br/> -- Complete FMC airframe data collection to support TERPs modeling programs (Aug 2010)<br/> -- Complete support for Third Party vendors in RNP procedure development (Sep 2010)<br/> -- Provide oversight service to RNP SAAAR service providers (Sep 2010)<br/> -- Complete revising AC 90 -101A (Sep 2010)<br/> -- Complete evaluating use of GPS or WAAS equipment at required alternate airport (Sep 2010) -- Support safety assessments and risk analyses. Support the Working Group (WG) and Safety Risk Management Panel (SRMP). Perform modeling, simulations and analyses to validate risk assessments for proposed procedures. (ongoing)<br/> <b>AOV:</b> -- Support Working Groups &amp; Program Office; High Risk Safety Mitigations (2010)</p> |
| OI 103119 | Initial Integration of Weather Information into NAS Automation and Decision Making                      | Wx  |   | ■ | <p><b>AFS:</b> -- Update 8900.1 vol 3 Ch 26 (Sep 2010)<br/> -- Support NextGen Aviation Weather WGs (Q3 2010)<br/> -- Support Weather Technology in the Cockpit (ongoing)<br/> <b>AOV:</b> -- Support Working Groups &amp; Program Office; Approvals/Disapprovals for High Risk Safety Mitigations, when required (2010)</p>   |