

# Federal Aviation Administration Strategic Initiatives 2014-2018



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# Introduction

# FAA'S MISSION, VISION, AND VALUES

#### Mission

Provide the safest, most efficient aerospace system in the world.

#### Vision

Transform the aviation system to reflect the highest standards of safety and efficiency and be a model for the world. The FAA will bring about this transformation by fostering innovation in our workforce and in how we serve our stakeholders and the American people.

This vision is brought to life in the four strategic priorities for the agency:

- 1. Make aviation safer and smarter
- 2. Deliver benefits through technology and infrastructure
- 3. Enhance global leadership
- 4. Empower and innovate with the FAA's people

#### Values

The FAA will support the mission and achieve the vision using a values-based approach. At the FAA:

- *Safety is our passion.* We work so all air and space travelers arrive safely at their destinations.
- *Excellence is our promise.* We seek results that embody professionalism, transparency and accountability.
- *Integrity is our touchstone.* We perform our duties honestly, with moral soundness, and with the highest level of ethics.
- *People are our strength.* Our success depends on the respect, diversity, collaboration, and commitment of our workforce.
- *Innovation is our signature.* We foster creativity and vision to provide solutions beyond today's boundaries.

#### THE STRATEGIC IMPERATIVE

Over the next four years, the FAA will lay the foundation for the aerospace system of the future. As an agency, the FAA has a tremendous opportunity to make a difference for stakeholders, while addressing the challenges that the changing industry presents.

The aerospace industry is growing more complex, and is not the same industry we regulated in decades past. At the same time, there is more safety data than ever before. This provides the FAA with the opportunity to be more proactive about safety and use safety management principles to make smarter, risk-based decisions throughout the agency and with industry and global stakeholders. This will make our aviation system safer and smarter and raise the bar on safety.

The nation's air traffic system is based on infrastructure that was largely built 50 years ago and is out of balance with our stakeholders' changing needs. NextGen is redefining the NAS and is delivering benefits to system users, such as reduced fuel costs, reduced delays, and reduced environmental impact. Great technological advancements require the FAA to safely integrate new types of user technologies, such as unmanned aircraft systems and commercial space vehicles, into the airspace. As we accommodate new services, the FAA must rationalize and rebalance existing services while modernizing our existing infrastructure in order to reduce costs and become more efficient in the long run.

Aviation is a global industry and millions of Americans travel overseas every year. The FAA must continue America's heritage as world leaders in aviation and set the standard for others to measure against. Aviation was invented in America, but other nations have seen their aviation systems grow dramatically and have become significantly more influential on the international stage. The FAA needs to be at the table to shape international standards to improve aviation safety and efficiency around the world.

Meeting this strategic challenge requires that the FAA harness the collective strength of the agency's employees. The FAA's people are the ultimate drivers of success, which means the FAA must attract and develop the best and the brightest talent with the appropriate leadership and technical skills to undertake this transformation. The FAA's workforce is changing and is in the midst of a retirement wave, which presents both challenges and opportunities. There is significant work to do to set the foundation to empower and innovate with the FAA's people.

This is a bold aspiration for the FAA, and will span beyond the next four years. However, we are committed to seeing measurable and steadfast progress toward this vision by 2018. The rapidly changing industry, the technological opportunities, the uncertain fiscal environment, an evolving workforce, and the global backdrop comprise a compelling case for transformational change, and that is what the FAA expects to achieve.

# FAA STRATEGIC PRIORITIES AND PRIORITY INITIATIVES

FAA Strategic Priorities	Administrator Priority Initiatives	<b>Related Sub-initiatives</b>
Make aviation safer and smarter	<b>Risk-Based Decision Making:</b> Build on safety management principles to proactively address emerging safety risk by using consistent, data-informed approaches to make smarter, system-level, risk-based decisions	<ul> <li>Improve standardization, data access, and modeling integration</li> <li>Enhance decision making process</li> <li>Redefine oversight model for industry</li> </ul>
Deliver benefits through technology and infrastructure	National Airspace System (NAS): Lay the foundation for the NAS of the future by achieving prioritized NextGen benefits, integrating new user entrants, and delivering more efficient, streamlined services	<ul> <li>Focus to achieve the benefits of NextGen</li> <li>Integrate new user entrants (unmanned aircraft and commercial space)</li> <li>Right-size the NAS</li> </ul>
Enhance global leadership	<b>Global Leadership:</b> Improve safety, air traffic efficiency, and environmental sustainability across the globe through an integrated, data-driven approach that shapes global standards, enhances collaboration and harmonization, and better targets FAA resources and efforts	<ul> <li>Transform our internal structure</li> <li>Develop an integrated, data-driven approach to international activities</li> <li>Ensure global interoperability of NextGen</li> <li>Place international resources strategically</li> </ul>
Empower and innovate with the FAA's people	Workforce of the Future: Prepare FAA's human capital for the future, by identifying, recruiting, and training a workforce with the leadership, technical, and functional skills to ensure the U.S. has the world's safest and most productive aviation sector	<ul> <li>Leadership Development</li> <li>Skills Identification</li> <li>Skills Development</li> <li>Attracting Talent</li> </ul>

# Chapter 1: Risk-based decision making

Through this initiative, the FAA will build on safety management principles to proactively address emerging safety risk by using consistent, data-informed approaches to make smarter, system-level, risk-based decisions.

# 1.1. CONTEXT

The aviation landscape has changed dramatically over the last decade, and several factors in particular are increasing the complexity of the industry and introducing different types of safety risk into the aerospace system. These factors include new aerospace designs and technologies (e.g., Unmanned Aircraft Systems (UAS)), changes in the FAA's surveillance and oversight model (e.g., designee management programs), and different business models for the design and manufacture of aircraft and products (e.g., supply chains). In addition, fiscal constraints compel the FAA to use its resources more effectively and ensure they are directed at areas with the highest safety risk. Because commercial aviation accidents are becoming rare occurrences, the FAA needs to identify and mitigate precursors to accidents (i.e., safety risk) to manage aviation safety.

The FAA has built the foundation to address these challenges by developing and implementing a Safety Management System (SMS). The SMS is composed of four components—Safety Policy, Safety Risk Management, Safety Assurance, and Safety Promotion—that enable better informed decisions from a safety perspective.

This risk-based decision making initiative flows from these SMS components, builds on existing processes, and directly addresses the challenges faced by the FAA. It will increase safety and efficiency by taking advantage of the growing availability of safety data and the development of powerful analytical capabilities to systematically integrate the management of safety risk into decision making.

# **1.2. ASPIRATION**

In the face of growing complexity throughout the industry, this initiative aims to make the safest and most efficient aerospace system in the world even safer and more efficient. Through increased sharing of safety data among FAA organizations, industry, and international peers, a broader spectrum of data will become available. By analyzing that data, using SMS principles, we will identify emerging hazards and predict the associated safety risk. We will coordinate and share the resulting information with the decisionmakers, allowing those people who are in the best position to manage the safety risk to do so in order to make our aerospace system even safer. By acting in an integrated manner with industry and global partners to transform our safety system, we will be able to identify hazards and mitigate their associated risk before they become accidents.

# **1.3. MEASURES OF SUCCESS**

We will measure the success of this initiative through a combination of traditional measures and additional metrics that need to be developed to track and measure safety risk.

#### Outcome measures

- Decreased safety risk (measure to be developed)
- Decreased commercial fatality rate
- Prioritized resources based on safety risk

#### Process measures

- Number of cross-organizational decisions made using safety data
- Number of FAA organizations with safety data-informed decision processes

# **1.4. PROGRAMMATIC APPROACH**

This initiative will take an evolutionary approach to integrating safety data into decision making through three targeted sub-initiatives. Through the risk-based decision making initiative, we will achieve significant impact over the next five years and beyond.

To improve data quality and analytics internally, with industry, and internationally, we will establish common data standards, align on modeling assumptions in systems that emulate and predict safety risk in the system, and increase data sharing. We will develop the functional requirements and competencies to ensure that our workforce has the necessary safety data and risk analysis capabilities.

To drive risk-based decision making across the agency, we will develop several targeted pilot implementations on high impact cross-organizational issues and implement safety risk mitigations. We will then apply lessons learned to the rollout of these mitigations across the agency. In addition, we will support the implementation of risk-based decision making by designing and implementing targeted changes to our SMS governance model to accommodate the changing roles and responsibilities of decision makers.

To enable a system-wide increase in safety and efficiency, we will redefine our safety oversight model. We will support SMS rollout within industry, including the development of new surveillance and oversight models. Additionally we will sponsor outreach to facilitate the sharing and use of best practices and lessons learned among, and outside, aviation industry segments.

The FAA will build upon previous and current activities focused on development and implementation of SMS in industry. The FAA has current rulemaking projects to pursue SMS. In addition, the FAA has sponsored pilot projects to test implementation of SMS in many types of organizations, including airports, air carriers, maintenance organizations, and aircraft and parts design and manufacturers. The FAA also continues to support voluntary implementation of SMS and sharing best practices and lessons learned through the Safety Management Focus Group sponsored by the Flight Standards Service.

# **1.4.1. SUB-INITIATIVES AND ACTIVITIES**

This initiative will be carried out through the following sub-initiatives and underlying activities:

- 1. Improve standardization, data access, & modeling integration
  - a. Establish common data taxonomies to be used consistently across the FAA, with industry, and internationally
  - b. Align modeling assumptions in systems that simulate and predict NAS safety risks
  - c. Obtain greater access to sources of data and improve the ability to share data both internally and external to the FAA
  - d. Establish an agency-wide tool to track hazards and mitigation outcomes
  - e. Develop functional requirements and competencies for safety data and risk analytics workforce and identify current personnel with relevant skills
- 2. Enhance decision making process
  - a. Develop and implement processes to identify safety hazards of planned changes in the aerospace system (e.g., acquisitions, procedural changes, new regulations)
  - b. Develop and implement processes to identify and mitigate the safety risk of cross-organizational issues that are found to exist as a result of incidents in the system

- c. Design and implement changes to FAA SMS decision-making and governance structure including potential changes to the FAA SMS Executive Council roles and responsibilities
- 3. Redefine Safety Oversight Model for Industry
  - a. Support SMS rollout, including the development of new surveillance models to oversee industry and conduct outreach with industry to share safety management lessons learned and best practices

# **1.4.2. SEQUENCING AND PRIORITIZATION**

As outlined above, the risk-based decision making initiative contains three sub-initiatives with nine underlying activities. While work will begin on all activities this year, the primary focus for FY 2014 is to:

- Align on modeling assumptions in systems that simulate and predict NAS safety risks;
- Develop functional requirements and competencies for the safety data and risk analytics workforce and identify current personnel with relevant skills; and
- Develop and implement processes to identify and mitigate the safety risk of crossorganizational issues that are found to exist as a result of incidents in the system.

The remaining activities have been similarly prioritized for the following years. This sequencing of activities will allow us to make progress on each of the activities, while ensuring that our focus remains on a select group of activities on which we can concentrate our resources.

While the working teams and sub-initiative leads have begun laying the foundation for achievement of all activities, the following table depicts the sequencing of the activities of primary focus over the next five years.



# 1.5. CHALLENGES

The most significant challenges this initiative faces include:

- Transitioning the FAA's culture from the traditional, prescriptive, oversight based on black-and-white compliance with regulations to more flexible, data-informed, risk-based decision making;
- Ensuring the expectations of FAA's oversight bodies (e.g., Office of Inspector General (OIG), Congress, Government Accountability Office (GAO)) are aligned with the FAA's transition to risk-based decision making;
- Identification, availability, and training of employees with the right skill set to operate in a risk-based decision making environment;
- The potential need to obtain and coordinate the resources for new and enhanced SMS activities under tight budget constraints; and
- The willingness of all aviation professionals and industry to openly share data without fear of repercussion.

Successful implementation of the risk-based decision making initiative will enhance the FAA's current business practices by moving towards an environment that supports more conscious and informed decision making. This will require a shift in the FAA culture; cultural issues will be addressed by designing and implementing approaches and enhancements to promote cultural change at all levels of the organization through role modeling, training, and communication. Because the most significant role modeling and communication comes from our leaders, the Administrator and the FAA's senior management team will work closely to ensure culture change begins at the top.

# **1.6. INTERACTIONS WITH OTHER INITIATIVES**

This initiative will rely heavily on the activities of the workforce initiative and will support the activities of the NAS and Global Leadership initiatives.

The potential changes in skill set, organizational structure, and culture will all benefit greatly from integrated work with the skill-related and leadership development activities of the Workforce of the Future initiative. Specifically, the skill activities in the workforce and risk-based decision making initiatives directly overlap and the leadership development activities of the workforce initiative will be an exceptional delivery mechanism for cultural change.

The NAS initiative has many right-sizing, accelerating, and new activities that have safety implications that will benefit greatly from cross-organizational safety decision making and enhanced predictive data analysis. Therefore, personnel working on the risk-based decision making initiative will work closely with those on the NAS initiative to ensure alignment with the new decision making processes developed under risk-based decision making to ensure the seamless integration of new users and technologies to our aerospace system.

Through cohesive work with the Global Leadership initiative, risk-based decision making will see progress in high-impact issues that enhance the safety of U.S. passengers traveling abroad and international flights arriving and departing the U.S. The FAA will also have developed regulatory harmonization and partnership efforts that reduce the barriers to using integrated global supply and maintenance chains.

#### **1.7. CONCLUSION**

To make aviation safer and smarter as the system grows and becomes more complex, the FAA must take bold steps to transform its approach to safety management. By enhancing the quality of our data, our analytical capabilities, and our safety management and oversight processes, we will drive smarter, risk-based decisions to efficiently allocate our resources and increase the safety of the aerospace system.

# Chapter 2: National Airspace System (NAS) Initiative

This initiative lays the foundation for the NAS of the future by achieving prioritized NextGen benefits, integrating new user entrants, and delivering more efficient, streamlined services.

# 2.1. CONTEXT

The current NAS has served the FAA and its stakeholders well for the past 50 years. Today, however, there are new trends that require fundamental changes to the NAS. Over the past 10 years, the agency has seen: dramatic technological change, fuel price increases, congestion concentrated in fewer hubs, new user entrants (e.g., Unmanned Aircraft Systems (UAS) and Commercial Space), an increasing backlog of much needed infrastructure modernization projects, and funding uncertainty. With minimal aircraft operations growth, NAS cost efficiency per operation or mile flown has been adversely affected. Meanwhile, the network of FAA facilities, infrastructure, and technology is aging and sprawling.

To build the NAS of the future, the agency must ensure timely delivery of prioritized NextGen capabilities, enable the safe and efficient integration of new users, and provide more efficient, streamlined services to NAS users. Building a more efficient NAS of the future will require difficult decisions regarding redefining service offerings, and rebalancing resources to align with future air traffic demands.

# 2.2. ASPIRATION

Over the next four years, the NAS will undergo a fundamental transformation to a smaller, more efficient system with increased safety and user benefits. The NAS strategy, articulated through the "guiding principles," sets the framework for prioritizing investment decisions and delivering measurable user benefits.

#### NAS Guiding Principles

- Provide safe, secure, and efficient services to NAS users in the most cost effective and innovative manner.
- Impose least amount of control while maintaining safety.
- Incorporate new user entrants (e.g., UAS and Commercial Space).

• Reduce impact on the environment.

#### 2.3. MEASURES OF SUCCESS

The initiative will track progress across two types of metrics: outcome metrics that measure success and process metrics that ensure the initiative proceeds on schedule.

#### **Outcome metrics**

- Reduced delays
- Reduced FAA infrastructure and facility footprint
- Increased efficiency and capacity where feasible and needed
- Cost per operation and cost per available operation (may be measured by type of operation)
- Number of UAS and Commercial Space flights accommodated
- Improved NAS energy efficiency
- Reduced CO<sub>2</sub> emissions

#### Process metrics

Percent of all current and future NAS services evaluated through the NAS initiative process.

#### 2.4. PROGRAMMATIC APPROACH

To achieve the measures of success outlined above, sub-initiatives covering the three strategic areas—achieving NextGen benefits, supporting the incorporation of new user entrants, and right-sizing the NAS—will be implemented over the next four years.

Prioritization and implementation sequencing of sub-initiatives will seek to deliver the greatest benefit in the shortest period of time. As scalable pilot programs have been tested and proven, they will be rolled out to the full NAS. For many of the sub-initiatives, the implementation timetable will extend beyond 2018, but the agency will build a solid foundation and begin to see benefits in the next four years.

Achieving NextGen benefits focuses on prioritizing investments that provide the largest near-term benefits while paving the way for more long-term benefits to be fully realized. This will include reduced delay, congestion and fuel burn; reduced environmental impact;

and improved cost efficiency. For example, sub-initiatives include redesigning airspace, rationalizing approaches, delivering foundational NextGen automation platforms and the automatic dependent surveillance broadcast services on time will allow NAS users to reap in benefits for decades to come.

The anticipated demand growth from new user entrants—including UAS and Commercial Space—requires adapting services and regulatory approaches in order to integrate these new operations into the NAS in a timely fashion and with the same level of safety and efficiency as other operations.

Right-sizing the NAS will match services, resources and facilities to air traffic demand. This includes reducing and eliminating redundant or outmoded services, facilities and equipment to decrease the FAA's operational costs. To reduce maintenance costs, the agency will modernize aging facilities and develop a lean maintenance and parts strategy. Appropriately aligning the workforce with the new NAS footprint will also be critical to realize the full impact. Right-sizing the NAS also explores innovative business methods, technologies, or techniques for offering similar services in a more efficient and costeffective manner. Potential options to permit non-FAA provision of services, or to formally recognize and integrate commercial services like weather and flight plan products into the overall NAS architecture, will be evaluated.

# 2.4.1. SUB-INITIATIVES AND ACTIVITIES

**Focus to Achieve the Benefits of NextGen**—the goal of these sub-initiatives is to achieve the NextGen goals that have the largest benefit and the biggest need by focusing the deployment of NextGen enhancements at "optimal" sites.

- 1) Metroplex/Performance Based Navigation (PBN)
  - a) Formulate airspace optimization plans at busiest airports
  - b) Focus on increasing usage of PBN procedures
  - c) Eliminate unused instrument flight procedures

The agency will ensure the procedures are being utilized by focusing on the resources needed for implementation – automation support, financial support, training, etc. This effort also involves coordinating with the surface office to ensure sites under consideration for surface program deployment are aligned with the Metroplex/PBN work. Decommissioning unused procedures will reduce Ops cost and ensure that the new procedures get utilized and therefore the benefit is realized. Prioritization of this activity will be done across the NAS utilizing national policy objectives and a collaborative decision-making approach to planning and implementation.

- 2) Accelerate the benefits of surface activities
  - a) Data sharing with airlines
  - b) Technology deployment

The agency will ensure the benefits are being realized by focusing on the resources needed for implementation including: data sharing requirements, automation support, financial support, etc. This effort will also ensure that the planned deployment of Metroplex/PBN is aligned with the existing surface work.

3) Complete foundational programs by 2015 (ADS-B Out, ERAM, key TAMR sites)

These foundational programs provide a much-needed upgrade of the basic hardware and software systems that allow us to control the airspace. These infrastructure upgrades are the platform for the future NextGen enhancements and constitute the backbone to transform the NAS. Therefore, this activity ensures the benefits and implementation of the foundational programs – by focusing on the resources needed including financial support, site support, people support, etc.

4) Research using the Airport Improvement Program (AIP) to fund certain NextGen investments as an alternative to traditional infrastructure in highest priority airports

This activity will explore the potential to utilize AIP funding for NextGen enhancements that can benefit airports. If the FAA decides to pursue this, it would require Congressional approval to obtain statutory authority for the flexibility. This approach could provide another means for NextGen deployment to sites that may not be priority focused but still have benefits.

5) Accelerate remote towers

FAA will investigate opportunities to accelerate the remote towers concept. This concept/technology, once fully developed and matured, is envisioned to be used for consolidation opportunities, and could save funding on the modernization effort.

6) Ensure funding and benefits-capture of prioritized NextGen capabilities

This effort will link to the NextGen Advisory Committee (NAC) recommendations. These capabilities include key programs such as ADS-B In, DataComm, SWIM, NAS Voice Switch and other future NextGen capabilities. Key to this effort is to ensure resources to support the benefits as NextGen capabilities continue to be rolled out and deployed in a synchronized manner. We will focus the deployment to the sites that will have the "largest bang for our buck," and when necessary, we would evaluate applicable rulemaking to enable users to reap full benefits of NextGen. **Integrate New User Entrants**—the goal of these sub-initiatives is to safely and efficiently integrate new types of operations, such as commercial space and unmanned aircraft, into the NAS and enable the benefits these operations will provide.

1) Establish process and procedures for more systematic integration of space traffic management (STM)

The current process is generally based on case-by-case approvals – but as commercial space begins to expand we need to be able to regularly and consistently integrate the traffic safely into the current NAS. We need to be on the forefront of this transition to ensure the FAA is prepared and able to provide for the safe expansion, while equitably and efficiently balancing the needs of these users with other users according to well-understood policies and procedures.

2) Develop new regulatory approach to integrate UAS into NAS

The FAA has a Congressional mandate to safely integrate and handle the expansion of small UAS into the NAS. Currently there are a number of small UAS already in the airspace, though they are segregated from other activity by altitude or airspace restrictions. Because of this segregation, small UAS are largely unregulated. Calls to further integrate them into the NAS could drive a large expansion of current FAA services – at a time where funding is short for current services. We need to be able to handle this growth through new regulation or innovation as to how we regulate. We also need to ensure the FAA can sustain the services that it agrees to provide.

3) Accelerate "detect and avoid" technology adoption for UAS

For medium/large UAS, there is a greater need for "detect and avoid" technology as they are integrated into the NAS. RTCA has been used to look at the regulation that is needed for the "detect and avoid" technology. This is needed so the FAA can stay on the forefront of the UAS expansion. Currently DoD is the main user and we are working together on the detect and avoid technology.

<u>**Right-size the NAS**</u> – the goal of these sub-initiatives is to reduce the FAA's Operations cost by creating a more efficient, streamlined NAS.

1) Leverage technology and innovative business models to efficiently manage provision of services

FAA provides a suite of services today but much of it is based on obsolete infrastructure and technology. This sub-initiative will use technology, lessons learned and new practices and business models to reduce Operations costs without impacting safety.

2) Develop lean maintenance and parts strategy

Current maintenance strategy is based on outdated or "how we have always done it" practice. This sub-initiative will reassess the strategy based on: technology trends, utilization of other industry practices, and look across the organization to streamline parts and maintenance.

3) Revalidate sites' needs for systems that are deployed.

This initiative will reassess equipment and need of the services at different facilities. It will leverage the Air Traffic Organization (ATO) plan to assess current and trend of operations at facilities to ensure the efficiency of each facility in regard to current equipment and services at the site

4) Appropriately align workforce to match NAS footprint

NAS trends result in shifting demand over time and therefore our workforce allocation needs to be flexible. The FAA must have the ability to efficiently address changing operational needs.

5) Consolidate and modernize facilities

FAA's infrastructure is based in part on outmoded technology; in order to adapt to changing technology, we should look to modernize and consolidate facilities where appropriate. Some of this work is already underway through the Section 804 process mandated by Congress in the last FAA reauthorization statute. We will incorporate planning work to substantially reduce unsustainable infrastructure and fully integrate lifecycle management into our ongoing operations program.

6) Maximize the use of new technologies by phasing out/reducing the use of old capabilities (e.g., navigation aids, sensors, secondary radars, routes)

Technology has changed how we provide services, which has led to decommissioning or reducing the use of the obsolete technology or unnecessary practices. These reductions are a benefit in order to ensure the successful sustainment of the new technology (GPS-based aviation navigation services and ADS-B based surveillance) – which is more efficient and also covers substantially more airspace.

Area	Initial Focus <sup>1</sup>	Extended Focus <sup>2</sup>	Monitor <sup>3</sup>
Focus to Achieve the Benefits of NextGen	<ol> <li>Metroplex/PBN</li> <li>Accelerate the benefits of surface activities</li> <li>Complete foundational programs by 2015 (ADS-B Out, ERAM, and key TAMR sites)</li> </ol>	<ol> <li>4) Research using AIP to fund certain NextGen investments</li> <li>5) Accelerate remote towers</li> <li>6) Ensure funding and benefits-capture of prioritized NextGen capabilities</li> </ol>	
Integrate New User Entrants	<ol> <li>Establish process and procedures for integration of space traffic management</li> <li>Develop new regulatory approach to integrate UAS into the NAS</li> </ol>		3) Accelerate "detect and avoid" technology adoption for UAS
Right-Size the NAS	<ol> <li>Leverage technology and innovative business models</li> <li>Develop lean maintenance and parts</li> <li>Revalidate sites' needs for systems that are deploved</li> </ol>	<ul> <li>4) Intelligently align workforce to match NAS footprint</li> <li>5) Consolidate and modernize facilities</li> </ul>	<ul> <li>6) Maximize the use of new technologies by phasing out/reducing the use of old capabilities</li> </ul>

#### 2.4.2. SEQUENCING AND PRIORITIZATION

<sup>1</sup> Initial focus sub-initiatives aim for clear, measurable progress within 12-18 months and will carry frequent progress updates and involvement of the agency's senior leadership.

<sup>2</sup> Extended focus sub-initiatives are those will be longer term efforts, which will show significant progress by 2018, and will also have regular involvement and interaction with senior leadership.

<sup>3</sup> For "Monitor" sub-initiatives, team leaders will report status periodically, but will manage to the pre-existing schedules or those already under development. They are included in the NAS initiative to help prioritize these efforts into the core work programs across the involved organizations.

# 2.5. CHALLENGES

Working with tools from the risk-based decision making initiative and training efforts under the workforce initiative, we will endeavor to more fully incorporate safety oversight priorities into the life cycle development process for NextGen.

The NAS initiative will also work to expand the number of operational units contributing to our new system designs. We will create new governance and coordination techniques that help our people contribute fully to evolving change efforts. This will require attention to the approach to collaboration by our Headquarters, Service Center and field personnel. By successfully addressing these challenges, we will shorten the time needed to move an idea to an in-service product that delivers operational benefit to the airspace user and the FAA.

The changes resulting from the Right-Size the NAS sub-initiative in particular will require a shift in traditional thinking. The FAA has historically provided all services to all users in many different locations with little differentiation; the new approach will require prioritization and a recognition that the agency cannot continue to provide all of the services that we have historically. Alternative service delivery options will also be considered within this initiative. A successful outcome will incorporate effective mechanisms to decommission or discontinue redundant services that respect all stakeholders' financial needs as new service capabilities come online.

# 2.6. INTERACTIONS WITH OTHER INITIATIVES

#### **Risk-Based Decision Making**

Utilizing processes and methods refined in the risk-based decision making model, the NAS Initiative will facilitate a quantitative and qualitative assessment of current NAS services, using a well-understood, proven safety risk assessment process to evaluate service curtailment or change.

By frontloading NAS design initiatives with a safety evaluation early in the development cycle, the NAS initiative will improve the quality of design and cost-benefit decisions. This will also shorten the timeline between identifying a problem and deciding to implement solutions that meet safety and business case criteria.

#### Workforce of the Future

The NAS initiative will leverage our upcoming hiring cycle, facilitating the creation of a new mix of operational, research and engineering team management concepts to create well-managed NAS evolution cycles that are more rapid and efficient. This will shorten

our time to in-service delivery of solutions, keeping the FAA's air traffic services at the forefront of system design while continuously improving the level of safety for aviation users.

Taking advantage of workforce training initiatives, the NAS initiative will strive to introduce advanced team management and collaboration processes across the FAA system. Our objective will be to empower our field operational leadership and their work teams to define the future of the FAA's technological and procedural development. With new communication and training tools, the risk-based decision making techniques pioneered in AVS will become a cornerstone of field development methodology.

# Global Leadership

Using the international governance processes developed in the Global Leadership initiative, the NAS initiative will have "eyes" for the best practices being developed elsewhere in the world, working to employ effective solutions developed elsewhere for our own benefit.

Fully incorporating ICAO's Aviation System Block Upgrade (ASBU) process into our own development initiatives, the United States will insert progressively developed field initiatives into global standards and recommended practices. This will leverage domestically designed and manufactured technology into the global marketplace complimented by "world class" operational procedures and collaboration methods that optimize operations around the world - pioneered by the FAA.

# 2.7. CONCLUSION

The objective of the NAS initiative is to transform our air traffic services, in order to cost effectively deliver appropriate services and benefits to stakeholders. Initially, we will focus on 15 sub-initiatives that directly address priorities identified by industry stakeholders. We will develop and work to detailed, well-understood deployment schedules on the initial focus items, delivering measurable improvements by the end of 2015. As our extended focus initiatives develop, we will draw a clear delivery timeline for the transformation of our services by using our most important asset - the creativity and talent of our workforce. This transformation will be clearly visible to our external stakeholders in that they will be able to measure differences in their access to the system, their cost effectiveness and in their ability to engage collaboratively with the FAA to seek new solutions to their operational challenges.

# **Chapter 3: Global Leadership**

This initiative will improve safety, air traffic efficiency, and environmental sustainability across the globe through an integrated, data-informed approach that shapes global standards, enhances collaboration and harmonization, and better targets FAA resources and efforts.

# **3.1 CONTEXT**

The U.S. benefits from FAA global leadership with increases in safety, efficiency, environmental sustainability, exports, and leverage to achieve broader international objectives. U.S. citizens travelling abroad, and flights between the U.S. and other countries, benefit from increased safety due to FAA expertise and leadership in developing global regulations and standards. FAA programs promote seamless connectivity across borders for air navigation and product exchanges. Worldwide acceptance of U.S. policies and regulatory approaches removes barriers for the U.S. aerospace industry, a vital component of the U.S. economy.

The Global Leadership initiative ensures the FAA maintains its external engagement and internal structure to continue improving global aviation.

Historically the U.S. shaped the global aviation sector based on its size, technological advancement, expertise, and regulatory development. The FAA has been the leading model for safety, efficiency, and environmental sustainability. However, the global transportation network is changing and even the growth of the U.S. industry is shifting abroad; hence, the FAA needs to adapt its international approach to maintain and enhance its leadership position. Several trends illustrate the challenge:

- Growth of aviation globally. Over the past 12 years, international traffic has been the overwhelming driver of growth at U.S. airports. International enplanements have increased 50% while domestic has remained flat. International departures have increased approximately 45% while domestic has decreased more than 15%. As the U.S. is experiencing this growth in international traffic, so is the rest of the world. In fact, over the past decade, the U.S. share of global traffic has dropped from 39% to 29%. Taken together, international activity is increasingly shaping our sector.
- U.S. Industry outsources globally. Certification and oversight are becoming increasingly difficult because maintenance and supply chains for U.S. aeronautic products are growing more complex and globally dispersed. Outsourced manufacturing accounted for over 30% of the Boeing 787 from over 50 different

manufacturers. The aerospace industry will continue to increase their outsourcing. On the maintenance side, the number of foreign repair stations has grown from 344 to 726 between the years 2003 to 2013.

- Varying levels of aviation safety oversight. The developing world's operations are often outpacing its oversight capabilities. The developed and developing worlds can have significantly different levels of aviation safety.
- Divergent Standards and Practices. The lack of harmonized standards and practices in air traffic management and environmental protection can negatively impact competitiveness in the global marketplace as well as the efficiency and interoperability of the international airspace.
- Alternatives and complexity increases. Regulatory and operational alternatives and complexities are emerging. Other countries are adopting new models of air traffic and airport management, challenging how we can harmonize multiple approaches to set standards.
- Foreign regions consolidate their influence. ICAO Member States are regionalizing to use economies of scale, shared expertise, and common regulations. Regional alliances consolidate and strengthen votes at ICAO, which decreases direct U.S. influence at ICAO.
- **Resource constraints.** Fiscal and political factors have limited U.S. global engagement. FAA has fewer resources and an uncertain budget.

These trends have altered the global aviation landscape. Further, rapid growth has occurred in parts of the world—Latin America, Asia-Pacific, and the Middle East—where the FAA has traditionally had a lower profile. The FAA's international strategy needs to change to reflect this new reality.

#### **3.2. ASPIRATION**

The Global Leadership strategic initiative will deliver an internal governance structure that allows us to make better FAA-wide decisions about how we engage globally using an integrated data-informed approach. We will make decisions about our international activities and programs based on our ability to enhance U.S. influence and better target our resources to shape global standards and assist countries to improve aviation safety, efficiency, and environmental sustainability.

## **3.3. MEASURES OF SUCCESS**

We will develop an *FAA International Strategy* that describes our global priorities and the integrated, data-informed approach we use to choose them. We will integrate the *Strategy* with how we make decisions, then decide which international activities and programs will be most effective to achieve our global priorities and align our resources accordingly.

The initiative will track progress across two types of metrics: outcome metrics that measure success in achieving gains in safety, efficiency, and sustainability and process metrics that ensure the initiative proceeds on schedule and effectively uses FAA resources.

#### **Outcome Metrics**

- The FAA will *enhance safety* of U.S. passengers and flights arriving in and departing from the U.S. through a transparent, integrated, data-informed approach that produces clear priorities and targets for our resources.
- The FAA will develop regulatory *harmonization* and partnerships with foreign countries and organizations that reduce barriers to use global supply and maintenance chains.
- The FAA will ensure NextGen technologies achieve global acceptance and *interoperability* with other international modernization efforts. This allows U.S. operators to avoid equipping to multiple standards and the market for U.S. products to be universal rather than fragmented.
- The FAA will lead the development and global acceptance of data-informed, costbeneficial environmental *standards and policies* that provide environmental protection while enabling the U.S. aerospace industry and airlines to grow internationally without restrictive regulations.

#### **Process Metrics**

- The FAA will develop an internal international *governance structure* that strengthens coordination among offices to set strategic goals, applies them to international activities and programs, and integrates them to achieve annual targets.
- The FAA will develop and implement an integrated, data-informed *FAA International Strategy* that describes how we identify our international priorities, defines them, and guides how we set our annual targets.

 We will use the integrated, data-informed and team-driven approaches to coordinate and prioritize FAA resources used internationally, including: validating our international presence and identifying key international travel needs, selecting highly qualified participants, and preparing them to achieve strategic targets.

# 3.4. PROGRAMMATIC APPROACH

# 3.4.1. SUB-INITIATIVES AND ACTIVITIES

This initiative will be carried out through the following sub-initiatives and proposed underlying activities:

- 1. Transform our internal structure to use an integrated team approach to ensure open dialog and decision making for consistent, validated international activities.
  - a. Establish FAA International Advisory Board (IAB) and FAA International Steering Committee (ISC). Draft charters for both bodies.
  - b. IAB & ISC choose data and criteria to prioritize strategic goals.
  - c. Test agency-wide international database.
  - d. Begin communication with stakeholders outside FAA about strategic approaches.
  - e. Explore a formal mechanism to increase industry collaboration and participation.
- 2. Develop an integrated, data-driven approach to prioritize and make decisions about international activities and key relationships.
  - a. IAB & ISC choose data and criteria to prioritize strategic goals.
  - b. LOBs and SOs begin to share information corporately.
  - c. Draft FAA International Strategy.
  - d. Develop an *FAA ICAO 5-Year Plan* to include resources, coordination, priorities for standards and other work.
  - e. Develop an *FAA International Organizations 10-Year Plan* to include resources, priorities, conferences, board membership.
- 3. Ensure global interoperability of NextGen technologies and procedures by shaping international standards for efficiency.
  - a. Work with ICAO on standards for information management and exchange.
  - b. Work with identified countries to implement NextGen compatible technologies.
  - c. Begin work with identified States to implement risk-based management approach.

- d. Begin developing plans to help identified countries improve major ICAO USOAP findings.
- 4. Place international resources strategically to improve safety, air traffic efficiency, and environmental sustainability across the globe
  - a. Ensure appropriate FAA presence internationally.
  - b. Develop an internal FAA approach to international funding.
  - c. Execute governance structure to guide how FAA uses international resources based on the *FAA International Strategy*.

# 3.4.2. SEQUENCING AND PRIORITIZATION

As outlined above, the Global Leadership Initiative contains four sub-initiatives and several underlying activities. While work on projects that support the last two sub-initiatives will begin in FY2014, the primary focus for this fiscal year will be the activities focused on transforming our internal structure and developing an integrated, data-informed approach to prioritize and make decisions about international activities and key relationships.

The remaining activities, and others that are created as an outcome of the development of the FAA international strategy, will become the focus of future years beginning in FY2015.

# 3.5. CHALLENGES

- We currently lack an agency-wide international strategy to prioritize and target our international resources effectively.
- Overall U.S. (and FAA) budget resource constraints can induce pressures to withdraw from international activities.
- FAA's current international presence has been based on historical decisions rather than a systematic, data-informed review.
- Measured against other countries, the United States currently is under-represented in ICAO in absolute terms. FAA international resources are not controlled and allocated based on an integrated strategy.

# **3.6. INTERACTIONS WITH OTHER INITIATIVES**

The Global Leadership Initiative will cut across all of the other initiatives in that what we do as an Agency internationally is often an extension of our domestic priorities.

The process that the international governance structure puts in place to identify strategic priorities for the FAA will employ a risk-based decision making model. Many of the activities that will be undertaken internationally will closely align with those developed by the Risk-Based Decision Making initiative.

Similarly, the harmonization, modernization, and environmental activities that are identified as international priorities will involve exporting the expertise, procedures, and technologies that are developed under the NAS Initiative.

Lastly, the FAA will look to use international and overseas assignments to provide developmental opportunities for future leaders as envisioned in the Workforce of the Future initiative.

# 3.7. CONCLUSION

The outcomes from this initiative will help achieve all four strategic priorities. First, the FAA will promote risk-based decision making with global partners to ensure that the international aviation system is safer and smarter. Second, FAA will share benefits derived from U.S. technology and infrastructure advancements globally to promote interoperability. Third, to enhance global leadership amidst substantial international growth of traffic, manufacturing, and regionalization, the FAA must invest in shaping global standards and assisting other countries. FAA will share benefits derived from U.S. technology and infrastructure advancements globally. Finally, FAA's workforce will benefit from this international focus, through the creation of new leadership development opportunities during international assignments.

FAA helped shape the safety and efficiency of the first century of aviation due in part to the size and dominance of the U.S. aviation sector. As the relative size of the U.S. industry shrinks and U.S. industry growth is increasingly international, FAA will only be successful in shaping the safety and efficiency of this century by a systematic, carefully marshaled, and targeted engagement internationally.

# Chapter 4: Workforce of the Future

This initiative will prepare FAA's human capital for the future, by identifying, recruiting, and training a workforce with the leadership, technical, and functional skills necessary to ensure the U.S. has the world's safest and most productive aviation sector.

# 4.1. CONTEXT

The FAA is embarking on a major strategic transformation that can only be accomplished if it has a workforce that is prepared with the skills and mindsets to drive this change. Strong change leadership is required from all levels of the agency to communicate the vision, implement the priority initiatives, and ensure sustained impact from the transformation.

The movements toward risk-based decision making and transforming the NAS through right-sizing, acceleration of NextGen benefits, and integrating new user entrants require new technical and functional skills, and a cultural shift in how the agency works.

The FAA is also facing significant turnover in the workforce. At the same time, rapid technological innovation is creating a growing mismatch between the skills of employees and the agency's needs. Approximately one-third of the current workforce will become eligible for retirement by 2018, resulting in a significant loss of leadership and institutional knowledge and experience, as well as an opportunity to reevaluate the composition and skills mix of our workforce.

There are several challenges in preparing our workforce for the future:

- The need for leadership development was one of the most frequently cited issues identified in interviews with FAA's executives. There is no agency-wide leadership development program. There is also a lack of development around career transitions and little accountability for employees to practice effective leadership skills.
- There is no consistent approach in the agency for identifying future workforce skill needs and allocation of resources.
- It is difficult to attract the most impressive talent to the agency without an effective recruiting strategy. Hiring decisions are often made reactively, to fill immediate shortfalls, rather than strategically, with the agency's priorities in mind.
- Technical and functional skills development needs to be updated to incorporate significant technological advances.

The imperative to address these challenges is great, since the FAA's 47,000 employees are the ultimate drivers behind the success of the strategic transformation. The agency must be equipped with the human capital infrastructure to support their growth and development.

#### 4.2. ASPIRATION

The FAA needs a workforce with the strongest leadership, technical, and functional talent to respond to the dramatic changes in the aviation industry and deliver services through new operating models.

In developing this workforce, the FAA will see a major cultural and mindset shift that will allow its employees to:

- Operate collaboratively across parts of the organization and with system users
- Embrace personal responsibility and the meaning of public service
- Drive results and deliver on services and assignments
- Be forward-looking rather than reactive when developing skills
- Act in uncertainty, leveraging the best information available to make decisions
- Lead with influence rather than authority as leadership roles become less clearly defined during times of change
- Give and receive open feedback to promote a culture of excellence

# 4.3. MEASURES OF SUCCESS

The ultimate success of this initiative will be measured by how well the mindsets detailed above become part of the operating culture of the agency and help drive the other initiatives that are part of the strategic transformation.

The initiative will track progress across two types of metrics: outcome metrics that measure success and process metrics that ensure the initiative proceeds on schedule.

#### **Outcome metrics**

- Effective development of proactive leaders
- Delivery on performance targets met through a skilled and engaged workforce
- Increased FedView survey scores on leadership and functional capabilities

#### Process metrics

- Number of organizations that have assessed their workforce needs
- Number of employees hired with critical skills
- Reduced time to hire
- Number of leadership and technical programs completed by employees
- Satisfaction scores from participants at capability building programs

#### 4.4. PROGRAMMATIC APPROACH

This initiative will take a holistic approach to human capital development, involving a series of sub-initiatives to help deliver the agency's strategic transformation and guide day-to-day operations.

It is imperative that an FAA-wide leadership development program is established, to develop strong leaders who understand, embrace, and demonstrate the skills necessary to lead change during this strategic transformation. This program will enable leaders at all levels to develop a set of core leadership competencies and specialized skills that are relevant to their functional areas.

The FAA must determine the skills and size of the workforce necessary to lead the agency into the future, and assess any gaps between these needs and current workforce capabilities. It should also ensure that resources are most optimally allocated to support the agency's strategic priorities or mission-critical functions.

The workforce assessment will help the agency focus its recruiting efforts on identifying the right sources of talent to fill these skills gaps. This should be supported by an effective and efficient hiring process that selects the most appropriate candidates, and utilizes a consistent onboarding program that connects new employees to the FAA's culture, mission, and values.

Development of technical and functional skills tied to the agency's strategies will provide our workforce with the capabilities necessary to most effectively and efficiently deliver services and benefits to our users. It will also ensure that the skills of our workforce evolve as the technologies, operating models, or strategic priorities of the agency evolve.

# 4.4.1. SUB-INITIATIVES AND ACTIVITIES

There are a suite of sub-initiatives that support the Workforce of the Future Initiative:

Sub-Initiative	Description and Activities	
Leadership Development	Create an agency-wide program with core competencies and tailored content delivered through a variety of learning channels. Specific activities include:	
	<ul> <li>Develop leadership model and skills framework</li> <li>Create cascade roll-out model and delivery mode (e.g., field and forum)</li> <li>Engage with FAA offices to develop customized programs</li> </ul>	
Skills Identification	Determine future skill needs, compare to existing workforce, identify gaps, and design optimal organizational structure. Specific activities include:	
	<ul> <li>Understand skills needs through effective workforce planning</li> <li>Determine the impact of the NAS and risk-based decision-making initiatives on future skill needs</li> </ul>	
Skills Development	Be proactive rather than reactive in developing technical / functional skills. Specific activities include:	
	<ul> <li>Enhance capability building tied to future needs</li> <li>Create more effective training programs (e.g., use of new technologies in air traffic training)</li> </ul>	
Attracting Talent (Recruiting, Hiring, and Onboarding)	Identify new sources of talent, operate an efficient and effective hiring process, and conduct consistent onboarding. Specific activities include:	
	<ul> <li>Identify new sources of talent</li> <li>Create strong employee value proposition</li> <li>Develop effective hiring process to screen and select most appropriate candidates</li> <li>Reduce the time it takes to hire a new employee</li> <li>Develop consistent onboarding process, grounded in talent culture</li> <li>Institute process for all new employees</li> </ul>	

#### 4.4.2. SEQUENCING AND PRIORITIZATION

Our approach to prioritizing the sub-initiatives included determining immediate agency needs, examining current activities and resource availability, and identifying dependencies to the other strategic initiatives. Input from FAA's executives regarding the lack of a leadership development program in the agency elevated this sub-initiative to the top of the sequencing. An immediate focus on leadership development is necessary to ensure our leaders have the right skillsets to navigate the agency through the future transformation.

There is a significant amount of work currently underway that supports the subinitiatives. There is opportunity to leverage this existing work. For example, a project had previously been initiated to improve the agency's hiring process. This work should continue and expand to achieve the desired outcomes for the Attracting Talent subinitiative. Finally, as work is underway in the other initiatives, the working teams integrate with the other initiatives to support their activities. Team members from the Skills Identification team will assist the NAS and Risk Based Decision Making team as they determine their future skill needs. Details of the sub-initiative roll-out plan are shown in the chart below





# 4.5. CHALLENGES

The success of this initiative requires cross-agency cooperation and implementation during a fiscally tight environment. Further, there are both obstacles and cultural issues that could impede the completion of the sub-initiatives including:

- The need to cascade leadership development at an appropriate pace to support the desired cultural changes that are described throughout this plan;
- Our ability to attract and develop new employees, to effectively transition our current corporate knowledge to support the desired future state;
- Correctly portraying our desired future state so that we plan, recruit, and develop the right mix of people with the correct leadership and technical/functional skills to carry the FAA into the future; and
- Correctly baselining the resources needed to provide leadership and technical/functional skills development, and then ensuring that adequate resources are available to provide that training.

The FAA will need to overcome these barriers by maintaining a stable corporate approach, providing adequate resources to execute this initiative, and using effective communication to broaden the understanding and acceptance of our shared human capital goals.

# 4.6. INTERACTIONS WITH OTHER INITIATIVES

The Workforce of the Future initiative directly supports the successful outcome of objectives in the NAS, Risk-Based Decision Making, and Global Leadership initiatives. Initially, cross-agency teams will work together to develop strategies for each of the workforce sub-initiatives. This is critical since they will determine what the future workforce requires to be successful. They will address not only leadership, skills identification, skills development and attracting talent strategies, but also how each of these sub-initiatives should be integrated with the other strategic initiatives.

Continuous engagement with the other initiatives will be needed to accelerate cultural, leadership and workforce transitions across the agency.

# 4.7. CONCLUSION

To empower and innovate with the FAA's people, and to support the dramatic changes in the aviation industry, we must equip our workforce with the critical leadership, technical, and functional skills of the future. We must proactively build a human capital infrastructure that can efficiently and effectively identify skills needs, recruit talent into the agency, and provide employees with the training to develop these skills. People are our strength during our strategic transformation. Our success depends on the respect, diversity, collaboration, and commitment of our workforce.