



NEXTGEN IMPLEMENTATION PLAN 2010

EXECUTIVE SUMMARY

This NextGen Implementation Plan provides an overview of the FAA's ongoing transition to NextGen. The Plan lays out the agency's vision for the Next Generation Air Transportation System, now and into the mid-term, which is defined here as 2012-2018. The Plan further identifies the goals we have set for technology and program deployment and the commitments we have made in support of that vision. Through annual updates, it will document our work plan for meeting those goals.

Our primary goal is to provide new capabilities that make air transportation safer and more reliable, improve the capacity of the National Airspace System (NAS) and reduce aviation's impact on our environment.

NEXTGEN TODAY

The FAA already has achieved a number of critical NextGen milestones. We have initiated and expanded satellite-based surveillance, improved airport runway access, increased safety and efficiency on the ground, and enhanced airspace safety and operations. NextGen technologies and procedures, along with airspace redesign, have enabled more direct routes and more efficient operations, which use less fuel and reduce emissions.

The use of Automatic Dependent Surveillance-Broadcast (ADS-B) to control air traffic in the Gulf of Mexico in December 2009 was an important step forward. But many other recent improvements help lay a solid foundation for upcoming NextGen advances. Airfield construction and improvements around the nation, along with the continued deployment of surface safety technology such as Airport Surface Detection Equipment-Model X have helped increase runway safety and reduce delays.

Airspace redesign and Performance Based Navigation (PBN) procedures already are saving fuel, reducing emissions and managing noise in demonstrations with our domestic and international partners. The FAA has worked closely with European and Pacific Rim operators to ensure that aircraft operating globally are equipped with technology that can function and take advantage of operational benefits in various

international air traffic environments. We also have moved forward new aircraft and energy technologies to further reduce emissions, achieving the approval of the first aviation alternative fuels specifications in 2009.

COLLABORATION: RTCA TASK FORCE RESPONSE

In September 2009, nearly 300 members of the aviation community who form the RTCA NextGen Mid-Term Implementation Task Force issued a final report that included a number of recommendations that helped the FAA galvanize its plans to deliver tangible near-term benefits today as we build a foundation for the mid-term. The report represents the aviation community's commitment to NextGen, as well as its endorsement of the FAA's incremental approach to NextGen implementation.

The FAA's action plans support the operational capabilities the Task Force requested, such as sharing surface movement data for better collaborative decision making. We are working to help airports safely increase throughput on closely spaced as well as converging or intersecting runways. We also are working to safely increase access to the NAS for all operators, and provide controllers with the tools and operator procedures they need to enable the safest, most efficient, economical and environmentally friendly routes of travel.

Our nation's airports are among our most important partners in these endeavors. In the face of increasing demand, airports are being called on to provide additional capacity in a safe, efficient and environmentally responsible manner. We will realize significant benefits from integrated airport planning and terminal airspace redesign projects that deliver new airport infrastructure served by PBN capabilities. In this Plan, we highlight the critical contributions America's airports have made in support of the NextGen transformation.

NEXTGEN 2018: OPERATING IN THE MID-TERM

This year's update reiterates our vision for the operational environment between now and 2018. That vision includes improvements at every phase of flight, and it fundamentally changes the way things work in the NAS. Common weather



and system status information will dramatically improve flight planning. Technologies such as ADS-B and Data Communications, combined with PBN procedures and the policies that enable them, will increase safety and capacity and save time and fuel, decreasing carbon emissions and improving our ability to address noise.

With NextGen, we must continue to advance safety as we look ahead at increasing air traffic and the introduction of very light jets, unmanned aircraft systems and commercial space flights. To continue to minimize risk as we introduce new systems and procedures over the next decade, the aviation community will continue to rely on Safety Management Systems, integrated safety cases and other proactive management processes that allow us to assess the safety risk of all proposed changes.

Policy, procedures and systems on the ground and in the flight deck enable the mid-term system. We make the most of technologies and procedures that are in use today, as we introduce new systems and procedures that will fundamentally change air traffic automation, surveillance, communications, navigation and the way we manage information.

In addition to the advanced systems and procedures we develop through the NextGen transformational programs and solution sets, the mid-term system depends on coordination with and support from FAA specialists on safety, airports, the environment, policy development and the other building blocks of a modern air traffic management system. FAA information and management systems must keep all these activities synchronized as we approach the mid-term, reach it and move forward. We will use a strategic Environmental Management System approach to integrate environmental and energy objectives into the planning, decision making and operation of NextGen. Under the Continuous Lower Emissions, Energy and Noise program, we are targeting partnerships with industry to advance noise and emissions reductions, while improving energy efficiency. We will continue to accelerate the certification and implementation of sustainable alternative fuels for use by aircraft fleets.

NEXTGEN BENEFITS

As airports and other segments of the greater aviation community already are starting to reap the benefits of NextGen

capabilities, the best is yet to come. Our latest estimates indicate that by 2018, NextGen will reduce total flight delays by about 21 percent, providing \$22 billion in cumulative benefits to the traveling public, aircraft operators and the FAA. During this same period, we expect to save more than 1.4 billion gallons of fuel from air traffic operations alone, cutting carbon emissions by nearly 14 million tons. These conservative estimates make the case for NextGen and affirm that the path we are traveling with our aviation partners is the right one.



As we move forward, we remain keenly focused on safety as the FAA's top priority. We will vet each new system and procedure through the agency's safety management system process. The FAA's Aviation Safety and Information Analysis and Sharing program, in use today, will monitor the NextGen operational capabilities to identify any precursor risks.

We know that NextGen's benefits are not limited to America's borders. Just as we are working with the international community to ensure that our technology systems work seamlessly with one another, we are working to standardize global operational procedures that better protect our environment.

CHALLENGES TO IMPLEMENTING NEXTGEN

The FAA remains confident it will achieve NextGen, but we are fully aware that the road to success will be challenging. Undertaking NextGen is extremely complex, in part because systems in various stages of development and maturity are interdependent and will be implemented in a variety of time frames. NextGen's increasing dependency on aircraft-centric capabilities means that we must rely on operators' willingness to equip. We will not see real performance improvements until operators are properly equipped to reap the benefits of those capabilities. We are managing the uncertainties inherent in such a large-scale undertaking by using a portfolio management approach for NextGen development and deployment.

WHY NEXTGEN MATTERS

Many people will benefit from the NextGen – whether they travel frequently by air or never fly at all. Travelers will enjoy fewer delays and safer, more predictable trips. People living in neighborhoods near airports will experience less aircraft noise and emissions. And communities will make better use of their airports, strengthening the local economy. ■