



NextGen Works for Airlines

NextGen supports the development of the airline industry with a transition to smarter, satellite-based and digital technologies and new procedures that combine to make air travel more predictable, efficient and environmentally friendly.

The majority of the foundational and infrastructure elements that support NextGen will be completed and installed by the end of 2015. We will see dramatic results as we build upon this foundation, bringing different NextGen components together to provide new functions and capabilities.

NextGen requires collaboration among the FAA and National Airspace System (NAS) users. As the pace of implementation speeds up, engagement becomes even more important. Together we are delivering capabilities that ensure a positive business case for those who make the investment in NextGen — tangible benefits for industry and the traveling public.

Automatic Dependent Surveillance–Broadcast (ADS-B): NextGen’s satellite-based successor to radar uses GPS to track aircraft.

The baseline ADS-B ground infrastructure of 634 ground stations was completed in 2014. Because this transformational program is available in remote areas

where radar coverage may not have been available, ADS-B creates new possibilities for safety and efficiency.

To ensure the benefits of ADS-B for all fliers, the FAA mandated the use of ADS-B Out by January 1, 2020. ADS-B Out avionics transmit aircraft position information, airspeed and other data to ground stations



Airlines in the United States carry more than 750 million passengers every year. The aviation system contributes 12 million jobs and accounts for more than 5 percent of the gross domestic product (\$1.5 trillion) to the U.S. economy.

and ADS-B In-equipped aircraft, providing them with increased situational awareness and access to other beneficial services.

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Metroplex/Performance Based Navigation (PBN):

The systems that make up NextGen have a synergistic effect. Nowhere is that more apparent than in our Metroplex program. Metroplex is the agency's fast-track effort to use PBN to decongest the airspace around busy metropolitan areas. Flying new procedures based on satellite navigation allow aircraft to maximize routes and avoid fuel-burning turns that add up to millions of dollars in extra expense.

For example, the Houston Metroplex project redesigned the airspace around Houston Intercontinental and Houston Hobby airports and became fully operational in May 2014. The FAA estimates that aircraft in Houston will fly 648,000 fewer nautical miles annually, saving 3 million gallons of fuel and \$9.2 million in fuel costs. Carbon emissions are reduced by 31,000 metric tons, which is equivalent to taking more than 6,000 automobiles off the streets of Houston. Other metroplex locations show similar results.

System Wide Information

Management (SWIM): SWIM is the data-sharing backbone of NextGen. Since 2010, it has been distributing weather and flight planning information to NAS users, mainly to airline operations centers.

In July 2014, the FAA reached a significant milestone with Aircraft Access to SWIM (AAtS), which opened the opportunity for operators on the flight deck to subscribe to FAA data from SWIM using an Internet Protocol data link. AAtS enables the transmission of real-time weather and traffic advisory information, such as pilot reports, Notices to Airmen and aviation meteorological reports, directly to the cockpit. Flight crews operating properly equipped aircraft can receive the same information as their dispatch centers.

Data Communications (Data Comm): Data Comm enables pilots and air traffic controllers to communicate using digitally instead of verbally delivered messages. Eight air carriers have committed to equip their aircraft with Data Comm avionics with the help of an FAA

incentives program. The FAA is conducting trials at Memphis and Newark towers and will deploy Data Comm to towers at 56 airports by the end of 2016. Deployment will begin in 2015 at Salt Lake City, Houston Intercontinental and Houston Hobby airports.

Data Comm services conservatively are estimated to save operators more than \$10 billion over the 30-year life cycle of the program and result in future FAA savings of approximately \$1 billion in operating costs.



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New air traffic control tools: En Route Automation Modernization (ERAM) is a scalable automation system that serves as the platform upon which NextGen capabilities such as data sharing, digital communications and trajectory-based operations will reside. ERAM is operating at all en route centers, which control high-altitude traffic.

Terminal Automation Modernization and Replacement unifies the tools controllers use to obtain a complete picture of the airspace immediately around major airports. The new hardware and software package, called Standard Terminal Automation Replacement System (STARS), fuses surveillance and flight plan information. The FAA expects the 11 Terminal Radar Approach Control facilities that process 80 percent of U.S. air traffic to have STARS by October 2016.