

By William DeCota

It's been almost 52 years since the first satellite was placed into orbit by human endeavor. Today, thousands of satellites have been launched into orbit around the earth from more than 50 countries, yet, for the U.S air traffic control and navigation system, these might as well just be space debris.

While satellites have been used for a

large number of purposes — the military, communication, observation, weather and research — their enormous capability for safety, capacity and efficiency still has not been put into use as the means of guiding air traffic control and navigation.

Even the inventors, scientists and engineers who contributed to the

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development of radar, including Christian Hülsmeyer, who in 1904 was the first to use radio waves to detect the presence of distant metallic objects (ships in fog), would probably agree that radar and radio waves have seen their day. Satellites proved their navigational capability many years ago to the point that they routinely are used in other forms of navigation such as the GPS systems in cars. Yet, Next Generation Air Traffic Control systems, or NextGen, the term used for all of the technologies, systems and procedures that form the ongoing evolution of the national airspace system from a ground-based radar of air traffic control to a satellite-based system of air traffic management, is still \$20 billion and 20 years away.

Everyone acknowledges the need and the benefits of NextGen, which range from ensuring the economic viability of aviation to improving safety and protecting the environment. And everyone has talked about what they have done to advance it. Yet, it's clear that we still have a long way to go.

FAA points to the progress it has made. It is true that FAA has laid the groundwork for this dramatic transformation by supporting installation of new technologies and procedures such as implementation of Automatic Dependent Surveillance-Broadcast (ADS-B), which is a key component in moving air traffic control from radar to satellites. The agency also has worked toward implementation of System Wide Information Management (SWIM), which is another of the many technologies required to realize improved management of weather information in the national airspace. Performance-based navigation is also a key NextGen tool. This allows aircraft equipped with the latest flight management tools to fly more direct and precise paths, and reduce flight time and fuel use. Yet only one-half to three-quarters of commercial aircraft are equipped for these types of procedures.

The Joint Program Development Office (JPDO), made up of representatives from many partner agencies like the National Aeronautics and Space Administration, DOT, White House, Department of Defense, Department of Homeland Security, National Oceanic and Atmospheric Administration and others, has focused on the long-term vision of how these technologies get knit together in a single vision for the system architecture. But they estimate that it will take until 2018 or even 2025 for NextGen to be fully implemented — light years away for a passenger sitting on the tarmac at Newark Liberty International Airport today.

Congress and the administration point to funding allocations they have made to advance progress on the technologies to date. However, the \$767 billion economic stimulus bill provided meager resources for NextGen initiatives — and most of this went to new air traffic control towers. Congress has yet to pass the FAA reauthorization bill. The administration's fiscal year 2010 budget only proposed \$865 million for NextGen — less than 5 percent of the total amount it will take to implement the program.

The airlines have made some progress in retrofitting today's aircraft and ground infrastructure. The installation of new avionics in the cockpit will be necessary so that 100 percent of the fleet can fly area navigation (RNAV) and required navigation procedures (RNP). And airports will have to make more rapid advances in evolving ground infrastructure from radio wave-based instrument landing systems to satellite-driven, ground-based

augmentation systems.

Unfortunately, passengers do not see any progress. All they see are delays and congestion from a saturated air traffic control system that is no longer able to accommodate growth of U.S. aviation



with radar as its backbone.

We need NextGen now, not two decades from now.

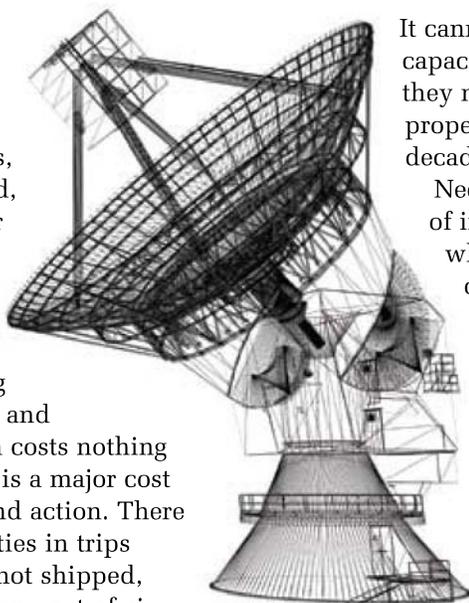
We need to transform the old technologies that rely on radar and radio waves with satellites. We need FAA to implement operational and procedural changes that will allow for closely spaced parallel landings and continuous descent approaches. Together these improvements will enable uninterrupted, real-time information to flow to air traffic controllers and pilots with exceptional accuracy. Using NextGen, planes can follow pre-determined flight patterns with a deviation no greater than the wingspan of the airplane. Such precision means safer and more efficient takeoffs and landings and shorter flight paths that save fuel, time and money.

Recognizing that every good cause deserves a champion, the Port Authority of New York and New Jersey formed the National Alliance to Advance NextGen that now has more than 500 members across the United States arguing for aggressive federal action for planning and implementing an upgrade of air traffic control. We are leading

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this coalition of an unprecedented array of aviation, business, labor and civic organizations, as well as elected officials. Members include AAAE, Accenture, American Express, General Electric Co., Hewlett-Packard, Motorola, ACI-NA, the U.S. Chamber of Commerce, the Greater New York Hospital Association, the U.S. Travel Association, the International Brotherhood of Teamsters, the Empire State Building and the Greater Houston Convention and Visitors Bureau. Joining the coalition costs nothing in terms of money or time, but there is a major cost if we don't join in numbers to demand action. There is an economic cost to our communities in trips not taken, business not done, goods not shipped, air service lost, and communities frozen out of air service to prime markets.

We need to urge the federal government to deploy this technology here in the nation's most congested airspace, like New York, where we have the worst delay situation.



It cannot just be rolled out at small, low-capacity airports. The feds have argued that they need to make sure the technology works properly, even though it has existed for a decade and is being used around the world.

Necessity often has been called the mother of invention. That's why it was the British who were the first to fully exploit the idea of radar as a defense against aircraft attack during World War II. It would seem that a different type of imperative — delays that continue to plague our U.S. aviation system and are estimated to cost the United States approximately \$9.4 billion annually — should be enough to motivate action on NextGen at all levels. Even Christian Hülsmeyer would be surprised to see his invention still in use more than 100 years later. 

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William DeCota is director, aviation department, Port Authority of New York and New Jersey. He may be reached at [wdecota@panynj.gov](mailto:wdecota@panynj.gov).



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