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Key Pillar Of New U.S. ATC System Lacks Funding

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The RTX Advanced Development and Engineering Center in Washington hosts an air traffic control tower simulator.

Credit: RTX Collins Aerospace

Two of the three pillars of the Trump administration's ambitious plan to transform U.S. air traffic management are progressing, officials report, but the third—and most critical—remains an unfunded concept.

A summit at U.S. Transportation Department headquarters in Washington on April 21 provided a one-year update on the most publicized part of the plan: modernizing National Airspace System (NAS) hardware by the end of 2028.

- U.S. officials provide a progress update on air traffic upgrade
- Hardware changes are on track for end-of-2028 target
- Procedural changes must still be defined and funded

Transportation Secretary Sean Duffy listed the accomplishments, including the replacement of almost 50% of copper wires with high-speed fiber, converting some 270 radio sites nationwide, installing new surface awareness systems at 54 airports and transitioning 17 air traffic control (ATC) towers to electronic strips from paper flight tickets and floppy disks.

Progress on part two—ensuring the FAA has enough properly trained staffers—is gaining momentum, FAA Administrator Bryan Bedford said. The agency added more than 2,000 controller trainees in 2025 and plans to hire an average of 2,300 annually through 2028.

"We are not taking our foot off the accelerator on solving the people issue, but part of the solution for the people issue is running the system right to begin with," Bedford said. "That brings us to the third pillar . . . redesigning the National Airspace System."

Completing the infrastructure upgrades—including 5,100 fiber connections, 27,600 radios, 600 radars and 460 digital voice switches—will bring much-needed system stability improvements. But the upgrades will not deliver meaningful efficiency improvements.

Step changes that improve air traffic management using proven technology are feasible. Expanding Automatic Dependent Surveillance-Broadcast In (ADS-B In) usage will improve both pilot and controller situational awareness. Congress is working on an ADS-B In mandate in response to the January 2025 midair collision of a U.S. Army helicopter and an American Airlines regional jet near Ronald Reagan Washington National Airport (DCA) (*AW&ST* Feb. 9-22, p. 22). The law will likely push for an equipage mandate around 2033.

The FAA could expand use of satellite-based systems, such as required navigation performance, which enables aircraft to fly precise paths without ground navigation aids, or the Ground-Based Augmentation System Landing System, which enhances GPS signals to allow interference-free precision approaches using less equipment than an instrument landing system.

These systems will all have a role in the future NAS, but they were not discussed at the summit.

The administration is banking on a departure from its largely reactive Traffic Flow Management System (TFMS) to a more advanced process. The FAA launched a vendor challenge to present concepts last September.

The upgraded system aims to improve surface safety and reduce congestion. Credit: JoePriesAviation.net

What Bedford does not want is a modernized traffic data flow system that focuses on existing problems. “We challenged them to say: ‘How can we build a system that fixes the problem before it happens?’” he said. “We didn’t know if we could do it or not, and the vendors that we brought in weren’t sure they could do it.”

Early signs are encouraging, Bedford said. Three unnamed vendors have developed digital replicas of the NAS, complete with 20 years of historical data.

“We have built reliable twins that allow us now to use predictive analytics” to optimize every flight plan for a given day, he said. “We’ll be able to have those planes optimized in sequence for their top of descent, landing on time into their final destinations. . . . If we do this correctly, and we believe the early indications are that we can, we’ll actually reduce costs for our stakeholders.”

Bedford said the effort blends the FAA’s trajectory-based operations approach with the latest technology. “We can get it done,” he said. “The technology is advanced in a way now that we feel highly confident that we can accomplish these goals.”

But should the FAA’s air traffic management goals include maintaining primary responsibility for system efficiency? “Bedford’s conflict prevention and predictive analytics are the right train but on the wrong track,” Michael Baiada, cofounder of ATH Group, tells Aviation Week.

Baiada spent three decades as a U.S. mainline pilot. He now dedicates his time to convincing airlines that although ATC’s safety-first instructions must always take priority, operators, not the FAA, should dictate optimal trajectories for each flight.

“Which aircraft lands [in what order] is critical to the success of the airline’s day-of operation, but this is completely ignored by the airlines,” he says. “The only group that can decide what is best for each aircraft based on the real-time internal business needs is [operators].”

ATH Group offers Baiada's concept as a cloud-based software package branded GreenLandings. The system compares each flight's progress with projected asset availability, from gates to airspace near the destination airport. If a mismatch is detected, the affected pilot is advised to adjust the aircraft's speed long before a conflict arises. The goal is optimal, dynamic flightpaths that avoid possible bottlenecks based on the operator's preferences, not ATC's needs.

The concept has been validated in several trials, including a 2012 Embry-Riddle Aircraft Arrival Management Systems (AAMS) study with Delta Air Lines and US Airways as part of the FAA's NextGen technology evaluations (*AW&ST* Jan. 14, 2013, p. 42). A year's worth of arrivals data—six months before the airlines implemented ATH Group's AAMS tool and six months after—"confirms the viability of the AAMS concept and provides evidence of measurable benefits, including monetized benefits that can be attributed to the AAMS," the report said.

Indra Group CEO José Vicente de los Mozos (fifth from left) and U.S. Sen. Jerry Moran (R-Kansas) (fifth from right) helped cut the ribbon on the new Indra Air Traffic facility in Olathe, Kansas. Credit: Indra Group

One study phase found the breakeven pilot-compliance point at about 8% of AAMS instructions. "While compliance rates depend on many factors that go beyond pilots' control (e.g., alternative ATC instructions), higher pilots' participation rates should be encouraged [because] even a small increase [in] optimized traffic seems to generate substantial system-wide benefits," the study said.

Despite the documented benefits, airlines have not embraced GreenLandings or similar concepts. "It really is all about the system, and the airlines don't see that," Baiada says. "Giving ATC control over the movement of your primary production process is a huge mistake. We're spending billions of dollars for the FAA to take control over the airline's primary production process, and nobody cares."

Baiada estimates the cost of covering the entire U.S. commercial fleet with GreenLandings would be less than $200 million.

Congress appropriated $12.5 billion for the ATC system overhaul in July 2025's One Big Beautiful Bill Act, allocating specific sums to identified needs. Nearly a third of funding is allocated for radar replacements, for instance. There is no money for new systems, including Bedford's proactive traffic management tool.

Duffy estimates that the modernization project, dubbed the Brand-New Air Traffic Control System (Bnatcs), will need another $20 billion for new and upgraded software, including the TFMS replacement.

"We are using older software," Duffy acknowledged. "Does it work? Yes. But when you look at how far software technology has advanced, that's where we need to go, and Bedford is dogged about this." Bedford, appointed administrator in July, said today's NAS is essentially an analog system that is "very reliable but still inefficient."

Moving from a “highly tactical” system to a strategic one would optimize the NAS and make it one that gets ahead of problems rather than reacting to them, thus reducing congestion and delays, Bedford said. It would be “the key to unloading all the benefits” of the ongoing construction and replacement work, he said.

The Transportation Department and FAA appointed the company Peraton as the project’s prime integrator in December. Bedford described Peraton, which manages about 50 vendors, as an “extension” of himself in terms of project oversight and progress information.

Like the ADS-B In initiative, the modernization program was begun in large part as a response to the 2025 DCA collision that killed all 67 people on both aircraft. The NTSB’s probe highlighted technological shortcomings in the U.S. ATC system. “Our people deserve the most technologically advanced airspace system,” Duffy said.

Bnatcs is intended to overhaul the system’s platform. At the recent summit, FAA Chief Technology Officer Rebecca Guy and Justin Ciaccio, president of national aerospace solutions at Peraton, outlined four of the 14 “work streams” that comprise the Bnatcs: wires, communications, radars and electronic flight strips.

Should airlines do more to help dictate when their flights arrive? Credit: JoePriesAviation.net

Contracts the FAA has awarded as part of the radar and communications work streams have underpinned an expansion of manufacturing capacity by the U.S. subsidiaries of European technology companies (*AW&ST* Jan. 26-Feb. 8, p. 64).

Rohde & Schwarz USA announced in April that it received an FAA contract valued at up to $4.9 billion to replace analog voice switches with digital systems featuring Voice over Internet Protocol (VoIP) capabilities. The company will supply its IP-based Certium system as the voice switch—a system that routes communications among controllers, pilots and other ATC facilities.

Rohde & Schwarz USA opened a new $40 million facility in Frederick, Maryland, this year to manufacture its Certium systems. The company has also expanded a site in Coppell, Texas.

The U.S. subsidiary of Munich-based Rohde & Schwarz received an initial contract from the FAA for voice switches in March 2025, followed by an indefinite-delivery, indefinite-quantity contract in December. The company says the voice switch program will create more than 200 highly skilled jobs, boosting its workforce in the U.S. to exceed 1,000 employees.

The first new Certium system entered service at Allegheny County Airport near Pittsburgh in September 2025. Rohde & Schwarz says other installations have been completed in Beaumont, Texas; Wilmington, Delaware; Lewiston, Idaho; and Bellingham, Washington.

Indra Air Traffic Inc. opened a new 118,000-ft.^{2} facility in Olathe, Kansas, in April, adding to its existing facility in nearby Overland Park. Spain's Indra Group acquired the latter facility from the former Selex ES in late 2022 and launched the U.S. subsidiary in 2023. The subsidiary is supplying digital ground-to-air radios and radar systems for the Bnatcs. Indra expects to hire more than 200 additional employees, nearly double its current workforce in the Kansas City metropolitan area, following the FAA contract awards.

Under its Nexcom Version 3 procurement, the FAA awarded Indra a contract in August 2024, during the Biden administration, valued at $244.3 million with options to replace ground-based UHF/VHF analog radios with digital, VoIP-capable radios.

What was originally an eight-year program has been compressed to 2.5 years and calls for Indra to deliver 25,000 radios by mid-2028, says José Jacinto Monge, chairman and CEO of Indra Group USA. The contract was restructured through a process that involved the FAA and Elon Musk's Department of Government Efficiency, Monge tells Aviation Week.

The FAA awarded Indra a $342 million Lot 1 contract in January under its Radar System Replacement program. The agency has selected Indra and RTX's Collins Aerospace to replace up to 612 primary radar and secondary surveillance radar systems across the U.S. by June 2028.

Both companies say they have been tasked with updating interior electronics—what amounts to the "brains" of legacy radar systems. Structural and mechanical elements, such as antennas, rotary joints and gearboxes, are not being replaced.

Monge expects that at least one Lot 2 contract will be awarded this year for more than 200 radars.

"One of the reasons we were successful in winning this program is we invested substantially ahead of time in order to have inventory," he says. "The supply chain was really our main concern. We made sure that we had enough to execute, especially in the first year."

U.S. FAA AIR TRAFFIC CONTROL AIR TRAFFIC MANAGEMENT ADS-B U.S. DEPARTMENT OF TRANSPORTATION