Boeing and United Airlines Test Advanced Digital Communications for the Future of Flight

- Boeing ecoDemonstrator Explorer airplane, a United 737-8, tested advanced digital communications to enhance operational efficiency
- Collaboration also included government agencies, Boeing suppliers, communications service providers and academia

SEATTLE, Dec. 10, 2025 /PRNewswire/ -- Boeing [NYSE: BA] and United Airlines have conducted flight tests to evaluate a modernized data communication system designed to improve information flow between the flight deck, air traffic control and airline operation centers.

With a United 737-8 jet serving as Boeing's 2025 ecoDemonstrator Explorer, the airline's pilots conducted test flights to assess Internet Protocol Suite (IPS) standards. The internet-based communications aim to enhance operational efficiency and flight safety while reducing air traffic congestion, fuel use, cost and emissions.

The 2025 Boeing ecoDemonstrator Explorer began flight testing in late October for about two weeks, with U.S. flights based in Houston and European flights based in Edinburgh, Scotland.

"Boeing is proud to lead the advancement of digital communications that significantly enhance safety and operational efficiency in commercial aviation," said Boeing Chief Technology Officer Todd Citron. "Our collaboration with United Airlines and the industry team is a pivotal step towards improving the reliability and speed of communication between the flight deck and air traffic control to enable safer, more efficient flight for the flying public."

"The ecoDemonstrator project is an outstanding collaboration to help support the ongoing upgrades within our air traffic control system and enhance safety for our customers and the global aviation community," said United 737 Chief Test Pilot Andy McKee. "After many months of careful planning, United is proud to have executed this flight test effort with Boeing and our other partners, leveraging the expertise of all our teammates to help shape the future of flight."

Since 2012, the Boeing ecoDemonstrator program has accelerated innovation by taking new technologies out of the lab and testing them in an operational environment to help solve real-world challenges for airlines and passengers. The ecoDemonstrator program has tested more than 250 technologies to enhance safety, reduce fuel use, emissions and noise and improve operational efficiency and the passenger experience. More information on the testing and the Boeing ecoDemonstrator program can be found here.

The latest ecoDemonstrator collaboration also included government agencies in the U.S. andEurope, Boeing suppliers, aircraft communications service providers and academia. The testing is the final step in a decade of development by Boeing and its partners to prepare this technology to enter operational service.

Participants in the ecoDemonstrator Explorer project also include:

- Collins Aerospace, Honeywell, SITA, Thales, Viasat,
- European Space Agency (ESA), Federal Aviation Administration, NASA Air Traffic Management – eXploration Project
- Embry-Riddle Aeronautical University

"Data communications are essential to the safety and performance of tomorrow's aircraft," saidNate Boelkins, president of Avionics at Collins Aerospace. "Our work with the ecoDemonstrator Explorer program advances performance-based connectivity and interoperability, helping create more reliable, secure and agile operations across global airspace."

"As the aviation industry ushers in a new era of digital communications, Thales is proud to play a key role in shaping the future of flight," said Nicolas Bonleux, vice president, Thales Aerospace Communications. "Our AVIATOR 200S system, the smallest and lightest cockpit IP Satcom, empowers operators like United to support more efficient operations while modernizing the flight deck with real-time connectivity for smarter, safer decision-making."

"As aviation evolves, so too does the need for communication systems that can support emerging requirements, such as trajectory-based operations, which demand technologies beyond current standards," said Yann Cabaret, CEO, SITA for Aircraft. "By partnering with Boeing on their ecoDemonstrator IPS Testing program, we at SITA are actively testing these innovative solutions in real-world, multi-link environments, advancing our shared vision for safer, more efficient, and better-connected skies."

"This partnership marks a crucial milestone towards a unified global solution for Air Traffic Management," said Laurent Jaffart, ESA director for Connectivity and Secure Communications. "Through this testing of interconnected digital communications, we are not only advancing operational efficiency but also moving towards safer and more efficient airspace. Ultimately, this will deliver significant economic benefits and help reduce emissions, supporting the aviation industry in achieving its sustainability goals."

"Viasat is excited to be partnering with Boeing on the ecoDemonstrator program to show how satcom datalink supports current and future Trajectory Based Operations," said Joel Klooster, senior vice president of Viasat Airline Operations and Safety. "Building off the European Space Agency's Iris Global program, now operational in Europe, this activity demonstrates the ability of Viasat's SB-S service to support the transition to ATN/IPS, the next generation of IP-based datalink critical to supporting increased air traffic volumes in a sustainable and efficient manner."

- Fact sheet: https://www.boeing.com/content/dam/boeing/boeingdotcom/principles/environment/pdf/ips-testing-fact-sheet.pdf
- ecoDemonstrator program backgrounder: https://www.boeing.com/content/dam/boeing/boeingdotcom/principles/environment/pdf/BKG-ecoDemonstrator_2024_Oct.pdf

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