Startical achieves first-ever VHF voice communication between pilot and air traffic controller via satellite

- The satellite, part of the ECHOES project, uses standard aeronautical VHF signals transmitted from space to demonstrate real-time communication between aircraft and air traffic control centers.
- Startical's technology aims to enhance flight safety, efficiency, and punctuality, benefiting both airlines and passengers. It will also facilitate the creation of new routes, contributing to reduced operational costs and lower CO_2 emissions.

Madrid, June 11th, 2025 – Aviation history has been made: Startical, the company founded by ENAIRE and Indra to provide communication and surveillance services from space, has successfully completed the first-ever real-time voice communication between a pilot and an air traffic controller using VHF signals transmitted via satellite. The breakthrough was achieved using IOD-1, Startical's first In-Orbit Demonstrator satellite, launched in March 2025 as part of the European-funded ECHOES project.

The first conversation took place during a functional test with actual traffic over the Atlantic Ocean, in which a pilot held a conversation with the controller based at ENAIRE's Area Control Centre in Gran Canaria (Canary Islands) following standard procedures. Several tests have been successfully carried out, including the participation of different airlines such as Iberia, Air Europa and TAP Air Portugal, proving the robustness of the system. "This is a first in aviation and opens a world of possibilities for safer, more connected skies. Importantly, aircraft require no new equipment, and neither pilots nor controllers need additional training," said Juan Enrique González Laguna, General Manager of Startical.

The test confirmed successful integration with ground-based systems and included precise and real time coordination between Startical's satellite operations center in Madrid, Indra's and ENAIRE's technical teams, air traffic controllers in the Canary Islands, and participating pilots.

IOD-1 is a satellite demonstrator equipped with an ADS-B surveillance system and a powerful 3-meters VHF deployable antenna and to confirm the feasibility of real-time communications between air traffic controllers and pilots. With these capabilities, Startical aims to enable seamless satellite-based communication and surveillance services anywhere in the world.

The satellite-based demonstration activities have received European support through the ECHOES project, which is co-funded by the European Union's Connecting Europe Facility (CEF), managed by the European Climate, Infrastructure and Environment Executive Agency (CINEA), with support from the SESAR Joint Undertaking.

Today, aircraft flying over oceans or remote regions lack real-time voice communication, requiring greater separation distances and limiting traffic capacity. Startical's solution will enable real-time voice and data exchange and continuous aircraft tracking worldwide—improving safety, enhancing airspace efficiency, and enabling faster responses to in-flight emergencies. It also facilitates more efficient routing, contributing to environmental goals.

Enrique Maurer, General Manager of ENAIRE, states: "The successful first-ever establishment of voice communications between an air traffic controller and a pilot using Startical represents a significant milestone, showcasing the success of a public-private partnership that positions Spain at the global forefront of technological innovation in air navigation and other potential modes of transport".

"This unique, world-first milestone confirms that we are making history in aviation by transforming the way we fly to enhance safety and flight management capacity, especially in remote areas. For Indra Group, it also showcases the enormous potential of combining our space expertise and capabilities with those of other business areas, such as air traffic management, to drive disruptive solutions that place Spain at the forefront of global innovation", highlighted José Vicente de los Mozos, Indra Group's CEO.

Startical's second demonstrator satellite, IOD-2, is scheduled for launch soon. Within the ECHOES framework, the tests continue in the South Atlantic corridor, covering FIRs over the Canary Islands, Azores-Santa Maria, Dakar Oceanic, Cape Verde, and Brazil's Atlantic. These trials involve collaboration with ENAIRE, NAV Portugal, ASA, ASECNA, and DECEA, showcasing strong international support for Startical's vision. The results from these tests will provide critical input for the global standardization and regulation of satellite-based air traffic communication systems.

These satellites are the foundation for the upcoming Startical constellation of over 200 satellites in low Earth orbit, which will deliver global coverage for real-time air traffic voice and data communications and ADS-B surveillance.

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Download the video of the first VHF transmission: https://we.tl/t-80RTpzLIQ4

About Startical

Startical is a public-private company created by Indra and ENAIRE, approved by the Council of Ministers, which will position Spain as a leader in global satellite services for air navigation. The initiative aims to deploy over 200 small satellites in low Earth orbit to improve air traffic management, extending coverage in oceanic and remote areas. Startical will pioneer by integrating ADS-B surveillance with VHF radio communication between controllers and pilots, following aeronautical standards. In 2025, it will carry out the first two launches to validate the technology in orbit. With these advancements, the initiative will enhance the safety, efficiency, and sustainability of global air traffic, facilitating the creation of new routes, and contributing to the reduction of operational costs and CO_2 emissions.

About ECHOES

The overall objective of ECHOES is to demonstrate the technical feasibility of a space-based solution for VHF communications (voice and datalink) for the aviation sector, which in combination with space-based ADS-B, would greatly contribute to ATM in terms of safety, capacity, cost-efficiency and environmental impact, focused mainly in oceanic areas. To provide the required services and test this technology, ECHOES will develop, manufacture and launch two satellites in a Low Earth Orbit, IOD-1 and IOD-2. These satellites will serve as the platform to test the technologies and services aimed at improving the Air Navigation Services. The project is led by Startical with participation of ENAIRE, Indra, Nav Portugal, Deutsches Zentrum für Luft- und Raumfahrt (DLR) and Mitiga Solutions. For additional information on the ECHOES project, please visit www.sesarju.eu/projects/ECHOES.

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