Startical Has Launched Its First Satellite, IOD-1

- The satellite, part of ECHOES project, will demonstrate real-time communication between aircraft and air traffic control centers using standard aeronautical VHF signals transmitted from space.
- 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, March 17th, 2025 – Startical, a company created by ENAIRE and Indra to optimize air traffic management from space, has launched its first satellite, the IOD-1 (In-Orbit Demonstrator-1), via launch integrator Exolaunch as part of the Transporter-13 rideshare mission with SpaceX. Startical has entrusted Danish company GomSpace with the satellite's manufacturing, while its specification and validation have been carried out by Indra with support from ENAIRE. Additionally, Exolaunch has been selected for the satellite's integration into the rocket and its subsequent deployment into orbit. The launch took place from Vandenberg Space Force Base in California.

Equipped with a powerful VHF antenna and an ADS-B surveillance system, IOD-1 aims to demonstrate the feasibility of real-time communications between air traffic controllers and aircraft using signals transmitted from space. The satellite is part of ECHOES project, which aims to gather evidence on how this satellite-based solution can enhance ATM services and generate positive environmental effects. The project is co-funded by the European Union through the Connecting Europe Facility (CEF) and managed by the European Climate, Infrastructure, and Environment Executive Agency (CINEA), with support from the SESAR Joint Undertaking.

The demonstrator will explore the limits of implementing these technologies on CubeSats, which are characterized by their standardized miniaturized format, low cost, and high efficiency. Placing it into orbit will validate a space-based solution designed specifically for air traffic management, fully compliant with existing aeronautical communication standards.

Currently, in transoceanic flights or over remote areas, aircraft traverse regions without real-time voice communication coverage. This requires them to maintain large separation distances to ensure safety, reducing airspace efficiency and limiting traffic volume management.

With Startical's proposed solution, aircraft positions will be continuously monitored via satellite, while real-time, high-quality voice and data communications between controllers and pilots will be possible even in areas currently lacking coverage. This technology will enable more efficient and safer air traffic management, particularly useful in critical situations such as route changes due to storms or onboard medical emergencies. Additionally, it will contribute to more sustainable aviation by allowing aircraft to select optimal routes, thereby reducing fuel consumption.

"We are proud to become a space-based company with the launch of IOD-1, a demonstrator that paves the way for the Startical constellation. With over 200 satellites in low Earth orbit, this constellation will provide global coverage, transforming air traffic management," said Juan Enrique González Laguna, General Manager of Startical.

Carsten Drachmann, CEO of GomSpace, states: "We appreciate Startical's trust in our 16U CubeSat for this mission, which will have a positive impact on the efficiency and sustainability of air traffic management. We look forward to seeing the performance of IOD-1 in orbit."

In February 2025, Startical introduced its second satellite, IOD-2, which has undergone testing at Spain's National Institute for Aerospace Technology (INTA) in Madrid. Like its predecessor, IOD-2 is part of the ECHOES project.

Following the deployment of the IOD-1 and IOD-2 demonstrators, Startical will conduct various proof-of-concept tests to confirm the technological viability. These studies will take place in the South Atlantic corridor, covering airspaces (FIR) over the Canary Islands, Azores-Santa Maria, Dakar Oceanic, Cape Verde, and the

Atlantic region of Brazil. The initiative will involve air navigation service providers such as ENAIRE, NAV Portugal, ASA, ASECNA, and DECEA, highlighting international collaboration and interest in Startical's vision.

Watch the launch of IOD-1 here: https://youtu.be/vTq_Pz1EiQE

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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. The project is co-funded by the European Union through the Connecting Europe Facility (CEF) and managed by the European Climate, Infrastructure, and Environment Executive Agency (CINEA), with support from the SESAR Joint Undertaking. For additional information on the ECHOES project, please visit www.sesarju.eu/projects/ECHOES.

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