



ENAIRe integrates the intelligence of the ground-air communications system to enhance operational efficiency

- This is a novel milestone that centralises and virtualises the computation of the ground-air communications system, which services the digital datalink, in a single centralised system
- It allows for the instant digital exchange of relevant data between aircraft and air traffic control units, optimising controller workload and minimising potential communication errors
- It lowers the cost of purchasing and maintaining different servers, as well as energy costs, by consolidating communications between pilots and controllers in a single physical unit

Madrid, 26 March 2024

ENAIRe completes the deployment of VHF (*Very High Frequency*) stations with a new unified processing system (*VHF ground computer*) that centralises the provision of ground-air communications through virtualisation. This modernisation in ground-air communications showcases the company's global leadership in aeronautical technologies, in keeping with its Strategic Plan, the 2025 Flight Plan.

This milestone combines two novel aspects in the air navigation system: the centralisation of the intelligence of the ground-air communications system, which supports the datalink services, and the virtualisation of its supporting infrastructure.

Traditionally, this computation was distributed over 29 VDL (VHF datalink) stations that ENAIRe has deployed throughout Spain in order to provide the ground-air coverage required to render the digital datalink service, in accordance with the European regulation in effect since 2018.

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This achievement keeps ENAIRe at the forefront of technology, research and air navigation management, as it evolves efficiently and securely in response to future demands.

Datalink service

The digital datalink service is emerging as a fundamental pillar in the field of air traffic control, offering significant advantages in the efficiency and safety of operations. It provides an alternative to traditional voice communications by allowing for the instant digital exchange of relevant data between aircraft and air traffic control units, optimising controller workload and minimising potential communication errors. It represents a significant adaptation to the requirements of increasing global air traffic, while enhancing operational safety levels.

Virtualisation

By centralising the processing of ground-air traffic communications, the service will rely on the virtualised infrastructure, which will host, also virtually, all of ENAIRe's centralised aeronautical communications systems:

- network management system,
- SWIM aeronautical messaging system,
- other *datalink* systems,
- meteorological information systems, and more.

Virtualisation has become a cornerstone in the world of technology, offering significant advantages. Consolidating multiple servers into a single physical unit lowers the acquisition and maintenance costs, as well as the energy costs, making the system more environmentally sustainable.

This option provides scalability, better resource management and, most of all, greater operational flexibility, which translates into more agility to adapt to changing scenarios. This advantage is particularly beneficial when implementing contingency solutions aimed at maintaining the continuity of critical air traffic control services in the event of any kind of incident.

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Benefits of the initiative

The centralisation of the processing systems that support this intelligence is consistent with ENAIRe's strategy to maximise the operational, supervisory and administrative efficiency of the different elements that comprise its air navigation system.

Integration and virtualisation also lead to greater scalability, streamlining the expansion of the radio stations in a way that is more cost efficient. In addition, that fact that many of these stations are located in the facilities of Aena, the airport manager, lowers the housing cost.

ENAIRe, which, through these stations, provides ground-air link services to companies that offer aeronautical communications services to airlines, can benefit them by integrating the deployment into their global networks.

It will also benefit the Startical satellite initiative, a joint venture of ENAIRe and Indra, and one of the most ambitious projects to improve air traffic management in oceanic areas. It will leverage this infrastructure by simplifying the most complex part of its development: the satellite constellation, since only the radios need to be deployed, keeping the system's intelligence on the ground.

About ENAIRe

ENAIRe is the air navigation service provider in Spain.

As a company of the Ministry of Sustainable Transport and Mobility, it provides en route control services for all flights and overflights from five control centres in Madrid, Barcelona, Seville, Gran Canaria and Palma, as well as approach services to every airport in the country.

In addition, 46 airports receive communication, navigation and surveillance services from ENAIRe, which also maintains their air traffic control systems, and 21 of them, including the country's busiest airports, rely on its aerodrome air traffic control services.

ENAIRe is Europe's fourth largest air traffic manager and participates in the A6 Alliance, a coalition of air navigation providers responsible for over 80% of European air traffic, and which is seeking to modernise the air traffic management system. It is also a member of other international alliances

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promoting the Single European sky, such as SESAR Joint Undertaking, SESAR Deployment Manager, iTEC, CANSO and ICAO.

ENAIRe, as the responsible agency identified by the Ministry of Sustainable Transport and Mobility to implement the U-Space system in Spain, will, through its digital platform, provide the Common Information Services (CIS), which are essential to facilitate U-space services to drones and Urban Air Mobility in cooperation with local air traffic services, so that all types of aircraft can fly safely in the same airspace.

ENAIRe has received the highest score in Europe on the aviation safety key performance indicator for four years in a row. It has also been awarded the EFQM 500 Seal for its safe, efficient, innovative and sustainable management of air navigation services.

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