



ENAIRe upgrades the Randa radar with 3D technology, a key element in air traffic control in the Balearic Islands

- After lifting the antennas, the protective radome for the new system has been installed and is scheduled to enter service in late April of next year
- The radome, or enclosing sphere, stabilises the signal and protects the antennas from mechanical degradation, as well as protecting technical staff during maintenance work at height
- The 3D (three-dimensional) technology represents a significant innovation that enhances the radar's performance

Madrid, 19 November 2025

ENAIRe, the state air navigation manager, is carrying out major maintenance work on the Randa radar (Mallorca), a critical facility in the management of air traffic in the Balearic Islands. The work includes replacing the large spherical structure that protects its antenna, a component technically known as the 'radome'. The introduction of 3D (three-dimensional) technology represents a significant step forward in innovation that improves the radar's performance.

ENAIRe's radars play a vital role in guaranteeing flight safety. Thanks to them, air traffic controllers can monitor the position of every aircraft at all times. In the case of the Randa radar, it is a key installation for surveillance coverage of air traffic across the Balearic archipelago.

Maintenance work on the Randa radar began months ago with the lifting of the antennas, a process successfully completed today, Wednesday. Installing the radome required a full day's work in favourable weather conditions.



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What is a radar's radome for?

Among the components of a radar structure, the most visible part of the tower consists of an antenna and a radome (the protective sphere). The main functions of this radome are:

- Physical protection. It shields the radar's components from weather-related damage such as rain, hail, snow and wind, and protects the antenna from knocks and external impacts.
- Signal integrity. It is designed so that radar signals pass through it with minimal distortion or attenuation, ensuring that the radar operates correctly.
- Protection for maintenance staff, as it allows them to carry out their tasks safely and sheltered from adverse weather conditions. This lets them perform technical work at height regardless of outside conditions, which is critical when the system must be restored to operation after a fault or when measurements are needed to guarantee the system's correct performance.

Why was the radome removed?

The work was necessary to ensure the performance of the Randa radar, as well as to implement a technological upgrade of the primary radar systems.

The installation, adaptation and configuration work required for the equipment replacement will take around 6 months in total. The new equipment is expected to be fully commissioned, with the improvements incorporated, by the end of April next year.

What does work of this nature involve?

To carry out this technological upgrade while minimising the impact during the renewal of the systems, ENAIRe has temporarily installed a provisional radar at the same site which, given its short-term nature, does not require a radome.

This has made it possible to maintain the coverage provided by the Randa radar, as this data is integrated into a network of surveillance systems that



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ensures the air traffic control service provided from the Balearic Islands continues to meet the highest safety and quality standards.

About ENAIRe

ENAIRe is the air navigation service provider in Spain.

As a company of the Ministry of Sustainable Transport and Mobility, it provides air traffic control services during the en route and approach phases of all flights to and from Spain and overflights. In addition, it manages communications, navigation and surveillance services from ENAIRe in the airspace and the entire AENA airport network in Spain and provides aerodrome air traffic control services in 21 airports, including the busiest.

ENAIRe is the fourth largest European air navigation service provider, and it is a member of international partnerships A6 Alliance, SESAR (Single European Sky ATM Research) Joint Undertaking, SESAR Deployment Manager, iTEC, CANSO (Civil Air Navigation Services Organisation) and collaborates closely with ICAO (International Civil Aviation Organization).

ENAIRe has received the highest score in Europe on the aviation safety key performance indicator for five years in a row. It has also been awarded the EFQM 600 Seal for its safe, efficient, innovative and sustainable management of air navigation services.

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