



ENAIRe puts a new radar into service to enhance air traffic surveillance in Gran Canaria

- This new 3D primary radar provides coverage for aircraft taking off and landing at Gran Canaria Airport
- It is co-located with a secondary radar and an Automatic Dependent Surveillance-Broadcast (ADS-B) system (satellite-based), both situated at Gran Canaria Airport
- It enhances the reliability of surveillance in the event of potential failures or the absence of transponder signals from aircraft
- This installation is part of a procurement project to deploy four state-of-the-art 3D primary radars, with a total investment of approximately €21 million

Madrid, 18 December 2024

ENAIRe, the air navigation service provider, commissioned a state-of-the-art primary radar at Gran Canaria Airport on 27 November that will enhance coverage and surveillance during approaches, take-offs, and landings at the airport.

The new 3D primary radar at Gran Canaria is capable of detecting traffic within a 100 nautical mile radius (approximately 185 km). This type of radar strengthens the air traffic detection capabilities of the current secondary radar (Mode S) at Gran Canaria Airport, providing the necessary and obligatory reliability for surveillance in the event of potential failures or interruptions in the transponders aboard aircraft.

The installation and commissioning of this radar is part of a project that includes the operational deployment of three other 3D primary radars, with a total investment of €20,898,529.

This information can be used, in whole or in part, without citing the source.

Campezo, 1 - 28022 Madrid. Spain. T. +34 912 967 551/53

E.prensa@enaire.es [@ENAIRe](https://twitter.com/ENAIRe)

PRESS RELEASE





This radar replaces the previous civil primary radar, installed in 2011, and represents a significant advancement in the technology used, transitioning from a 2D primary radar to a 3D radar. It features a radiation pattern based on electronic beams, which can be used to discriminate detections by altitude. This, along with advanced signal processing of detections, will improve its performance in the presence of wind turbines, a renewable energy source that is prevalent in the surrounding area.

With the introduction of the new primary radar, the surveillance systems at Gran Canaria, which already included a Mode S secondary radar with digital receivers and Automatic Dependent Surveillance-Broadcast (ADS-B) receivers, are now fully equipped with the latest technology, further enhancing safety in the airspace of the Canary Islands.

This 3D primary radar, manufactured by Indra, is the second radar of its kind to be deployed in ENAIRE's surveillance network.

The installation improves the international standing of ENAIRE as an air navigational manager in the field of surveillance, in line with European requirements to phase in new technologies that improve air traffic management in Europe.

Primary radars

The primary surveillance radar is a system that is used to detect and locate airborne traffic within its coverage radius, without the need for the aircraft to be equipped for this purpose or to participate in the detection process (non-cooperative surveillance), in contrast to surveillance technologies based on secondary radar or ADS-B receivers (cooperative surveillance).

The radiofrequency signal emitted by the primary radar bounces off aircraft flying within its line of sight, and the echo is received by the radar itself. The time it takes for the echo of the signal originally transmitted by the radar to return is used to calculate, or measure, the distance to the aircraft for each of the radar antenna's pointing angles (with continuous rotation of 360°). As a result, the position of the aircraft detected can be determined in terms of distance and azimuth (2D) by using conventional primary radar technology, particularly in the context of civil air surveillance.

This information can be used, in whole or in part, without citing the source.

Campezo, 1 - 28022 Madrid. Spain. T. +34 912 967 551/53

E_prensa@enaire.es [X@ENAIRe](https://twitter.com/ENAIRe)





The adaptation of military 3D primary radar technology to civilian settings also allows the altitude of aircraft detected by the primary radar to be determined through the application of various techniques. One of these involves the use of a radiation pattern consisting of several electronic beams, sequenced over time. These beams have a narrower width than conventional patterns and are aimed at different elevations. This can be used to fine tune the system configuration to reduce clutter, or unwanted signals reflected by the terrain, as well as to determine the altitude based on the beam through which each echo is detected. Altitude filters can then be applied to limit the anomalous effects on the radiofrequency signal caused by the proximity of wind turbines.

In the context of civil surveillance, the primary radar provides an additional layer of safety by enhancing the reliability of the surveillance function compared to operating solely with detections from the secondary radar, the primary source of surveillance information. It allows aircraft to be detected and tracked in cases where, due to the absence or failure of the onboard transponder, the aircraft cannot respond to secondary radar interrogations or automatically transmit ADS-B information. Primary radars are integrated into surveillance stations, which always include secondary radar and ADS-B, and provide service in TMAs with high traffic density.

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).



This information can be used, in whole or in part, without citing the source.

Campezo, 1 - 28022 Madrid. Spain. T. +34 912 967 551/53

E_prensa@enaire.es [X@ENAIRE](https://twitter.com/ENAIRE)



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 600 Seal for its safe, efficient, innovative and sustainable management of air navigation services.

PRESS RELEASE



This information can be used, in whole or in part, without citing the source.

Campezo, 1 - 28022 Madrid. Spain. T. +34 912 967 551/53

E_prensa@enaire.es  [@ENAIRe](https://twitter.com/ENAIRe)