

FACT SHEET

DATA SCIENCE, CLOUD INFRASTRUCTURE AND DEVELOPMENT

AIR CENTRE

To build the Atlantic Cloud, an interoperable, sovereign and energy-efficient infrastructure shared by AIR Centre partners. To develop data-driven applications combining analytics and IoT towards Earth system digital twins. To promote machine learning, AI and Julia for Earth observation.

HIGHLIGHTS



AIR Data Centre, Terceira

Towards an Atlantic Cloud

Established in 2021 at TERINOV, Terceira, the AIR Data Centre is built around a 100 Gbps internal network, with storage, GPU and ocean-modelling servers. It hosts the AIR Centre's operational services and a satellite Direct Receiving Station, and is the founding node of the Atlantic Cloud, a shared, standards-based infrastructure aligned with the European Open Science Cloud (EOSC). It currently serves 14 direct users from 8 institutions in 4 countries (Portugal, Brazil, Mexico and Nigeria).



JuliaEO Annual Meeting

Internal Waves Service

Launched in late 2024 with more than 20 leading institutions, including the University of Porto, IFREMER, ESA, NASA-JPL and the Woods Hole Oceanographic Institution, the Internal Waves Service uses machine learning to detect and study oceanic internal waves operationally at the planetary scale. In 2027, the AIR Centre will improve its reliability and performance and extend its coverage to coastal areas in the Gulf of Guinea.



Vineyard sensors with LoRaWAN connectivity

Smart Alerts in the Azores

The Azores LoRaWAN Network, run as a cooperative with TERINOV, local municipalities and Lotaçor, links field sensors on Terceira and Santa Maria to shared data platforms. It supports the SAU–UNICOL Alert System, which warns cattle farmers by SMS of toxin and heat-stress risks to their herds, and the Agrodigital Vinhas dos Açores platform, which alerts growers to vineyard disease risk.