

CASE STUDY



SPACE-BASED ADS-B TO ENHANCE OPERATIONAL EFFICIENCIES IN CENTRAL AMERICAN PACIFIC OCEANIC AIRSPACE ACROSS BELIZE, COSTA RICA, EL SALVADOR, GUATEMALA, HONDURAS AND NICARAGUA

Corporación Centroamericana de Servicios de Navegación Aérea (COCESNA) is the air navigation service provider (ANSP) for Belize, Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua. As a non-profit, public service organization of the Central American Integration System (SICA), COCESNA provides its member States with air traffic services, aeronautical telecommunications, nav aids and aeronautical information for the upper airspace.

Spanning the entire Central American flight information region (FIR), COCESNA covers over 2.6 million square kilometers of terrestrial and oceanic airspace across member States, the Caribbean Sea and the Pacific Ocean. Its central location in the center of the Americas positions COCESNA as a major air traffic control provider for routes throughout the entire Caribbean and Latin America, in addition to providing air navigation services to aircraft flying between North and South America.

CURRENT LIMITATIONS OF AIR TRAFFIC SURVEILLANCE

COCESNA has invested heavily in surveillance technology and has dependable radar and ground-based ADS-B throughout its member States.

However, COCESNA's coverage is limited throughout the vast oceanic region off the west coast of Guatemala, El Salvador, Honduras, Nicaragua and Costa Rica. This section of the Pacific Ocean, which accounts for the majority of COCESNA's total airspace, has no real-time surveillance.

FUTURE PLANS FOR SPACE-BASED ADS-B

Aireon's space-based ADS-B offers COCESNA full visibility in the currently unmonitored oceanic airspace in the Pacific Ocean.

Complete, real-time air traffic surveillance will allow air traffic controllers (ATCs) to move from purely procedural routes to more tactical control of flight operations. They will be able to better serve airlines by optimizing flight levels, decreasing separation minima, directing more efficient flight plans, supporting user preferred routing (UPR) and improving handoffs to neighboring countries, reducing risks and improving efficiency.

In addition to deploying space-based ADS-B for standard ATC surveillance, COCESNA plans to utilize Aireon data to support airspace optimization, enhance cross-border safety initiatives and enable common situational awareness and collaborative decision making (CDM) throughout member States. The data may also be used for Air Traffic Flow Management (ATFM) improvement.

THE BENEFITS

With Aireon, COCESNA will have complete surveillance coverage in the entirety of its airspace. Space-based ADS-B data will allow COCESNA to remove bottleneck waypoints in places previously managed by procedural routing. COCESNA seeks to lead neighboring Central, South American and Caribbean States to implement space-based ADS-B. Broad adoption by and regional cooperation of ANSPs with responsibility over the Pacific Ocean airspace will lead to compounding benefits, especially for collaboration among ANSPs and safety and efficiencies for aircraft operators active in the region. Additionally, the deployment of space-based ADS-B will support the CANSO ATFM Data Exchange Network for the Americas (CADENA) initiative, promoting collaboration and coordination between States in the region regarding ATFM and CDM measures.

