

CASE STUDY



SPACE-BASED ADS-B TO REVOLUTIONIZE HOW DC-ANSP ENSURES THE HIGHEST LEVELS OF SAFETY AND EFFICIENCY IN AND AROUND CURAÇAO REGION

The Dutch Caribbean Air Navigation Service Provider (DC-ANSP) manages air traffic services within the Curaçao flight information region (FIR). Covering over 300,000 square kilometers, Curaçao FIR is adjacent to Venezuela, Puerto Rico, Dominican Republic, Haiti, Jamaica and Colombia, which requires DC-ANSP to manage traffic of critical routes between the United States, Central America, South America, the Caribbean and Europe.

CURRENT LIMITATIONS OF AIR TRAFFIC SURVEILLANCE

Managed from the three Air Traffic Control (ATC) facilities, DC-ANSP's ground-based systems can service up to 250NM from the radar site on the island of Curaçao. However, with the majority of the FIR being oceanic, the northwestern part of DC-ANSP's airspace is unmonitored.

Despite the lack of real-time surveillance in the aforementioned northwestern sector, the volume and complexity of air traffic through Curaçao FIR has been steadily increasing for years, putting significant strain on DC-ANSP's ATC professionals and carriers, especially as they coordinate with neighboring ANSPs. So as not to compromise the quality of the ATC service for the region, DC-ANSP has been directing travel through procedural routes that require aircraft to fly at inefficient altitudes and speeds to maintain safe separation.

THE BENEFITS

Implementing space-based ADS-B surveillance in the northwestern sector will have the immediate effect of providing DC-ANSP accurate coverage where there was previously no radar coverage.

Complete situational awareness will allow DC-ANSP to make data-informed decisions about how and where to reduce separation so that aircraft may fly preferred routes, which will save time, fuel and operational costs. With the ability to increase capacity, space-based ADS-B will help relieve the current constraints on DC-ANSP's air traffic controllers.

Space-based ADS-B will also allow DC-ANSP to facilitate more efficient collaboration with neighboring airspaces. As DC-ANSP controls key intercontinental routes and abuts multiple adjacent FIRs, the coverage provided by Aireon will enhance the information-sharing and transitions between DC-ANSP and other ANSPs in the region. Implementing this real-time data will also decrease the likelihood of operational errors.

FUTURE PLANS FOR SPACE-BASED ADS-B

Responsible for guiding critical routes between the United States, Central America, South America, the Caribbean and Europe—DC-ANSP is sure to solidify its position in providing safe and efficient air navigation service.

Aireon's data provides a world of opportunity for DC-ANSP to improve its service and decision-making. In addition to opening opportunities with regard to capacity management and routes, this deployment of space-based ADS-B data in the service procedures will allow the organization to set new standards for excellent surveillance operations in the region. This deployment preempts Curaçao's January 1, 2020 equipage mandate that requires all aircraft flying in Class A in the northwestern airspace of the Curaçao FIR must have ADS-B.

