

AIRPORTS AUTHORITY OF INDIA LEADING FROM THE FRONT



DEPLOYING SPACE-BASED ADS-B IN ONE OF THE WORLD'S DENSEST OCEANIC AIRSPACES

The Airports Authority of India (AAI), a Miniratna, central public sector undertaking, under the Ministry of Civil Aviation, Government of India, is committed to creating, upgrading, maintaining and managing the civil aviation infrastructure, both on the ground and air. AAI provides Air Traffic Management (ATM) services over the entire terrestrial portion of India and the adjoining oceanic areas covering nine million square kilometers of airspace, as delegated by the International Civil Aviation Organization (ICAO).

AAI leads the way in the region with their adaptation of new technologies and has achieved many international awards for their contribution to the global aviation industry. Introduction of Automatic Dependent Surveillance-Broadcast (ADS-B) through ground sensors in the domestic airspace, deploying satellite communication technologies, implementing surface technology like Advanced-Surface Movement Guidance and Control System (A-SMGCS), Ground-Based Augmentation System (GBAS) and airspace optimization through GPS-Aided GEO Augmented Navigation (GAGAN) and Central Air Traffic Flow Management are just a few recent notable program implementations.

CURRENT AIR TRAFFIC SERVICES

SURVEILLANCE LIMITATIONS IN OCEANIC AIRSPACE

Current air traffic surveillance in AAI's Mumbai, Chennai and Kolkata's oceanic regions, are largely based on voice or data-link position reporting using procedural Air Traffic Control (ATC) separation services. Although AAI is able to provide radar

separation services over nearly 100 percent of its domestic airspace, and ADS-B has been introduced in much of the region AAI still manages and operates a significant volume of high seas international airspace without real-time visibility.

India has become the third largest aviation market in the world with a rate of sustained double-digit growth for the last 50 months. Forecasts suggest that this growth will continue, and Indian airspace is going to experience additional congestion. This will require extra capacity both in airspace and airports to meet the demand, including continued growth on overflights between South Asia, the Middle East and Europe.

FUTURE PLANS FOR SPACE-BASED ADS-B

In order to maintain a safe and efficient operation, while accommodating the growing capacity, AAI plans to introduce Aireon's space-based ADS-B for real-time air traffic surveillance over its entire oceanic region, as early as the end of 2019.

Space-based ADS-B will cost-effectively provide coverage for the six million square kilometers of airspace in Mumbai, Chennai and Kolkata oceanic regions. Implementation of space-based ADS-B will enable ATC to utilize enhanced safety tools and reduce separation of aircraft in this dense airspace, allowing for the efficient growth of capacity, while substantially reducing risk through the availability of real time air traffic surveillance services.



AIRPORTS AUTHORITY OF INDIA LEADING FROM THE FRONT

Over time, AAI expects that the use of space-based ADS-B will improve operators' flexibility to fly user preferred, better routes and offer optimal altitudes and speeds to maximize flight efficiency. This will allow for enhanced coordination and collaboration with neighboring countries and an improved handoff between the domestic and oceanic sectors and quicker response time to emergency and distress situations with search and rescue.

Using real-time air traffic surveillance over the oceans, paired with AAI's advanced communications capabilities, will allow AAI to safely reduce aircraft separation to 15 Nautical Miles (NM)

longitudinal and lateral separation for Controller-Pilot Data Link Communications (CPDLC) equipped aircraft. In situations where aircraft operate with Direct Controller-Pilot Communications (DCPC) over VHF, the standard separation minimum of five NM will remain applicable.

AAI will continue to offer its customers the best services and support ICAO's global harmonization initiatives. AAI is proud to lead from the front with its motto "Service with Safety."

Image Below: Mumbai, Chennai and Kolkata Oceanic Airspaces

