



Air Traffic Management Systems

Why in News

Recently, the [Airports Authority of India \(AAI\)](#), under its R&D initiative, has signed an agreement with [Bharat Electronics Limited \(BEL\)](#) to jointly develop indigenous **Air Traffic Management System**.

- Under this Agreement, BEL and AAI will jointly develop **Civil Air Traffic Management System (ATMS)** with **Advanced-Surface Movement Guidance and Control System (ASMGCS)**, a complex ground surveillance system that manages air traffic at airports and in Indian Civil Airspace for safe operation of flights from take-off to landing.

What is the Air Traffic Management System?

- Air traffic management and control primarily **involves the control of traffic in and around airports, airport terminals and airspace**.
- Air traffic controllers that work from **Air Traffic Control (ATC) towers are responsible for ensuring a safe distance between all aircraft**, both in the air and on the ground, to prevent accidents.
- Air traffic controllers **prevent collisions and maintain an orderly flow of air traffic**. The commonly used technologies and systems in air traffic management and control include:
 - Surface movement and surveillance [radars](#)
 - Holographic radar
 - Navigation and surveillance systems
 - Voice communication control systems
 - Ultra-high frequency (UHF) and very high frequency (VHF) communication systems
 - Flight data information display equipment
 - Radio modems and transceivers
 - Collision avoidance systems
 - Noise monitoring systems
 - Meteorological sensors and displays
 - Airfield lighting control and monitoring
 - Training management software

What are the Objectives and Significance of the Agreement?

- It will help in leveraging the complementary strengths and capabilities of BEL and AAI and enabling both to **address airport modernization opportunities**.
- It will **ensure safety, maintain separation between multiple aircraft, and efficient management of operations** at the airport and Indian airspace.
- It aims to upgrade its **ANS (Air Navigation Services) Infrastructure** in systematic, efficient and cost-effective manner and in compliance with the [‘Atma Nirbhar Bharat’](#) missions of the Government of India.
- It will **reduce AAI’s foreign dependency for procurement** of ANS infrastructure.

[Source: PIB](#)

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