

GOVERNMENT OF INDIA
MINISTRY OF CIVIL AVIATION
RAJYA SABHA
UNSTARRED QUESTION NO : 644
(TO BE ANSWERED ON THE 10th February 2025)

**MODERNISATION OF AIR NAVIGATION SERVICES AND
UPGRADATION OF AIR TRAFFIC MANAGEMENT**

644. DR. ASHOK KUMAR MITTAL

Will the Minister of CIVIL AVIATION be pleased to state:-

- (a) the steps being taken to modernize air navigation services and upgrade air traffic management systems to cope with the rising number of airspace users;
- (b) initiatives being considered to adopt advanced technologies, such as AI and satellite-based navigation and optimize airspace utilization, if any;
- (c) the measures in place to address delays and inefficiencies in the current air traffic management framework to ensure smoother operations and minimize disruptions; and
- (d) the accountability measures in place to ensure that failures in air traffic management do not compromise passenger safety?

ANSWER

MINISTER OF STATE IN THE MINISTRY OF CIVIL AVIATION

(Shri Murlidhar Mohol)

(a) to (c): The Airports Authority of India (AAI), as the sole Air Navigation Service Provider (ANSP) in India, continuously modernizes air navigation infrastructure and upgrades air traffic management systems to meet the growing demands of air travel. This is an ongoing process driven by traffic demand, technological advancements, commercial viability, and operational requirements. Key initiatives include:

1. New IP-based Voice Communication Control Systems (VCCS) and IP-based VHF radios have been deployed at multiple locations to improve VHF coverage and air-ground communication performance.
2. AAI has initiated the installation of a new pan-India Aeronautical Message Handling System (AMHS) to replace the existing AMHS and AMSS systems, improving the performance of aeronautical, flight, and meteorological message

exchanges.

3. Automatic Dependent Surveillance-Broadcast (ADS-B) ground stations, which utilize GPS and satellites for determining aircraft positions, have been commissioned at 21 airports. Installation at 15 additional locations has been completed. ADS-B enhances surveillance capabilities, reduces delays, and improves flight safety.

4. Performance-Based Navigation (PBN) procedures have been implemented at 62 airports, reducing reliance on sensor-specific routes and procedures, thereby optimizing operations and lowering costs. Many of these procedures utilize the indigenous GPS Aided Geo Augmented Navigation (GAGAN), a regional satellite-based augmentation system (SBAS).

5.22 RNP-Z (LPV) procedures based on GAGAN have been implemented at 14 airports to enhance navigation precision.

6. A Central Air Traffic Flow Management (C-ATFM) system has been established to manage demand and capacity imbalances at airports, optimizing the utilization of airspace and airport resources as per ICAO guidelines.

7. Airport Collaborative Decision Making (A-CDM) has been implemented at 9 airports namely, Mumbai, Delhi, Kolkata, Hyderabad, Jaipur, Trivandrum, Hyderabad (Shamshabad), Guwahati, and Ahmedabad, to reduce ground delays.

8. Arrival Manager (AMAN), a software tool for optimizing the sequencing and spacing of arriving aircraft, has been deployed at high-traffic airports such as Delhi, Mumbai, Chennai, Kolkata, Bengaluru, and Hyderabad to enhance operational efficiency.

(d): The accountability measures are in place to ensure that failures in Air Traffic Management, during the provision of Air Traffic Services do not compromise the safe operation of aircraft. Incidents like separation minima infringements, runway incursions/excursions, and aircraft accidents are thoroughly investigated by the Directorate General of Civil Aviation (DGCA) and/or the Aircraft Accident Investigation Bureau (AAIB). Based on the investigation findings, corrective actions are taken to prevent recurrence and enhance operational safety.
