

**GOVERNMENT OF INDIA  
MINISTRY OF CIVIL AVIATION**

**Rajya Sabha**

**UNSTARRED QUESTION NO. : 1127**

**TO BE ANSWERED ON THE 13th February 2023**

**AIR NAVIGATION INFRASTRUCTURE IN THE COUNTRY**

**1127. SHRI AYODHYA RAMI REDDY ALLA**

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

- (a) whether Government has taken any steps to improve the air navigation infrastructure and develop indigenous technologies with respect to the same, if so, the details thereof and if not, the reasons therefor;**
- (b) the details of air navigation infrastructure developed in the country during the last three years, year-wise; and**
- (c) the details of advanced air navigation technology adopted and used in the country?**

**ANSWER**

**Minister of State in the Ministry of CIVIL AVIATION  
(GEN. (DR) V. K. SINGH (RETD))**

**(a) to (c): Development of air navigation infrastructure at airports is a continuous process and is undertaken by the Airports Authority of India (AAI) from time to time depending upon commercial viability, traffic demand, availability of land etc.**

**AAI is the sole Air Navigation Service Provider (ANSP) in the country. Being the ANSP, AAI has procured advanced air navigation technology as detailed below to manage the Air Traffic in India:**

- 1. Installed state-of-the-art Air Traffic Service Automation System at 44 Airports across India for safe and efficient air traffic management.**
- 2. Installed seamless coverage of Surveillance System (Monopulse Secondary radar), Primary Surveillance Radar, Automatic Dependent Surveillance-Broadcast (ADS-B) (ground &**

space based) Equipment, Airport Surface Movement Ground Control Radar (ASMGCS), Navigation Equipment and Communication equipment for Air Traffic Control.

**3. Deployed Airport Collaborative Decision Making (ACDM) system at 7 airports. The ACDM system enables optimal use of the runway and facilitates an efficient departure sequence of air traffic minimizing delay at departure gate.**

**4. Deployed Air Traffic Flow Management (ATFM) System to manage the nationwide flow of air traffic by monitoring air traffic demand at major airports and balancing with the capacity of those airports & airspace across the country. The ATFM along with ACDM systems help in assessing and reducing delays of air traffic across the country, thereby enhancing safety, saving fuel and reduction in CO2 emission.**

**5. For indigenous development of Air Traffic System (ATS) Automation System under 'Make in India' initiative supporting 'Atmanirbhar Bharat' mission of Government of India, AAI and Bharat Electronics Ltd (BEL) have entered into an Memorandum of Understanding in March, 2022. A prototype ATM Automation system developed under MoU has been installed at Bhubaneswar Airport on 29th Dec. 2022 on trial basis.**

**6. IP Based VHF Communication is being used for seamless VHF coverage for aircraft.**

**7. ATS Inter-facility Data Communication (AIDC)**

**8. Air Space Management technique such as Upper Airspace Harmonization (UAH), Flexible Use of Airspace (FUA) of military airspace and restructuring of air-routes, reduction of separation minima etc. are being applied to improve efficiency. As a result, 128 Conditional Routes have been established in coordination with Defence Authorities.**

**9. The GAGAN (GPS Aided Geo Augmented Navigation) system is a Space Based Augmentation System (SBAS) developed jointly by AAI and ISRO.**

**The details of Air navigation infrastructure in the last three years has been given in Annexure.**

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**Annexure referred to parts (a) to (c) of the Rajya Sabha Unstarred Question No.1127 for 13.02.2022.**

**AIR NAVIGATION INFRASTRUCTURE IN THE COUNTRY.**

A. Installation of Instrument Landing System (ILS)			
S. No.	Year		
	2020	2021	2022
1	Jammu (Replacement)	Bhubaneshwar (Replacement)	Udaipur (Replacement)
2	Hubli (New)	Jharsuguda (New)	Varanasi (Replacement)
3		Trichy (Replacement)	Ranchi (Replacement)
4		Bhopal (Replacement)	Begumpet (Replacement)
5			Belgavi (New)
6			Hollongi (New)
B. Installation of Doppler Very High Frequency Omni Range (DVOR)			
1	Udaipur (Replacement)	Bhopal (Replacement)	Jalgaon (Replacement)
2	Barapani (Replacement)	Goa (Replacement)	Bellary (Replacement)
3		Bhavnagar (Replacement)	Kalaburgi (Replacement)
4		Baroda (Replacement)	Madurai (Replacement)
5		Kancheepuram (Replacement)	Patna (Replacement)
6		Kadappa (New)	Hollongi (New)
7		Tuticorin (New)	Kullu (New)
8		Coimbatore (Replacement)	
9		Shimla (Replacement)	

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