International Civil Aviation Organization

Tenth Meeting of the Surveillance Implementation Coordination Group (SURICG/10)

Bangkok, Thailand, 21 - 23 April 2025

Agenda Item 8: Update on surveillance activities and explore potential cooperation opportunity

SURVELLIANCE ACTIVITIES IN INDIA

(Presented by India)

SUMMARY

This paper provides information on surveillance activities in India.

1. INTRODUCTION

1.1 Surveillance control procedures will be used by ATC in preference to non-surveillance control procedures whenever ATS or the aircraft served will gain operational advantage. Surveillance systems in air traffic control service are used to Improve airspace utilization, Reduce delays and Enhance safety. Airports Authority of India (AAI) has been entrusted with the job of providing Air Traffic Management i.e. Air Traffic Services & Air Traffic Flow Management services in India. The ATM services are provided by AAI within entire Indian airspace over continental and oceanic areas, state and private aerodromes. The total area of Indian airspace is 2.8 Million Square NM, out of these 1.7 Million Square NM is oceanic and rest 1.1 Million square NM is continental.

1.2 The unprecedented growth in air traffic witnessed in India and the forecast growth has put enormous pressure on Airspace capacity and requires optimum utilization of available air space while maintaining and enhancing safety. To cope up with these exponential increase in traffic density, apart from installation of new surveillance sensors, the current surveillance capabilities are continuously being upgraded and augmented with state of the art surveillance systems. Old RADAR, ADS B and ASMGCS systems are also being replaced with new systems with latest features. Adoptions of new and improved procedure go hand in hand with induction of new equipment.

2. DISCUSSION

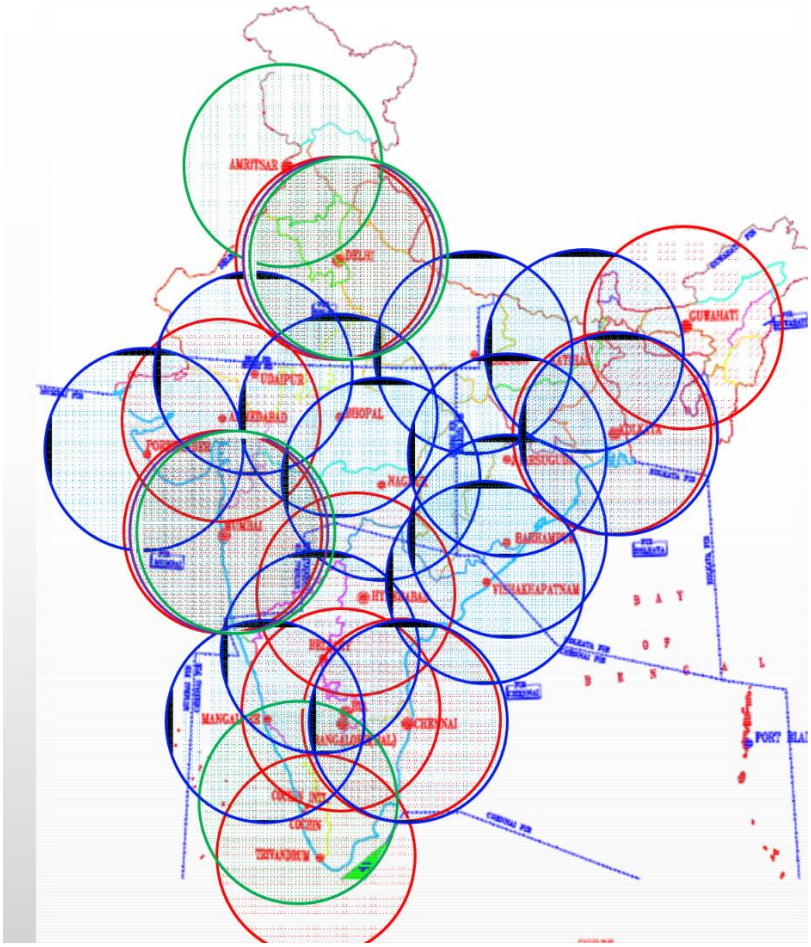
2.1 India has undertaken various projects for improving surveillance coverage over Indian FIR, paving way for immediate/future deployment of efficient ATC procedures resulting in significant reduction of applicable separation minima. The current status on provision of surveillance facilities and on-going projects including planned activities to be implemented are as mentioned below.

2.2 CURRENT OPERATIONAL INFRASTRUCTURE PROJECTS AND PLANNED SURVEILLANCE

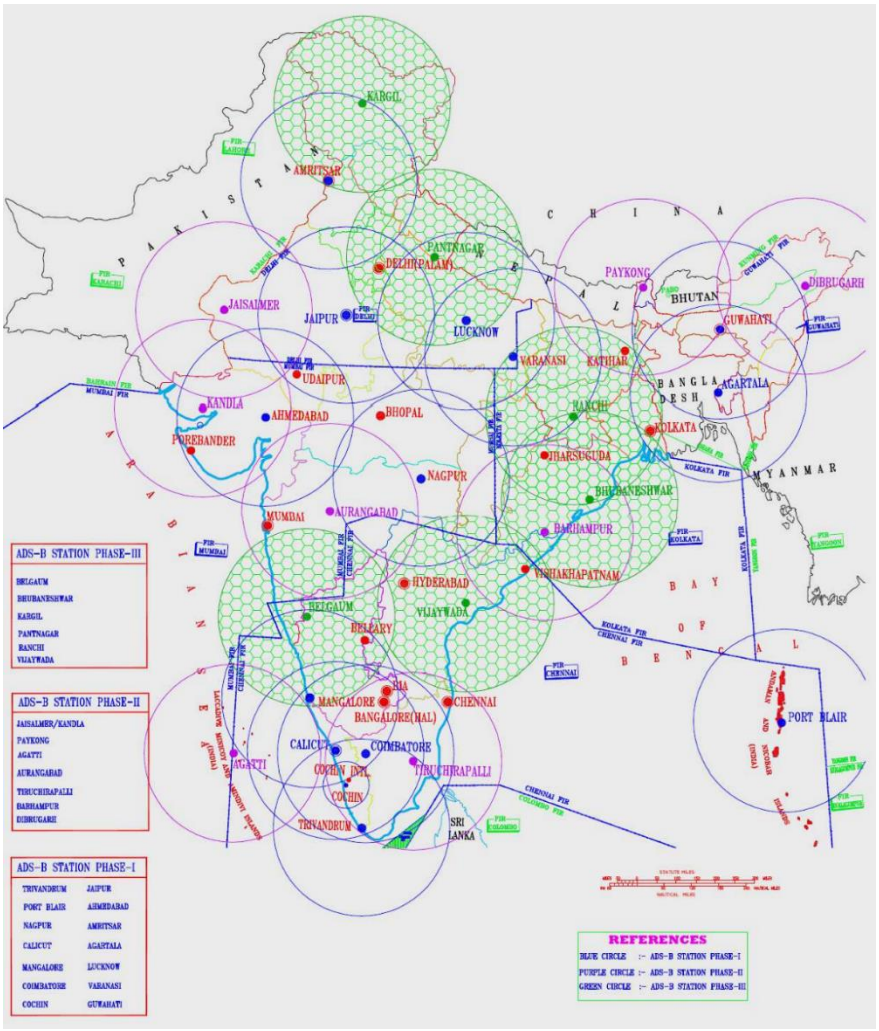
Presently almost 100% of Indian FIR is covered by surveillance facilities and around 70% of which is covered by redundant surveillance. Various surveillance facilities are as under:

Facility	**No. of facilities in operation presently**	**No. of facilities planned to be added**	**Remarks**
PSR collocated with SSR Radar	20	13	
SSR	13	4	Out of existing 13 SSR, 9 sites will be replaced with newer version of SSR.
Ground Based ADS-B	36	11	Out of 36 existing ADS B, work has been initiated to replace 21 sensors with newer versions.
ASMGCS	13	-	In 5 of the biggest airports process has been initiated for upgrading existing ASMGCS to level-4 standard.
Space based ADS-B	To bolster surveillance capabilities over the oceanic airspace India has entered into a contract with M/S Aireon in July' 2019, to receive the Space based ADS-B data broadcasted by aircrafts over the oceanic regions of Indian FIRs (Mumbai, Kolkata and Chennai) and also remote area (Guwahati FIR). This now enable real time delivery of ADS-B information to Air Traffic Control (ATC) to support aircraft surveillance across all oceanic regions.		

RADAR COVERAGE



ADS B COVERAGE



2.3 SURVEILLANCE DATA DISTRIBUTION

India has built an extensive data Distribution Network (In collaboration with HARRIS & Indian Telcos) to allow for Surveillance data sharing between any interested ATC centres. With the Indian Telecom infrastructure moving away from point to point links, over to Cloud, this redundant Surveillance network is being extensively used to distribute all of the surveillance sensors to Area control center's offering seamless surveillance coverage over full Indian FIR.

2.4 CONCLUSION

2.4.1 India continues to augment its capabilities for surveillance of its airspace as well as airfield ground movements and is now making greater use of ADS-B and Mode S Radars with introduction of space based ADS-B for oceanic airspace surveillance.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper; and

b) discuss any relevant matter as appropriate

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