



International Civil Aviation Organization

**THE SEVENTH MEETING OF PERFORMANCE BASED NAVIGATION
 IMPLEMENTATION COORDINATION GROUP (PBNICG/7)**

Video conference, 21 – 23 October 2020)

Agenda Item 4: States' PBN Implementation Progress (LPV)
INFORMATION PAPER (IP)

(Presented by INDIA)

SUMMARY

This paper provides information on the progress & update on the development of SBAS (GAGAN) LPV procedures in INDIA after review meeting of (PBNICG/6) held in Bali, Indonesia, 24 - 26 April 2019.

1. INTRODUCTION

1.1 India has identified constraints & challenges of implementing LPV (GAGAN) procedures and exploring the possibility of implementing LPV procedures in coming months after mitigating those constraints.

2. DISCUSSION

2.1.

SL NO	STAKE HOLDERS	ACTION REQUIRED	STATUS IN INDIA
1	DGCA/ Regulator	Rules for SBAS operations & Airworthiness Approval	1) GAGAN is certified for APV 1 service over designated portion of Indian landmass. 2) DGCA has issued operational circular for Aircraft and Operators regarding approval for RNP-APCH Operations down to LP and LPV Minima using GNSS Augmented by SBAS for AIRWORTHINESS & OPERATIONAL requirement. 3) Regulator has guidelines on the design, validation, approval & promulgation of LPV IFPs
2	Airports	WGS84 surveyed aeronautical & obstacles data	1) AAI has published a guideline for aeronautical survey based on ICAO DOC 9674-AN/946 (WGS-84 Manual) addressing requirements for GNSS navigation specifications and accuracies. 2) Guidelines help qualified surveyors approved by AAI to conduct the aeronautical survey of the

			aerodromes and the specified areas outside the aerodrome boundaries for identification of obstacles
3	ANSP	Development & validation of IFPs-	<p>1) AAI had planned implementation LPV procedures of 160 instrument runway ends (54 domestic & 106 International) by 31/03/2020 as per PBN implementation progress report dated 04 April 2019.</p> <p>a) 65 LPV approaches were submitted to DGCA for approval.</p> <p>b) DGCA has approved for SIM TRIAL</p> <p>2) AAI has shortlisted a contractor for Simulator evaluation, validation & development of NAV Database for LPV procedures</p> <p>3) AAI also has its own B350 aircraft equipped with SBAS receiver (GPS4000S) for flight validation.</p>
4	ANSP/ Airports	<p>1) Safety assessment</p> <p>2) Training/ sensitization</p>	<p>1) Concerned airport will carry out safety assessment through their designated SMEs as per Corporate Safety Assessment Manual</p> <p>2) ATCOs will be sensitized through interactive classes conducted by flight procedure designers before implementation.</p>
5	Airspace Users (Airlines operator)	Avionics availability & certification	National Civil Aviation Policy of India prescribes <i>“All aircraft being registered in India from 30th June 2021 will mandatorily have to be suitably equipped with GAGAN equipment.</i>

2.2.

AAI is also exploring with DGCA to proceed directly for flight trials of LPV procedures wherever instrument runway ends are equipped with LNAV & LNAV/VNAV procedures or satisfactory flight simulator evaluation of the LNAV & LNAV/VNAV procedure for speedy implementation of LPV procedures as per DGCA guide lines.

3. ACTION REQUIRED BY THE MEETING

- 3.1 The meeting is invited to:
- a) Note the information contained in this papers; and
 - b) Discuss any relevant matters as appropriate.
