



International Civil Aviation Organization

**The Ninth Meeting of the ICAO Asia/Pacific Performance-Based Navigation Task Force (PBN/TF/9)**

Bangkok, Thailand, 27-30 March 2012

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**Agenda Item 5: State/Industry Updates**

**PROGRESS ON BANGLADESH PBN IMPLEMENTATION ROADMAP**

(Presented by Bangladesh)

**SUMMARY**

The PBN implementation roadmap of Bangladesh was developed in April 2011 and was submitted to the ICAO Asia Pacific Regional Office for comments. The roadmap was rated as 'marginal'. This paper presents updated information on progress in PBN implementation in Bangladesh.

This paper relates to –

**Strategic Objectives:**

- A: *Safety – Enhance global civil aviation safety*
- C: *Environmental Protection and Sustainable Development of Air Transport – Foster harmonized and economically viable development of international civil aviation that does not unduly harm the environment*

**Global Plan Initiatives:**

- GPI-5 RNAV and RNP (Performance-based navigation)
- GPI-11 RNP and RNAV SIDs and STARs

**1. INTRODUCTION**

- 1.1 The global expansion of passenger movement & transportation of goods by air has added more air traffic and ultra modern new generation wide bodied aircraft movement throughout the world. This rapid growth of air traffic has increased traffic movement in the South-Eastern region of Asia; consequently the traffic movement through Dhaka FIR and all three international airports in Bangladesh has been increased.
- 1.2 This rapid growth in traffic levels are leading to air traffic congestion and adding demands on more airspace capacity and emphasizing the need for the optimum utilization of the available airspace in Dhaka FIR. But the existing operational concept, available navigation aids infrastructure and technologies are unable to meet the requirements for safe operation.
- 1.3 There are constraints on the available airspace, trained/skilled human resources, infrastructure, CNS/ATM etc. in Bangladesh, and the existing operations are still fully dependent on the ground based infrastructure. Study on present ground based navigation infrastructure shows that, there are scopes to restructure existing routes and procedures to fly point to point in more direct routes to save time & fuel and avoid air traffic congestion. Bangladesh believes that PBN concepts and its proper implement can address to solve these problems.

## 2. DISCUSSION

- 2.1 It is understood that, GNSS based PBN offers a number of advantages over the sensor-specific conventional navigation method of developing instrument approach procedures, airspace and obstacle clearance criteria. Implementation of GNSS based PBN in Bangladesh will reduce the need to maintain routes and procedures based on existing ground navigation aids, and their associated costs and will improve airspace capacity by reducing lateral and longitudinal separation between air-routes & aircraft, and the reduced separation will enable to accommodate more traffic in the same airspace. Implementation of optimal flight paths by RNP approach procedures, SIDs & STARs based on GNSS waypoints will enhance aviation operational safety by decreasing ATC and pilot workload, reduce needs for ATC-Pilot communications & radar vectoring, and increase airborne capability of the aircraft. Not only in the fields of aviation operation, the implementation of optimal flight paths of PBN will improve environmental pollutions and other operational benefits by lowering operational costs through fuel savings, noise reduction, less carbon emission, and enable to achieve globally harmonized navigation standards.
- 2.2 The PBN implement roadmap of Bangladesh was developed in April 2011 and sent to ICAO Asia Pacific office for comments. As per the roadmap Civil Aviation Authority of Bangladesh (CAAB) will implement GNSS based PBN in three phases: **near term (2011–2012), medium term (2013–2015) and long term (2016–2018)**. Each term separately deals with the implementation of PBN specification related to enroute, Terminal and Approach phase of flight.
- 2.3 The near-term focuses on selected application of RNAV in some selected Routes and RNP approaches in selected Airports, the medium-term focuses on application of RNAV & RNP in some selected Routes and RNP approaches in all international Airports, and the long-term phase targets integration of RNP approaches with APV & GBAS and proper CNS/ATM in Bangladesh Airspace.
- 2.4.1 In December 2011 we came to know that the PBN roadmap of Bangladesh was accepted rated as 'marginal'. Before knowing the comment, Civil Aviation Authority of Bangladesh (CAAB) and COSCAP SA jointly organized a workshop on the PBN implementation in Bangladesh held at Dhaka from 23-25 August. The Workshop was conducted by Flight Procedure Planning (FPP) office, Beijing, China. Mr Dave VanNess, Manager FPP office and Mr. Bob Kenedy, ICAO PBN expert was present in the workshop. A total of 32 Participants, 12 from different Airlines, 1 from Bangladesh Air Force, 1 from COSCAP-SA and 18 Officers from CAAB, attended the workshop. As there was no personnel trained in PANS-OPS instrument procedure design before 2011 and the present 3 procedure designers are still awaiting to undergo On-the-Job training, the workshop concluded with some recommendations. Some major recommendations are-
- (a) Operational Implementation of RNP approach (LNAV and LNAV/VNAV) to Jessore (VGJR) Rwy 16 and Rwy 34, by 23 August 2012:
  - (b) Purpose of implementing VGJR first is that it is a busy airport, with considerable military traffic, that most operators use and has only VOR and NDB approaches.
  - (c) CAAB to send two procedure designers, to FPP for Procedure Design OJT, tentatively scheduled for January 2012. Additional two to three procedure designers to attend OJT later in 2012. Dates to be coordinated with the FPP.

- 2.3 For the OJT of procedure designers, CAAB contacted FPP office and 3 procedure designers are going to attend OJT scheduled to be held from 16-27 April 2012. After returning, they will start implementation of RNP approach procedure from Jessore Airport. Once successfully implemented in Jessore, Bangladesh will start implementing RNP approach procedure from Hazrat Shahjalal International Airport, Dhaka to the other international and domestic airports.

### **3. ACTION BY THE MEETING**

- 3.1 The meeting is invited to:
- a) note the information contained in this paper; and
  - b) discuss/advice any relevant matters as appropriate.

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