



International Civil Aviation Organization

The First Meeting of ICAO Asia/Pacific Performance based Navigation Implementation Coordination Group (PBNICG/1)

Beijing, China, 10-12 March 2015

PBNICG/1-IP/03
10/03/2015 - 12/03/2015

Agenda Item 3: Global and Regional PBN Updates and States' PBN Implementation Progress

PBN IMPLEMENTATION IN THE MALDIVES

(Presented by Maldives)

SUMMARY

This paper presents an update on the efforts and progress made by Maldives in Implementing Performance Based Navigation (PBN)

1. INTRODUCTION

1.1 In line with the ICAO Asia-Pacific Regional PBN Implementation Plan, Maldives adopted a 3-phased approach in the implementation of PBN:

- o Short Term (2008-2012)
- o Medium Term (2013-2016)
- o Long Term (Beyond 2016)

1.2 The Maldives PBN implementation is based on the following objectives:

- a) To ensure that the implementation of the navigation portion of the CNS/ATM system is based on clearly established operational requirements;
- c) To avoid unnecessarily imposing the mandate for multiple equipment on board or multiple systems on the ground;
- d) To avoid the need for multiple airworthiness and operational approvals
- e) To prevent unnecessary costs for the country as well as for airspace users.

2. DISCUSSION

The Implementation

2.1 As part of the Short Term plan, in 2009, SIDs and STARs and associated approach procedures were published for Male International Airport.

2.1.1 RNAV1(GNSS) for SIDs and STARs

- 2.1.2 Approach procedures were RNP APCH, LNAV (NPA/GPS) and LNAV/VNAV (APV Baro).
- 2.1.3 By 2010, as agreed between the ANSPs in the region, 5 previously published conventional (oceanic) routes were redefined RNP 10 (RNAV 10)
- 2.1.4 Under the program ‘Indian Ocean and Arabian Sea Strategic Partnership to Reduce Emission’ (INSPIRE), Maldives established series of boundary Waypoints separated by 60 nm to allows RNAV 10 capable aircraft transiting Male FIR between FL285 - FL460 to flight plan from point of Entry to point of Exit without having to adhere to fixed ATS routes.

2.2 By the end of 2013, RNP APCH procedures were published for 5 domestic airports. These newly built airports have no ground-based navigation aid and all the procedures are based on GNSS.

2.3 On 13th Nov 2014, PBN (RNP1) Domestic routes were implemented. These parallel routes proved to be a major breakthrough in terms of safely and efficiently managing domestic IFR traffic flying between Male International and 6 smaller airports, where there is limited or no surveillance coverage.

Plans for 2015

2.4 Before the end of 2015, RNP APCH procedures will be published for the remaining domestic airports served by NDBs; and all the NDBs will be decommissioned.

Challenges

2.5 We published the VNAV criteria for only one domestic airport. The rest we published only the LNAV criteria. The reason is most of the ATR and Dash 8 aircraft in the domestic fleets cannot fly APV Baro-VNAV. However, the lack of significant terrain allow us to publish MDA of around 400 feet which many pilots consider very appropriate noting good weather throughout the year.

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 matters as appropriate.

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