International Civil Aviation Organization

The Second Meeting of ICAO Asia/Pacific Performance based Navigation Implementation Coordination Group (PBNICG/2)

Bangkok, Thailand, 11-12 June 2015

Agenda Item 9: Regional and Sub-regional Implementations of PBN in En-route Airspace

PBN City Pair Male-Colombo

(Presented by Maldives)

SUMMARY

This paper presents a concept to introduce a pair of PBN unidirectional parallel routes (City Pair) between Male (VRMM) and Colombo (VCBI) for more efficient flow of air traffic.

1. INTRODUCTION

The main objective is to introduce a pair of unidirectional, parallel routes (City Pair) between Male (VRMM) and Colombo (VCBI) for more efficient flow of air traffic.

The route G465 is the most direct route between VRMM and VCBI. However, a portion of this route passes through Chennai FIR. While Chennai ATC do not exercise control over the aircraft on G465 (aircraft are directly transferred between Male and Colombo), operators are obliged to pay navigation charges to Chennai.

Following a request by Sri Lankan airline, a new route, M512, between VRMM and VCBI, apparently to avoid Chennai FIR, was implemented in 2005.

M512 is a bi-directional route. The boundary point ANIVE is 143NM from KAT; hence aircraft from VCBI to VRMM, which often request to cruise at FL340 or FL360, are released on climb by Colombo ATC. M512 is a busy route compared to any other route which connects VRMM to other cities in the region. Therefore, the probability of conflicting reciprocal traffic is more frequent.

A pair of PBN unidirectional, parallel routes (City Pair) between VRMM and VCBI, is expected give significant operational benefit for airlines. It will also improve safety; and will reduce the workload for the controllers.

2. DISCUSSION

Design Concept

2.1 Two unidirectional routes (M656 and M757) based on PBN Navigation Specification

2.2 Alternative to G465 for aircraft between Male and Colombo

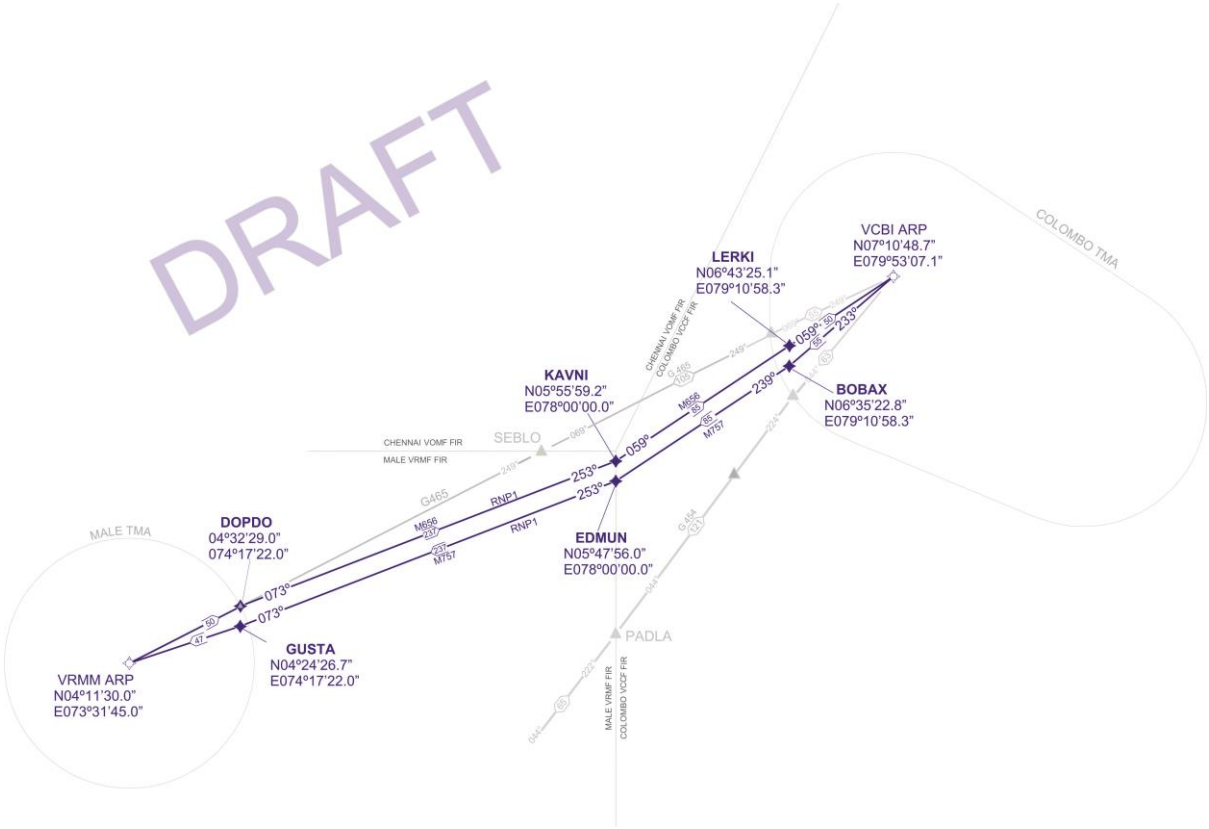
2.3 M512 will be obsolete

2.4 Track miles comparison:

G465 = 421 NM (transiting Chennai FIR)

M656 = 422NM

M757 = 424NM



Navigation Specification

2.5 We may consider RNP1 for the Colombo-Male City Pair. This is based on Maldives' experience in implementing RNP1 for domestic en route.

If the city pair can be defined by RNP1, aircraft established on M656 between DOPDO and LERKI are considered laterally separated from aircraft on M757 between GUSTA and BOBAX

2.6 If ICAO regulations do not allow RNP1for a regional route pair similar to this, then the routes can initially be defined as GNSS routes and later as RNP 2 routes.

Separation ensured based on the latest amendments to Pans ATM Doc 4444:

a) Minimum 7NM for lateral spacing between the two routes;

b) Standard vertical separation;

2.7 One aircraft maintains level while other aircraft affects level change to ensure lateral separation while vertical separation does not exist

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper;

b) discuss any relevant matters as appropriate; and

c) ICAO APAC RSO is requested to communicate this concept with the stakeholders in Sri Lanka and facilitate a possible discussion.

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