



International Civil Aviation Organization

**EIGHTEENTH MEETING OF THE COMMUNICATIONS/NAVIGATION
AND SURVEILLANCE SUG-GROUP (CNS SG/18) OF APANPIRG**

Asia and Pacific Regional Sub-Office, Beijing, China
(21 – 25 July 2014)

Agenda Item 6: Navigation

6.4) Review Navigation Strategy

NAVIGATION STRATEGY FOR THE ASIA/PACIFIC REGION

(Presented by Secretariat)

SUMMARY

This paper presents the Navigation Strategy for the Asia/Pacific Region adopted by APANPIRG/24 meeting for review by the meeting.

1. INTRODUCTION

1.1 The Navigation Strategy for the Asia/Pacific Region was updated by the Seventeenth Meeting of CNS Sub-Group of APANPIRG in May 2013 based on a proposal from PBNTF/10 meeting. The revised Navigation Strategy was adopted by APANPIRG/24 under Conclusion 24/41. The revised Navigation Strategy has been posted on the ICAO APAC website:
<http://www.icao.int/APAC/Pages/edocs.aspx>

2. DISCUSSION

2.1 The revised strategy adopted by APANPIRG/24 is provided in the **Attachment A** to this paper for review by the meeting.

2.2 In the new Regional Air Navigation Plan Vol. I for all ICAO regions recently adopted by the ICAO council, the following two paragraphs were highlighted

2.2.1 Planning of aeronautical radio navigation services should be done on a total system basis, taking full account of the navigation capabilities as well as cost effectiveness. The total system composed of station-referenced navigation aids, satellite-based navigation systems and airborne capabilities should meet the performance based navigation (PBN) requirements for all aircraft using the system and should form an adequate basis for the provision of positioning, guidance and air traffic services.

2.2.2 Account should be taken of the fact that certain aircraft may be able to meet their navigation needs by means of self-contained or satellite-based aids, thus eliminating the need for the provision of station-referenced aids along the ATS routes used by such aircraft, as well as the need to carry on board excessive redundancies.

3. ACTION REQUIRED BY THE MEETING

3.1 The meeting is expected to review the Navigation Strategy for the Asia/Pacific Region provided in the **Attachment A** to this paper.

REVISED NAVIGATION STRATEGY FOR THE ASIA/PACIFIC REGION

Considering:

- a) the material contained in the Performance Based Navigation Manual (Doc 9613) for enroute, approach, landing and departures operations;
- b) operators are equipped to support PBN operations;
- c) GNSS is the navigation sensor for RNP;
- d) APV operations may be conducted with either BARO-VNAV or augmented GNSS;
- e) Augmented GNSS to support Category I operations will be available by end 2012 and Category II and III operations by 2015;
- f) ILS is capable of meeting the majority of requirements for precision approach and landing in the Asia-Pacific Region;
- g) MLS CAT III is operational;
- h) the need to maintain aircraft interoperability both within the Region and between the Asia/Pacific Region and other ICAO regions and to provide flexibility for future aircraft equipage.
- i) single-frequency GNSS may be susceptible to radio frequency interference and ionospheric disturbances;

Strategy

- i) Convert from terrestrial-based instrument flight procedures to PBN operations in accordance with the Asia/Pacific Seamless ATM Plan;
- ii) retain ILS as an ICAO standard system for as long as it is operationally acceptable and economically beneficial;
- iii) implement GNSS with augmentation as required for APV and precision approach or RNP AR (Authorisation Required) operations where it is operationally required and economically beneficial;
- iv) implement the use of APV operation in accordance with the Asia/Pacific Seamless ATM Plan;
- v) rationalize terrestrial navigation aids, retaining a minimum network of terrestrial aids necessary to maintain safety of aircraft operations;
- vi) protect all the Aeronautical Radio Navigation Service (ARNS) frequencies; and
- vii) ensure civil-military interoperability.