



International Civil Aviation Organization

**FOURTEENTH MEETING OF THE
COMMUNICATIONS/NAVIGATION/SURVEILLANCE
AND METEOROLOGY SUB-GROUP OF
APANPIRG (CNS/MET SG/14)**



Jakarta, Indonesia, 19 – 22 July 2010

Agenda Item 5: Navigation

5) other radio navigation issues

OUTCOMES FROM THE ICAO NAVIGATION SYSTEMS PANEL

(Presented by Australia)

SUMMARY

This report covers some of the outcomes from the recent Navigation Systems Panel (NSP) Meeting in Montreal and makes recommendations for CNS/Met to consider.

This paper relates to:

Strategic Objectives:

- A. Safety – Enhance global civil aviation safety
- D. Efficiency – Enhance the efficiency of aviation operations

Global Plan Initiatives:

- GPI – 5 RNAV AND RNP (Performance Based Navigation)
- GPI – 21 Navigation

1. Introduction

1.1 The ICAO NSP reviews and develops standards for both conventional ground-based navigation aids and satellite systems as well as develop various documents and manuals such as the GNSS Manual. The meeting held in Montreal in May, 2010 raised a number of issues that are applicable to the APAC region.

2. Discussion

2.1 Beyond the Annex 10 SARPS, the GNSS Manual, Doc 9849 is the primary source of ICAO advisory material on GNSS systems and their operational implementation. The NSP recognised that the existing Manual is now somewhat dated, and that new GNSS systems are either coming on line, or will be operational in the near future. The ICAO Secretariat has engaged support from a previous NSP Member to update the manual. Significant system changes include the update of existing core satellite systems and the additional of new systems such as Galileo, the introduction into service of new SBAS and GBAS systems and the launch of new dual frequency GPS satellites. It was also noted that GNSS now provides a core element of some surveillance technologies such as ADS-B

and Multi-lateration (timing). Comments or material for the manual revisions should be sent to Mr Ross Bowie at ross.bowie@sympatico.ca

2.2 One paper at the NSP highlighted the current hurdles to the implementation of GNSS operations and the meeting decided that ICAO Secretariat would solicit comment from regions, States and industry on this issue. It was noted that these hurdles would almost universally apply to PBN implementation. The meeting also extensively discussed the PBN/APV Resolution and its practical application in the regions. There was some likelihood that at the forthcoming ICAO Assembly that some review of the Resolution may be proposed.

2.3 GBAS systems have now been certified and are likely to be in operational use by the end of 2010 at various locations around the world. One GBAS operator had noted that analysis of system down-times had shown these were caused by low-power GPS jammers. Despite being illegal in many States, these systems are readily available at low cost (around \$US40). These jammers are largely being used to thwart GPS based vehicle tracking technologies. As noted in the GNSS Manual, satellite navigation due to its low power is susceptible to interference and States should ensure that action is taken to prevent the proliferation of these systems. This can be done by ensuring adequate legislation banning their availability and use is in place and is properly enforced.

3. Action by the Meeting

3.1 The meeting is invited to take the following action:

- a. Note and discuss the contents of this paper.
- b. Support the work to recognise hurdles to the adoption of GNSS and update the GNSS Manual.
- c. Note the ICAO Assembly papers when they become available and if practicable, support at APANPIRG the development of a coordinated regional response on any PBN or APV proposals.
- d. Note the concern over the availability and proliferation of low power GNSS jammers and their potential impact on GNSS and PBN implementation and encourage States to take appropriate mitigation.
