



International Civil Aviation Organization

**The First Meeting of the APANPIRG ATM Sub-Group  
(ATM /SG/1)**

Bangkok, Thailand, 20 – 24 May 2013

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**Agenda Item 4: ATM Systems (Modernisation, Seamless ATM, CNS, ATFM)**

**COMMUNICATION/NAVIGATION AND SURVEILLANCE SUB-GROUP OUTCOMES**

(Presented by the Secretariat)

**SUMMARY**

This paper presents information on the outcomes of the Seventeenth Meeting of the Communications/Navigation and Surveillance Sub-Group of APANPIRG.

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-9 Situational awareness

GPI-11 RNP and RNAV SIDs and STARs

GPI-12 Functional integration of ground systems with airborne systems

GPI-17 Data link applications

GPI-21 Navigation systems

GPI-22 Communication infrastructure

GPI-23 Aeronautical radio spectrum

**1. INTRODUCTION**

1.1 The Seventeenth Meeting of the Communications/Navigation and Surveillance Sub-Group (CNS/SG/17) was held in Bangkok, Thailand, from 13 – 17 May 2013.

**2. DISCUSSION**

2.1 A summary of the outcomes of the CNS/SG/17 meeting is provided at (**Attachment A**).

**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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## Introduction

CNS SG/17 meeting considered 29 WPs and 20 IPs under 11 agenda items, and developed 19 draft Conclusions and draft Decisions for consideration by APANPIRG.

### Version 0.8d of the Asia/Pacific Seamless ATM Plan

The meeting reviewed the document and provided comments with respect to the CNS related contents. Hong Kong China and Japan provided their comments for consideration and improvement. Some proposed changes were accepted, and clarifications on some paragraphs were provided to the meeting.

### Proposed APAC Internet Protocol (IP) Virtual Private Network (VPN)

On behalf of an ad hoc working group members from Australia, China, Fiji, Hong Kong, China, Japan, New Zealand, Republic of Korea, Singapore and Thailand, USA presented a proposal for an IP VPN using a private commercial network to provide service for Air Traffic Service Message Handling System (AMHS) and possible future IP-based services. The proposal was made in accordance with a decision of ATNICG/8 meeting.

A dedicated, common network operated by a service provider is an approach to be considered to replace current configuration. Common networks had successfully been employed in other ICAO regions (e.g. PENS in the EUR Region and MEVA in the CAR Region).

A number of steps were suggested to be taken to further pursue this direction. As result of the discussions, CNS SG endorsed the recommendation to APANPIRG for creation of a dedicated group (such as Task Force) of Subject Matter Experts (SMEs) that would further consider and investigate the proposed solution and issues described above, and develop a detailed proposal.

### Inter-regional APAC/NAT AIDC Document Updates

The meeting was informed about the activities of the inter-regional AIDC task force (IRAIDCTF) and the latest draft of the Pan Regional APAC/NAT AIDC ICD for information. The Task Force was established in accordance with NAT SPG Conclusion 48/28 and APANPIRG Conclusion 23/20. The first meeting of the IRAIDTF (IRAIDTF/1) was held on 16-18 January 2013 in ICAO Paris Office. The IRAIDTF WebEx/1 meeting was held on 27 February 2013. IRAIDTF WebEx/2 meeting was held on 10 April 2013. The next WebEx meeting was scheduled on 12 June 2013 at 08:00 UTC. Acknowledging the value of having a face-to-face meeting, the AIDC Task Force considered necessary to convene the Second Meeting of the Task Force in the third quarter of 2013. Accordingly, the letter of invitation for the 2nd meeting of the APAC/NAT AIDC Task Force was issued on 9 May 2013 by ICAO APAC Office. The meeting is scheduled to be held from 22 to 26 July 2013 at ICAO Regional Office Bangkok, Thailand.

The latest version 0.7 of the PAN Regional ICD for AIDC was discussed. States and administrations were encouraged to participate in the activities of the IRAIDCTF and provide contribution through the matrix provided in the Appendix B to the IP/16.

## GOLD

Edition 2 of Global Operational Data Link Document (GOLD) (separate working paper is provided to the ATM SG/1). CNS SG formulated Draft Conclusion 17/5 for consideration by APANPIRG. It is recommended ATM SG also endorse this draft Conclusion.

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Satellite Voice Guidance Material (SVGGM) Amendment

The meeting reviewed the proposed amendment proposed by NAT Region to the 1st Edition of the SVGGM adopted by APANPIRG/23 meeting in 2012. The meeting was informed that the OPLINKP, at its meeting in March 2013, agreed that SVGGM should become an ICAO document with its own document number. It was also agreed that the SVGGM be circulated among the OPLINKP members for review and comments to develop a draft amendment for the OPLINKP/WG/WHL6, planned for October 2013. The target date for publication of SVGGM is 1st quarter, 2014. ICAO HQ had already distributed the SVGGM to OPLINKP members requesting comments. In view of foregoing, the meeting decided to defer its endorsement for the proposed amendment by the NAT Region.

Deployment of 8.33 kHz channel spacing in the band 117.975-137 MHz

ICAO Regional Office was requested to issue a letter to States/Administrations for nomination of spectrum management expert members of a spectrum review working group to study the requirement of 8.33 kHz spacing in the Asia/Pacific Region.

Regional Aeronautical Mobile Service (AMS) Strategy

The meeting reviewed and updated the regional strategy on AMS and Satellite voice. The meeting noted the background information of AMS strategy presented by the Secretariat. The strategy was adopted by APANPIRG/18 meeting in 2007 under Conclusion 18/29. It was also noted that APANPIRG (Conclusion 14/17) in 2003 developed an approach on use of SATVOICE. The meeting agreed a revised AMS strategy as developed by an ad hoc working group established during the meeting (namely Australia, New Zealand, Singapore and USA) and formulated a Conclusion for consideration by APANPIRG.

GNSS Landing System Seminar and Report of PBN/TF/10

The meeting reviewed PBNTF outcomes and endorsed the relevant draft Conclusion of the TF including:

- (PBN/TF/10-1) RNAV Substitution for Conventional Instrument Flight Procedures
- (PBN/TF/10-2) - New PBN Navigation Specifications
- (PBN/TF/10-3) - PBN Procedures with Vertical Guidance
- (PBN/TF/10-4) - Asia/Pacific Regional PBN Implementation Plan Version 4.0

The meeting endorsed the following Draft Conclusion for consideration by APANPIRG:

**Draft Decision 17/12 (PBN/TF/10-5) - Dissolution of the PBN Task Force**

That, subject to:

- a) the establishment of suitable oversight of PBN implementation within the Asia/Pacific Region; and
- b) endorsement by APANPIRG/24 of the –
  - (i) Asia/Pacific Regional PBN Implementation Plan Version 4.0 amendment; and
  - (ii) PBN components within the Asia/Pacific Seamless ATM Plan;

the Performance-based Task Force (PBN/TF) be dissolved and any on-going tasks be delegated to the Regional Sub-Office, the CNS Sub-Group or as otherwise directed by APANPIRG.

#### Alternate Position, Navigation and Time

Australia presented “Characteristics of an Alternative Position, Navigation and Timing for the Asia/Pacific Region“. The meeting noted following key points in the paper:

- APAC and the world are transitioning from ROUTE navigation based on terrestrial navigation aids to AREA navigation using PBN as the regulatory framework and GNSS as the enabling technology;
- Area navigation has already brought substantial economic and environmental benefits to aviation, this will continue to grow;
- Implementation in APAC is heavily dependent on GNSS and GPS is the only GNSS used in western air transport aircraft.
- It is convenient to consider the loss of GPS service at two levels:
  - Safety: during flight requires alternative navigation to safely land the aircraft at an adequate airport
  - Economic: Adequate alternative navigation to support commencement of new flights.
- Modern jet transport aircraft have self-contained navigation capability based on inertial – sufficient of oceanic and en route phases of flight
- Many States find it convenient to retain selected terrestrial navigation aids particularly at airports, to support completion of flights and limited new flights
- Retention of terrestrial navigation aids long term would be expensive and have limited capability;
- A number of states are exploring other means of navigation in the absence of GNSS/GPS;
- Additional constellations are available (GLONASS, Galileo (soon) and Beidou (13 useable satellites)) could potentially be used to make GNSS more robust; however suitable avionics are not yet available.

The meeting expressed encouragement to the Standards bodies (RTCA, EuroCAE) and ICAO HQ to develop standards for multi-constellation, multi-frequency GNSS avionics. The meeting expressed its appreciation to the USA for the service provided by GPS to the aviation in APAC Region.

#### Navigation & Surveillance Strategies for the Asia/Pacific Region

The meeting endorsed the revised navigation strategy proposed by the PBN TF and amended the surveillance strategy recommended by ADS-B SITF.

#### ADS-B Equipage Requirement and Required lead time for Mandate

The meeting was informed that by the end of 2013, DCA Myanmar will issue a mandate for ADS-B equipage of aircraft flying above FL260 on ATS routes M770 and L759 with target date 2015.

### Milestone for Data-sharing between India and Myanmar

The meeting endorsed a draft Conclusion for adoption of the milestones for data-sharing between India and Myanmar, which is considered as part of implementation plan in the Bay of Bengal area.

The meeting also formulated a conclusion on the processing altitude information in ADS-B Message that States/Administrations implementing ADS-B based surveillance services be urged to be fully aware of the safety implications and difference between geometric and barometric altitude. Geometric altitude information shall not be displayed on ATC displays used for provision of air traffic services. States may choose to use geometric altitude in ATM systems for other purposes.

### Comprehensive Amendment to the AIGD

The meeting reviewed and agreed (with Conclusion) the proposed comprehensive amendments to the AIGD which contain the latest ADS-B developments and applications including:

- relevant Aviation System Block Upgrades (ASBU);
- new avionics standards;
- safety risk assessment guidance material;
- ADS-B regulations;
- safety implications of ADS-B geometric altitude;
- procedures for handling non-compliant aircraft and misleading ADS-B transmissions;
- a framework for harmonizing implementation;
- Guidance on the generation and sharing of ASTERIX Category 21 messages;
- Reference to Security considerations;
- Reference to Guidance on ATC automation functionalities to support ADS-B;
- Reference to regulatory guidance material;
- Checklist for commissioning of an airways facility;
- Spares and maintenance support; and
- Co-ordination with Military organizations about ADS-B data sharing.

The meeting also endorsed a Conclusion on Exchange ADS-B performance monitoring result that, States be encouraged to exchange findings/result of their ADS-B performance monitoring including experience gained in conducting the required performance monitoring.

The meeting also endorsed another Draft Conclusion on the Need for adequate Logistics and Spares Support for ADS-B service:

That, States consider making maintenance arrangements including requirements for a spares pool and/or maintenance contract for all ADS-B system acquisitions and existing systems already in operation if these arrangements do not yet exist.

The meeting updated the CNS/ATM implementation Matrix reflecting the implementation status of CNS/ATM systems in the Asia/Pacific Region. The CNS/ATM Implementation Planning Matrix

reflects the status of implementation of major CNS/ATM elements in the region which includes ATN, AIDC, CPDLC, GNSS, ADS-C and ADS-B.

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