



International Civil Aviation Organization

**Third Meeting of the ICAO Asia/Pacific Seamless ATM Planning Group  
(APSAPG/3)**

Chennai, India, 21-25 January 2013

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**Agenda Item 2: Review Outcomes of Related Meetings**

**RELEVANT MEETING OUTCOMES**

(Presented by the Secretariat)

**SUMMARY**

This paper presents information from relevant meetings regarding Seamless ATM.

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-1 Flexible use of airspace
- GPI-2 Reduced vertical separation minima
- GPI-3 Harmonization of level systems
- GPI-4 Alignment of upper airspace classifications
- GPI-5 RNAV and RNP (Performance-based navigation)
- GPI-6 Air traffic flow management
- GPI-7 Dynamic and flexible ATS route management
- GPI-8 Collaborative airspace design and management
- GPI-9 Situational awareness
- GPI-10 Terminal area design and management
- GPI-11 RNP and RNAV SIDs and STARs
- GPI-12 Functional integration of ground systems with airborne systems
- GPI-13 Aerodrome design and management
- GPI-14 Runway operations
- GPI-15 Match IMC and VMC operating capacity
- GPI-16 Decision support systems and alerting systems
- GPI-17 Data link applications
- GPI-18 Aeronautical information
- GPI-19 Meteorological Systems
- GPI-20 WGS-84
- GPI-21 Navigation systems
- GPI-22 Communication infrastructure
- GPI-23 Aeronautical radio spectrum

## 1. INTRODUCTION

1.1 The Twenty Third Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/23) was held in Bangkok, Thailand from 10 to 14 September 2011.

1.2 The Forty Ninth Conference of Directors General of Civil Aviation Asia and Pacific Regions (DGCA/49) was held at New Delhi, India, from 9 to 12 October 2012.

1.3 The Tenth Meeting of the Performance Based Navigation Task Force (PBN/TF/10) was held in Nadi, Fiji from 11 to 13 December 2012.

## 2. DISCUSSION

### APANPIRG/23

2.1 APASPG/2 had extensively discussed the draft Position Statement on Aviation System Block Upgrades (ASBU) and after modifying its content accordingly, agreed to a revised draft. The meeting incorporated the inputs from Australia, Hong Kong, China, Japan and Thailand into the list of element implementation priority. APANPIRG/23 agreed to the following Conclusion:

#### **Conclusion 23/ 49 Asia/Pacific Position Statement on ASBU**

That, the Asia/Pacific Position Statement containing the response to the Draft Aviation System Block Upgrade (ASBU) Document appended as **Appendix 2 to the Report on Agenda Item 3.5** be adopted for States to use as a reference in formulating their position for the 12<sup>th</sup> Air Navigation Conference .

2.2 In accordance with the APSAPG Terms of Reference (TOR), a draft Seamless ATM Plan outline was required to be developed for APANPIRG/23 (10-14 September 2012), with the completed Plan to be submitted to APANPIRG/24 in 2013.

2.3 The draft Asia/Pacific Seamless ATM Plan was presented to APANPIRG for review of the draft as a framework, containing the basic structure, introductory material and agreed Seamless ATM Principles. APANPIRG/23 thanked the Secretariat for the great effort in compiling the draft APAC Seamless ATM Plan. The completed document would become useful guidance material to assist the implementation of seamless ATM. The meeting noted that the completed document should look at user expectations as well as States and ANSP's requirements, achieving seamless ATM across the APAC regions in a truly collaborative, practical and visionary manner.

2.4 IATA summarized the development of an Arabian Sea/Indian Ocean (ASIO) User Preferred Routing (UPR) Zone and highlighted the co-operation between many states from three ICAO regions together with a number of airlines and the INSPIRE partnership. APANPIRG noted what could be achieved by like-minded proactive effort from all stakeholders to progress Seamless operations. The meeting noted this productive effort and Seamless planning model, and encouraged ICAO regional office to strengthen inter-regional coordination by:

- inviting concerned States from other Regions to appropriate meetings; and
- ensuring ICAO Regional Officers attend appropriate meetings held in other regions; and
- encouraged States to expedite the planning of airspace blocks such as the UPR Zone initiative to support Seamless ATM implementation at the earliest opportunity.

2.5 IATA highlighted the airline Industry's concern at the increasing level of delay at many airports and major routes questioning the ability of the Asia Pacific ATM infrastructure to meet future air traffic demand. The meeting noted the proposed ASEAN Single Aviation Market would be implemented in 2015 and the potential loss of economic benefit to the Region if capacity constraints limit traffic levels. Airlines had reported increased delay and capacity constraints at many airports and airlines' leading to increased concern at the cost and inconvenience of delay.

2.6 IATA outlined their program for 2013 to identify key airports with capacity constraints and to work with airports and ANSP on determination and agreement of practical capacity levels. At these selected locations IATA also noted their intention to facilitate Aerodrome Collaborative Decision Making (A/CDM) agreements and to participate in existing enroute CDM programs.

2.7 IATA also questioned the current ICAO processes to successfully manage the Seamless ATM program implementation, noting that ICAO Europe Region had delegated implementation of Europe wide ATM upgrades to EUROCONTROL some year ago. IATA had agreed to develop the Seamless ATM cost benefit analysis and intended to complete an initial draft for APSAPG/3 early in 2013.

2.8 APANPIRG/23 noted the request from IATA that States support:

- discussion at key airports to develop realistic capacity evaluation;
- establishment of A/CDM at the selected airports;
- dialogue to improve gate-to-gate CDM along major routes across boundaries; and
- IATA in developing the cost/benefit case for Seamless ATM under APSAPG.

2.9 IATA stated that APSAPG need to address implementation issues and discuss seamless ATM progress with the ASEAN and APEC bodies. APANPIRG/23 requested the APSAPG to consider seamless ATM implementation issues in their final report to APANPIRG/24 and to recommend appropriate mechanisms for implementation. APANPIRG noted that ICAO was in discussion with ASEAN and APEC on these matters.

2.10 A joint paper by Hong Kong, China, Singapore and Thailand was presented to update APANPIRG/23 on a collaborative effort by the three administrations to develop a sub-regional ATFM concept. Aeronautical Radio of Thailand Limited (AEROTHAI), the Hong Kong Civil Aviation Department (HKCAD) and the Civil Aviation Authority of Singapore (CAAS) managed significant air traffic movements. The unique and common challenge faced by the three ANSPs provided an opportunity for the three ANSPs to collaborate toward developing an ATFM concept with CDM.

2.11 3HKCAD, AEROTHAI and CAAS would be exploring the concept of networked CDM to manage the traffic flows between these three hubs at a sub-regional level. Given the high volume of international traffic at the three hubs, the collaboration could act as a test case of the concepts and also provide a facility for further research in applying ATFM at a regional level. Through collaboration and information sharing, the concept could potentially be further expanded to manage air traffic in sub-regional areas within 4 to 5 hours range from the hubs, using virtual ATFM units.

### Seamless ATM Draft Plan

- 2.12 Five papers relevant to the APSAPG were presented to DGCA/49 (CANSO):
- DP/3/5: Driving Seamless ATM Operations Through Regional Collaboration;
  - DP/3/10: Planning Using The ICAO Performance Based Approach – Key To Successful Development And Implementation Of Future CNS/ATM Systems (Australia);
  - DP/3/18: Asia/Pacific Seamless ATM Planning Group Outcomes (ICAO);
  - DP/3/20: Bangkok-Singapore CDM Initiative (Singapore, Malaysia and Thailand); and
  - DP/3/21: Sub-Regional Air Traffic Flow Management (ATFM) Concept with Collaborative Decision Making (Hong Kong, China, Thailand, Singapore);
  - DP/3/26: Harmonized efforts toward Aeronautical information Management in Asia/Pacific region (Japan);
  - DP/3/32: Building the Capacity and Capability of Air Traffic Management Infrastructure to Meet the Growing Demand for Air Travel Today and in Future Years (IATA).

2.13 The ICAO Secretariat outlined ‘A shared Vision for the Future’ with Global Strategic Plans and Better Tools for Everyone. The paper noted that Events will be focused on Priorities on Safety (Runway Safety, Reducing Controlled Flight into Terrain and Loss of Control) and Air Navigation Capacity and Efficiency (PBN, CCO and CDO). The Conference noted that the Revised PBN Manual, PBN Airspace Concepts Manual, CCO Manual, OPS Approval Manual and Flight validation Manual are available as free documents in one implementation kit.

2.14 The ADS-B and CDM initiatives described by CANSO illustrated how a collaborative approach with a strong focus on implementation is essential for realizing the region’s vision of a seamless sky. The ADS-B initiative aims to plug radar surveillance gaps over the South China Sea and the Bay of Bengal. CANSO also highlighted its initiative to implement CDM for city pairs starting with a pilot project for Bangkok-Singapore.

2.15 Australia invited the Conference to take into account the need for a Performance Based Approach to planning and the current hierarchy of ICAO documentation, when conducting national and regional planning activities, as well as preparing for the 12th Air Navigation Conference. ASBU modules should be prioritised in a manner that is compatible with the application of the Performance Based Approach and that, whilst fostering harmonisation and interoperability, recognises the diversity of performance-problems around the world. Work on standards development and on implementation support for current standards, should also be prioritised in a manner that is compatible with the application of the Performance Based Approach and which recognises the diversity of performance-problems around the world.

2.16 Japan urged States to recognize the importance of AIRAC adherence. The paper also briefed on the importance of the transition from AIS to AIM and noted that there was a large gap between the States in the Asia/Pacific Region according to the survey conducted by ICAO Asia/Pacific Regional Office. Recognizing the slow progress of AIM implementation in the region, the paper emphasized the necessity of harmonized efforts for AIM and urged States to accelerate necessary activities for AIM. The Conference noted the current status of AIM implementation in Japan.

2.17 IATA expressed their concern at the increasing level of air traffic delays being experienced in Asia/Pacific at key airports and along major air routes. The paper also noted the working group which is examining seamless ATM across Asia Pacific, yet there was some concern that, in the near term, the ability of the current infrastructure to meet the increasing demand could limit the economic benefits which should flow to all Asia/Pacific States from a single aviation market. The paper outlined IATA's intention to work with Singapore Airport, Bangkok Airport, Hong Kong – China Airport, Beijing Capital Airport and Shanghai Pudong Airport on development of Aerodrome Collaborative Decision Making (A/CDM) Programme and en-route efficiency of these key city pairs.

2.18 Singapore supported ICAO on the ASBU methodology for ATM harmonization. While Singapore supported the ASBU concept and also urged the Conference to look at Block 2 and 3 as well. Bangladesh supported Singapore on this. Malaysia congratulated ICAO for the seamless ATM Plan and Singapore for establishing research Centre for ATM. The Conference noted that the Asia/Pacific Position Statement on ASBU be used as reference in formulating their position for the 12th Air Navigation Conference.

2.19 The Moderator urged ICAO HQ to prioritize the ASBU Block Items with the application of the Performance Based Approach and to develop required standards ahead of implementation schedules whilst providing implementation support for current standards. Moreover, the Moderator stated that it was encouraging to note that the regional sub-office would have Seamless ATM as one of its initial tasks.

2.20 List of DGCA Action Items relevant to APSAPG:

Action Item 49/3	The Conference urged States to review the draft Asia Pacific Seamless ATM plan and to ensure high level attendance including military representatives at the APSAPG 3 and APSAPG 4 meetings to be held in India and Hong Kong, China respectively.
Action Item 49/4	The Conference urged ICAO HQ to prioritize the ASBU Block Items with the application of the Performance Based Approach and to develop required standards ahead of the implementation schedules whilst providing implementation support for current standards.
Action Item 49/5	Recognizing the importance of a seamless ATM in the region, States with major airports are urged to implement Airport CDM and to collaborate with other states to develop a sub-regional ATFM network.
Action Item 49/6	The Conference urged States and Administrations to ensure the compliance of AIRAC dates and to recognize the importance on harmonization on transition and implementation of AIM in the region. States are also urged to develop and submit a basic plan with target dates of Transition elements in their AIS-AIM Roadmap to the Asia Pacific Regional Office before 1 January 2013.
Action Item 49/8	The Conference encouraged interested States to work together with ICAO on the certification of and implementation of SMS by small ANSPs and airports.

PBN/TF/10

2.21 WP11 was presented by Hong Kong, China. The paper emphasized the need for more comprehensive ICAO guidance material and training courses to assist implementation of the new navigation specifications in the advance Fourth Edition (unedited) version of the PBN Manual.

2.22 The Task Force agreed that training material for Advanced RNP will be needed, particularly for the advanced ATM capabilities envisaged. However, the Advanced RNP applications need more development before the training material can be produced.

2.23 The meeting considered that the most practical way to undertake these tasks and update the PBN Manual Doc 9613 was through the reconvening of the ICAO PBN Study Group. The meeting agreed to the following Draft Conclusion for consideration by the CNS Sub-Group and APANPIRG:

**Draft Conclusion PBN/TF/10-2: New PBN Navigation Specifications**

Considering that the RNP2, RNP0.3 and Advanced RNP Navigation Specifications were to be significantly valuable for future planning, ICAO HQ was urged to:

- a) expedite standards and guidance associated with these navigation specifications; and
- b) provide adequate training material and courses to enable effective implementation; and
- c) expedite the development of procedure design standards in Doc 8168 for low RNP value missed approach and departure operations.

2.24 The Regional Navigation Strategy for the Asia/Pacific Region was a list of high-level navigation policies that had been developed by the CNS-MET Sub-Group of APANPIRG. Under the recent re-organization of APANPIRG, the Strategy fell under the responsibility of the CNS Sub-Group, which the PBN/TF reported to. The latest version of the Regional PBN Implementation Plan (Version 3.0, September 2011) provided detailed guidance for administrations in the field of PBN. APSAPG had been tasked by APANPIRG with the development of an Asia/Pacific Seamless ATM Plan, which incorporated the Aviation System Block Upgrade (ASBU) modules, including those related to PBN.

2.25 It was important that there was alignment and an appropriate hierarchy between the Regional Navigation Strategy for the Asia/Pacific Region and documents that provided implementation guidance regarding PBN. The Regional Navigation Strategy for the Asia/Pacific Region contained a prescriptive statement of PBN specifications, which means that it was not confined to overall objectives, as might be expected in a high-level policy statement.

2.26 The Regional PBN Implementation Plan included Short-Term (2008-2012) strategies and a Medium-Term Implementation Plan (2013-2016). With the passage of time, these strategy timeframes had become out-of-date.

2.27 The meeting extensively discussed proposed amendments to the Regional Navigation Strategy for the Asia/Pacific Region and the Regional PBN Implementation Plan, and also took the opportunity to provide feedback on the early draft excerpt of the Asia/Pacific Seamless ATM Plan related to PBN.

2.28 The draft Asia/Pacific Seamless ATM Plan excerpt included a passage that required the establishment of a PBN specification for all ATS routes. During discussion at the PBN Workshop, Australia had advised that it intended to re-designate PBN specifications for all domestic RNAV routes. RNAV5 was being used as the baseline in order to confirm the area semi-widths and minimum safe altitudes for routes. Australia advised that the RNAV specification was being supported by GNSS, and that this would be confirmed in the Australian AIP, as the RNAV5 specification allowed use of other navigation aids such as VOR and DME.

2.29 It was recognised that while the original intention of PBN was to create a harmonised world-wide navigation scheme, unfortunately there was no hierarchy between specifications; thus an aircraft with a higher performing capability such as RNP2 was not able to utilise a route with a lower specification such as RNAV5. Australia had deemed higher performing navigation specifications as being able to be used on RNAV5 routes, in effect creating a hierarchy between specifications.

2.30 The following Draft Conclusion was agreed by the PBN/TF/10 for consideration by the CNS Sub-Group and APANPIRG:

**Draft Conclusion PBN/TF/10-4: PBN Implementation Guidance Updates**

That, recognizing the need for alignment of PBN Strategies and Guidance Material, as well as development of the Asia/Pacific Seamless ATM Plan, the following documents be updated with regard to PBN:

- a) Regional Navigation Strategy for the Asia/Pacific Region, appended as **Appendix E**; and
- b) Asia/Pacific Regional PBN Implementation Plan Version 4.0, appended as **Appendix F**.

**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.