



International Civil Aviation Organization

**Fourth Meeting of the ICAO Asia/Pacific Seamless ATM Planning Group
(APSAPG/4)**

Hong Kong, China, 3 – 7 June 2013

Agenda Item 4: Asia/Pacific Seamless ATM Status and Strategies

Seamless ATM Plan

(Presented by the Secretariat)

SUMMARY

This paper presents Version 0.9b of the Draft Seamless ATM Plan, and associated recommendations for consideration by APSAPG/4.

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 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.

1.2 In developing this Plan, an extensive and multi-faceted approach has been taken by the Regional Office, given the severe time constraints imposed by APANPIRG. An outline of the more significant steps in the process is detailed as follows.

- 15 to 17 August 2011, the ICAO Asia/Pacific (APAC) Seamless Air Traffic Management (ATM) Symposium and Ad Hoc Meeting were held at Bangkok, Thailand, and were attended by 84 delegates. There were 25 presentations made to the Symposium and Ad Hoc meeting, and from these the first iteration of the Draft Seamless ATM Principles were developed by ICAO. The Ad Hoc Meeting noted that a capabilities matrix would be useful to provide a target and means of progressing to that objective, and formulated a proposal to create the Asia/Pacific Seamless ATM Planning Group (APSAPG).
- 31 January to 3 February 2012, the First Meeting of the APSAPG (APSAPG/1) was held in Bangkok, Thailand, and was attended by 48 participants. APSAPG/1 discussed the definition of Seamless ATM and agreed on the objectives of Seamless ATM. The meeting established the need for the Major Traffic Flow (MTF) Study, and a focus on the Aviation System Block Upgrades (ASBU), with an initial focus on Block 0. ICAO provided papers on draft Seamless ATM principles and civil/military cooperation, the latter based on analysis of numerous civil/military meetings, ICAO documents, and the APANPIRG/9 guidelines. To facilitate the provision of Plan content and consultation, the Contact Lists were established.
- 02 and 27 March 2012, V0.1 and 0.2 ‘straw man’ versions developed for internal ICAO discussion and critique.
- 12 April 2012, V0.3 of the Seamless ATM Plan was sent to the Contact Lists. V0.3 incorporates introductory material provided by IATA and the outcomes of APSAPG/1. No comment was received.
- 12 April 2012 State Letter T3/10.1.21 – AP048/12 (ATM) requested States with FIRs to provide information on the Seamless ATM questionnaire, requesting feedback by 31 May 2012. Of the 30 administrations surveyed, only nine States responded, and another four for a total of thirteen by APSAPG/2.
- 02 May 2012, V0.4: internal consultation with Regional Offices and ICAOHQ.
- 19 July 2012, V0.5 developed to include all the ASBU and non-ASBU element information, plus the initial Preferred Aerodrome/Airspace and Route Specifications and Preferred ATM Service Levels (PARS and PASL, originally termed SRAS and MASS), for presentation at APSAPG/2 (WP10).
- 6 to 10 August 2012, APSAPG/2 was held at Tokyo, Japan, and was attended by 41 participants. IATA agreed to fund an economic study. ICAO information of the draft Seamless ATM principles, including 10 civil/military elements, which were refined as 37 agreed principles and noted by APANPIRG/23. ICAO presented the Seamless ATM questionnaire results (State Letter T3/10.1.21 – AP048/12 -ATM) dated 12 April 2012 and the initial results of the Major Traffic Flow (MTF) and Sample Regional Routes. ICAO presented a draft Asia/Pacific Position Statement on the ASBU initiative, which was discussed and endorsed by APSAPG, and agreed by APANPIRG/23. ICAO provided the initial draft Asia/Pacific Seamless ATM Plan, which was developed as V0.6, and subsequently presented to APANPIRG/23.

-
- 17 October 2012, Singapore, meeting between ICAO, IATA, CANSO and the Asia Pacific Economic Cooperation (APEC) to discuss Seamless ATM.
 - 18-19 October 2012, IATA Efficiency Workshop, Singapore at which ICAO presented information on Seamless ATM.
 - 20 November 2012, draft Plan sent to other ICAO Regional Offices and HQ (comment was received from MID and HQ).
 - 29 November 2012, V0.7 sent to the Co-Chairs for initial comment, with cut-off by 01 January 2013 (comment was received on 31 December 2012 from New Zealand).
 - 10 January 2013, V0.7 posted on the Asia/Pacific web site as WP10 and circulated to APSAPG participants/contacts.
 - 21 to 25 January 2013, APSAPG/3 was held in Chennai, India, and was attended by 40 participants. The meeting noted the regional PBN changes recommended by the PBN/TF/10. IATA submitted their initial Economic Study. ICAO presented the updated MTF and Sample Regional Routes Study, as well as the updated Seamless ATM Assessment. IFATCA presented a focus on the need for human performance. The meeting extensively discussed the draft Seamless ATM Plan (V0.7). Comments from Japan (WP17), Hong Kong, China (WP18) and India (WP24) had been incorporated within a master V0.8 document.
 - 15 March 2013, feedback provided from ICAOHQ from the Air Transport Conference (AT-Conf/6).
 - 29 March 2013, V0.8b sent to all contacts (Ref.: T3/10.1.21-AP-ATM0042).
 - 09 April 2013, comment received from ICAOHQ on V0.8b, particularly focused on ASBU (V0.8c developed from this feedback on 11 April 2013).
 - 24-28 April 2013, Bali, Indonesia, 52nd Annual Conference of IFATCA, ICAO presentation of Seamless ATM and discussion on air traffic controller involvement in future ATM systems.
 - 30 April 2013, Krabi, Thailand, 27th Association of Southeast Asian nations (ASEAN) Air Transport Working Group Meeting presentation on Seamless ATM.
 - 30 April 2013, comment received from Japan on V0.8b.
 - May 2013, *Air Transport World* article on Seamless ATM provided by the Regional Office published.
 - 01 May 2013, comment received from Hong Kong, China on V0.8b (cut-off for comment is 01 May 2013 so comment could be consolidated for presentation to the ATM and CNS Sub-Groups -SG).
 - 06 May 2013, V0.8d posted on the APAC website for the CNS/SG/17 (WP21), held 14-17 May 2013.
 - 08 May 2013, comment received from Australia on V0.8b.
 - 16 May 2013, comment received on from Singapore on V0.8b.
 - 20 May 2013, ATM/SG/1 WP06 updated to incorporate all comment received from Japan, Hong, China, Australia and Singapore – 161 individual comments and responses.
 - 20-24 May 2013 ATM/SG conducted.
 - 28 May 2013, V0.9b posted as APSAPG/4 WP07.

2. DISCUSSION

2.1 The Seamless ATM Plan has been developed continuously over a very tight timeframe, with the vast majority of content coming from research conducted by the Regional Office. The only substantial content not provided by ICAO is expected to be provided by IATA with their Economic Study (Attachment 2 to the Plan, subject of a separate Working Paper- WP03).

2.2 Feedback from the Contact Lists had been poor, with little or no response before APSAPG/3. After APSAPG/3, feedback was only provided by a small number of States, some of this being received past cut-off date. Only Singapore provided feedback which included proposed significant extra content.

2.3 The major changes and additions from V0.9 to the version V0.9b presented attached with this paper (**Attachment A and B**) are as follows:

- The ATM/SG agreed that a firm date (day) should be chosen as a target for the Phases (the USA strongly supported using the chart AIRAC date).
- The ATM/SG endorsed the ADS-B airspace PARS without comment.
- The CNS/SG and ATM/SG endorsed the Modes S Transponder and ACAS/TAWS airspace PARS after amendment to recognise Mode S carriage is only necessary in airspace where Mode S radars operate.
- The CNS/SG endorsed the PBN airspace and routes PARS without comment.
- The ATM/SG, after some wide ranging discussion, agreed to the Draft Conclusion regarding AIDC (including the five messages) with some amended text.
- The ATM/SG meeting noted Singapore's suggested text for the first two paragraphs of the Research and Development (R and D) portion in Section 8. Japan agreed with the Singapore submission.
- The ATM/SG discussed the need for the text related to encouraging the use of the minimum ATC separation standard to be as clear as possible; thus this text has been amended.
- The ATM/SG noted the submission by Pakistan on harmonisation of Transition Altitudes as far as practicable, so an item of this nature has been added to the research subjects in section 8.
- New Zealand provided feedback on a large number of editorial improvements for the Plan that had largely been included and highlighted.
- ACI provided some late additions to the plan on aerodrome matters.

Draft Conclusions

2.4 The meeting is invited to review the Draft Asia/Pacific Seamless ATM Plan Version 0.9b (WP07 Attachments A and B), and suggest amendments as appropriate in order to develop Draft Version 1.0 for APANPIRG's consideration. The meeting is invited to consider the following Draft Conclusion for APANPIRG's approval:

Draft Conclusion APSAPG/4-1 Asia/Pacific Seamless ATM Plan

That, the Asia/Pacific Seamless ATM Plan Version 1.0 be endorsed, and made available on the ICAO Asia/Pacific Regional Office web site.

2.5 The Asia/Pacific Seamless ATM Plan contains a number of specific expected or recommended actions that require endorsement by APSAPG and the approval of APANPIRG. The following Draft Conclusions are provided for consideration by the meeting.

Draft Conclusion APSAPG/4-2: State Seamless ATM Planning

That, given the urgency and priority of Seamless ATM planning for the Asia/Pacific as acknowledged by the 46th Conference of Directors General of Civil Aviation (DGCA, Osaka, Japan, 12-16 October 2009) and APANPIRG/22 (05-09 September 2011), States should be urged to:

- a) review Version 1.0 of the Asia/Pacific Seamless ATM Plan attached as **Appendix X to the Report**;
- b) brief relevant Asia/Pacific regional bodies such as Asia/Pacific Economic Cooperation, Association of Southeast Asian Nations and South Asian Association for Regional Cooperation on the Asia/Pacific Seamless ATM Plan;
- c) develop a State Seamless ATM Plan in accordance with the guidance material provided by ICAO (providing details on how and when a State will implement applicable Asia/Pacific Seamless ATM Plan Preferred Airspace and Route Specifications (PARS) and Preferred ATM Service Specifications (PASL) elements, and submit such Plan to the ICAO regional Office by 01 January 2014;
- d) establish national regulations, rules and policies as appropriate to ensure implementation of the applicable PARS and PASL Seamless ATM elements in accordance with the Asia/Pacific Seamless ATM Plan;
- e) ensure that State and air navigation service senior decision-makers are aware of the need for appropriate resources and high-level policies to support and prioritise Seamless ATM initiatives stemming from the Asia/Pacific Seamless ATM Plan; and
- f) contribute and support collaborative training, research and Seamless ATM system improvement initiatives resulting from the Asia/Pacific Seamless ATM Plan.

Draft Conclusion APSAPG/4-3: Trans-Regional Seamless ATM Improvements

That, given the need for trans-regional ATM improvements, ICAO HQ should support and encourage the enhancement of:

- a) ATM coordination and civil/military cooperation between the Russian Federation, Mongolia and China;
- b) Seamless ATM services by a review of the airspace and procedures between the Muscat and Mumbai FIRs conducted by the Sultanate of Oman, Yemen and India; and
- c) European On-Line Data Interchange (OLDI) – ATS Inter-facility Data-link Communication (AIDC) conversion capability through the Inter-Regional APAC/NAT AIDC Task Force, or collaborative research by affected States such as Russia, China and the United States.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) discuss and endorse Draft Conclusion APSAPG/4-1 Asia/Pacific Seamless ATM Plan (paragraph 2.4);
- c) discuss and endorse Draft Conclusion APSAPG/4-2: State Seamless ATM Planning (paragraph 2.5);
- d) discuss and endorse Draft Conclusion APSAPG/4-3: Trans-Regional Seamless ATM Improvements (paragraph 2.5); and
- e) discuss any relevant matters as appropriate.

.....