



International Civil Aviation Organization

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

Chennai, India, 21-25 January 2013

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

SEAMLESS ATM PLAN COMMENTS BY HONG KONG CHINA

(Presented by Hong Kong, China)

SUMMARY

This paper presents comments on the Seamless ATM Plan draft by Hong Kong, China

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 WP10 contains the draft Seamless ATM Plan for consideration.

2. DISCUSSION

2.1 **Attachment A** to this paper provides comments on Version 0.7 of the draft Seamless ATM Plan by Hong Kong, China.

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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APSAPG/3
WP/10 - APAC Seamless ATM Plan Draft v0.7
Comments from Hong Kong, China

Ref Para.	Comments and Suggestions
OVERVIEW / GENERAL	
	➔ After the APSAPG/4, viz the last meeting of APSAPG, ICAO to advise the mechanism as to how this Plan is going to be followed up by APANPIRG and its contributory bodies for actualization by States/Administrations in APAC.
INTRODUCTION	
1.8	➔ To ensure common understanding and harmonization of application, the concept needs to be applied globally (including in ASBU plans). Should this concept is adopted by the APAC Region, it should be discussed with and agreed by other Regions
1.15	➔ Suggest to delete “(CANSO)” from the subtitle as the summary relates to all ANSPs, regardless of whether it is a member of CANSO
1.22	➔ Replace “States should provide commitments and agreed implementation actions acknowledged by stakeholders,” by “States to consult and collaborate with stakeholders”
1.23	➔ Need to highlight to other states the implications of “The Asia/Pacific Regional Air Navigation Plan (Doc 9673) is expected to incorporate key components of this Plan, such as the PARS and PASL”
1.24-1.25	➔ Encourage more partnering relationships among States within sub-regions.
1.29	(1)➔ Update for a complete review to “three years” instead of “two years” to align the review cycle of GANP. (2)➔ Update for (a) the review by APANPIRG and its contributory bodies instead of ATM Sub-group and (b) endorsed by APANPIRG instead of informed. ➔ Propose changing Paragraph 1.29 to the following: “It is intended that the APANPIRG and its contributory bodies conduct a complete review every three years of the Plan to align the review cycle of GANP. The Plan should be endorsed by APANPIRG, while ICAO APAC Regional office to coordinate with other ICAO Regional offices & ICAO HQs to ensure consistent implementation.”

SEAMLESS ATM PRINCIPLES	
2.1 – 2.2	<p>➔ In view of the controversy arisen from previous discussions on the definition raised by CANSO and noting that not all APSAPG participating States are CANSO members, suggest to adopt the objective of Seamless ATM agreed by APSAPG. Combine & simplify para 2.1 & 2.2 to become</p> <p>“2.1 APSAPG noted the definition of Seamless ATM provided by CANSO and agreed on the following objectives for implementing Seamless ATM:” followed by the paragraph in italics in para 2.2. Delete the paragraph in italic in para 2.1</p>
2.4 (new)	<p>➔ Add a new paragraph (Para 2.4) for making reference to the ICAO 10 High Level Air Navigation Policy Principles as stipulated in GANP which have been endorsed by AN-Conf/12.</p> <p>“2.4 The ICAO Twelfth Air Navigation Conference endorsed 10 High Level Air Navigation Policy Principles in GANP and the Asia/Pacific Seamless ATM Principles would align with these high level principles.”</p>
SEAMLESS ATM ELEMENTS	
Aviation System Block Upgrade (ASBU)	
3.5	<p>➔ “Attachment 1” is not found in this document. Need to confirm the contents.</p> <p>➔ ICAO Regional Office should discuss the proposed 3 categories of priority during meeting of APSAPG while keep in view for the 4 categories (not yet endorsed) of priority proposed by ICAO during AN-Conf/12.</p>
3.9	➔ Consider aligning the ICAO AIS-AIM Roadmap Phase 2 (2013) implementation with the ICAO ASBU B0-30 (2018)
3.11	➔ 4 th line: Suggest to replace “ADC-C” by “ADS-C”
3.13	<p>➔ Suggest to replace “(SIDS)” and “(STARS)” by “(SIDs)” and “(STARs)” respectively.</p> <p>➔ Although the term “Standard Terminal Arrivals” is used in the subtitle for GPI-11 in Doc 9750, its definition is not stated in Doc 4444, in contrast to “Standard instrument arrival” which shares the same abbreviation “STAR”. Clarification should be sought from ICAO HQ.</p>
3.14	<p>➔ Re “Procedures for extension of metering into en-route airspace may be necessary.” Does it mean flow control or arrival metering?</p> <p>➔ Suggest to replace “...Point Merge PBN procedures (see Chapter 6) are an example of procedures that may be used...” by “...Point Merge PBN procedures (see Chapter 6 for an example of the procedure) may be used”</p>
3.15	➔ Suggest to replace “(STARS)” by “(STARs)”

Global and Regional Elements	
3.34	→ Suggest to replace the last sentence with the following: “Thus FLAS should only be imposed where there are safety considerations or systemic operational limitations, such as the ability to deliver ATS surveillance-based separation.”
3.36	→ Any PBN implementation initiatives such as proposed vertical delineation should be consistent with the APAC Regional PBN Implementation Plan. New initiatives needs to be discussed and agreed by APAC states and operators
3.38	→ Suggest to delete the paragraph as the surveillance strategy should be in accordance with relevant ICAO documents. Currently there is no such requirement as mentioned in paragraph.
Civil/Military Cooperation	
3.44 - 3.64	→ The initiative to hold Civil/Military cooperation seminars on regular basis is supported.
Preferred Airspace and Route Specifications (PARS)	
<u>PARS Phase I (effective 12 November 2015)</u>	
Subtitle	→ The effective date should be fully discussed and agreeable by APAC states → ICAO to advise the rationale for the effective date to be <u>12 November 2015</u>
3.66	→ Suggest to replace “top 20 busiest Asia/Pacific aerodromes as follows” by “busy Asia/Pacific aerodromes with (a certain number of) annual movements and delete the list of states and aerodromes
3.68	→ Would like to find out why “All high density aerodromes with rotary wing operations should have RNP 0.3 arrival/departure, approach and/or en-route transiting procedures” and what benefits are being looked at.
3.69	→ Replace “Flight Level Allocation Scheme (FLOS)” by “Tables of Cruising Levels”
3.70	Re: 3.70 – there is no regional plan for mandatory carriage of operable mode S transponders (other than ACAS). →(1) ICAO Regional office to advise actions to assist States to mandate the requirement. →(2) ICAO Regional Office to advise the reference for this mandate.

3.71	<p>It is required to harmonize ADS-B implementation across airspace to order to derive full operational benefits from it and achieve seamless ATM. A framework for harmonized ADS-B implementation has been developed and incorporated into the ADS-B Implementation and Guidance Document (AIGD), Chapter 9. This framework has been used by States in Southeast Asia and Bay of Bengal for harmonized ADS-B implementation.</p> <p>→ Suggest to add the following paragraph to Para 3.71 : “States along the parallel routes L642 and M771 in the South China Sea had worked in full cooperation to formulate a harmonized framework for implementing ADS-B across airspace to derive better operational benefits from it and thus achieve seamless ATM operations. States should refer to the ICAO ADS-B Implementation and Guidance Document (AIGD). The same framework has also been adopted for use by States in the Southeast Asia and Bay of Bengal to gain synergy on harmonized ADS-B implementation.”</p> <p>→ APANPIRG Conclusion 22/8 does not contain a list of “high density FIRs”. Would like to know how various levels of density are determined.</p>
3.72	<p>→ Rephrase the paragraph in accordance with APANPIRG Conclusion 23/5. (APANPIRG Conclusion 23/5 a) is about ADS-C/CPDLC (vs ADS-B) and does not contain a list of “high density FIRs” nor a vertical delineation on the designation of such airspace) The proposed vertical delineation needs to be discussed and agreed by the meeting</p> <p>→ The FIRs following this paragraph is missing.</p> <p>→ Besides, since Category R airspace is defined as “en-route airspace within ATS communications and surveillance coverage dependent on a third-party Communication Service Provider (CSP)”, designating such airspace as non exclusive ADS-B airspace seems not justifiable.</p>
3.73	<p>→ Rephrase the paragraph in accordance with APANPIRG Conclusion 23/5. (APANPIRG Conclusion 23/5 does not contain a list of “high density FIRs” nor a vertical delineation on the designation of such airspace) The proposed vertical delineation needs to be discussed and agreed by the meeting</p>
3.74	<p>→ The timeframe and roadmap should be consistent with those in the latest agreed version of APAC Regional PBN Implementation Plan. Any change needs to be discussed and agreed by APAC states.</p>
<p><u>PARS Phase II (effective 09 November 2018)</u></p>	
Subtitle	<p>→ ICAO to advise the rationale for the effective date to be <u>09 November 2018</u>.</p> <p>→ The effective date should be fully discussed and agreeable by APAC states</p>
3.77 e)	<p>→ Whether the listed infrastructure requirement is acceptable will need to be discussed</p>
3.79	<p>→ The application of this technology is controversial due to security and privacy issues. Hence, it has to be discussed among States</p>

3.78	→ Capacities are constrained by different operating limitations specific to individual airports. Suggest to delete “Runway capacity expectations are provided from several States for comparison purposes in Appendix 8 averaging: a) 34 aircraft for single runways; b) 66 aircraft for two parallel or near parallel runways; and c) 86 aircraft for three parallel or near parallel runways.”
3.81	→ Would like to find out why “All high density aerodromes with rotary wing and <u>VFR fixed wing</u> operations should have RNP 0.3 arrival/departure, approach and/or en-route transiting procedures” and what benefits are being looked at.
3.89	→ The timeframe and roadmap should be consistent with those in the latest agreed version of APAC Regional PBN Implementation Plan. Any change needs to be discussed and agreed by APAC states.
3.90	→ It is suggested to qualify the ADS-B OUT as “ADS-B OUT using 1090ES with DO260/60A and 260B”.
Preferred ATM Service Levels (PASL)	
<u>PASL Phase I (effective 12 November 2015)</u>	
Subtitle	→ ICAO to advise the rationale for the effective date to be <u>12 November 2015</u> → The effective date should be fully discussed and agreeable by APAC states
3.94	→ Suggest to replace “top 20 busiest Asia/Pacific aerodromes as follows” by “busy Asia/Pacific aerodromes with (a certain number of) annual movements and delete the list of states and aerodromes
3.95	→ Delete this paragraph as ICAO Doc 4444 specifies that States may establish “other minima for use in circumstances not prescribed”.
3.98	→ Suggest removing the requirements to apply minimum separation standards. States should continue to adopt the existing arrangement, i.e. subject to mutual agreements between states concerned to agree on the applicable ATC separation standards at transfer of control points.
3.101	→ The proposed vertical delineation is subject to discussion and agreement by states
3.102	→ Suggest to delete this para. The provision has been covered in ICAO Doc 4444 (Ref para 4.11)
3.105	In B0-84, there is no requirement for radar surveillance systems <u>with Mode S capability</u> . → Propose change for 3.105 “ADS-B (using 1090ES) and MLAT and radar surveillance systems with Mode S capability should be used to provide coverage of all Category S-capable airspace as far as practicable (ASBU Priority 1, Recommendation 9)”

PASL Phase II (effective 09 November 2018)	
Subtitle	<ul style="list-style-type: none"> ➔ ICAO to advise the rationale for the effective date to be <u>09 November 2018</u>. ➔ The effective date should be fully discussed and agreeable by APAC states
3.117	➔ Suggest to replace the 1 st sentence by “All terminal ATC Sectors should have a nominal aircraft capacity figure based on a scientific capacity study and safety assessment, to ensure the safe and efficient aircraft operations.”
3.122	➔ Replace the 1 st sentence by “All enroute ATC Sectors should have a nominal aircraft capacity figure based on a scientific capacity study and safety assessment, to ensure the safe and efficient aircraft operations.”
4.2 – 4.4	➔ Suggest to delete para 4.2 – 4.4 as this information/data is dynamic. The top 20 busiest aerodromes as well as the status of development could vary from time to time
4.5	➔ “Attachment 1” is not found in this document. Need to confirm the contents.
ECONOMIC AND ENVIRONMENTAL ASPECTS	
6.6	➔ How is CO ₂ saving monetized? Is this related to CO ₂ emission tax?
FUTURE CONCEPT	
7.1 – 7.2	➔ The future concept should be in line with the latest ICAO GANP. Suggest to review these paragraphs.
7.4	➔ ICAO to advise whether a comprehensive list is presented in this section.
7.6-7.12	<ul style="list-style-type: none"> ➔ Although this concept is ideal, it requires buy-in from very high level statesmen. The differences in economic situations in APAC States could also be a major hurdle. Undoubtedly, political will would be the determining factor. The endorsement in Recommendation 1 would be the very first step. ➔ The timeline in para 7.12 need to be discussed and agreed among APAC states before implementation
RECOMMENDATIONS	
R5 – 7	➔ Suggest to re-number the paragraph number for Recommendation 5 – 7 to avoid confusion to readers
R11	➔ Suggest to change the review time to 2016 and 2019.

Appendix 5: Asia/Pacific Performance Analysis	
Whole	<ul style="list-style-type: none"> ➔ The existing Appendix 4 should focus on “Asia/Pacific Performance Analysis”. Suggest to put the yet-to-come “Major Traffic Flow Study” in a separate Appendix. ➔ Suggest to renumber all paragraphs in this Appendix (Currently numbered as 4.x)
4.1 c)	➔ The existing ADS-B mandate along the ATS routes L642 and M771 by end 2013 has been harmonized through the discussion in the 6 th meeting of ADS-B SEA/WG in Feb 2011. The initiative to further mandate requires prior consultation and evaluation
4.1 f)	➔ Item h) may be of some significance to HK, more details on this item are desirable, e.g. what SUA issues and how exactly segregated SID/STAR for PRD may solve the problem
4.3 – Table 22	<ul style="list-style-type: none"> ➔ It is suggested replacing this statement with “Hong Kong China to share ADS-B data with adjacent States/Administrations to enhance ATS surveillance at FIR boundaries” ➔ Noted that there is 'delta' between current capabilities and practices and Phase 1 of the PARS/PASL in the case of HK FIR. More specific information is requested in this regard ➔ TOC separation depends on bi-lateral agreements with adjacent ACC concerned ➔ AIDC depends on bi-lateral agreements with as well as equipment of adjacent ACCs
Appendix 8: Capacity Expectations	
	➔ Appendix 8 contains only runways and airspace capacity data for Australia, New Zealand, Singapore, Thailand and United States. ICAO to clarify whether the data are comprehensive for APAC and useful to justify a basis for Capacity Expectations.