International Civil Aviation Organization

Thirteenth Meeting of the Air Traffic Management Sub-Group (ATM/SG/13) of APANPIRG

Singapore, 25 – 29 August 2025

Agenda Item 3: **Performance Frameworks and Metrics**

ASIA/PACIFIC SEAMLESS ANS PLAN UPDATE

(Presented by the Secretariat)

SUMMARY

This paper presents information on the proposed amendments to the expected implementation priority of the Navigation Systems (NAVS) module Block 0 elements in the *Asia/Pacific Seamless ANS Plan Version 4.0* and update on the *APAC Seamless ANS Plan* reporting tool.

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1. **INTRODUCTION**

1.1   The Thirty-Fifth Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/35) was held in Bangkok, Thailand, from 25 to 27 November 2024.

1.2   The APANPIRG/35 adopted the following Conclusion:

Conclusion APANPIRG/35-1: Asia/Pacific Seamless ANS Plan

That, given the urgency and priority of Air Navigation Service (ANS) planning and modernization, and the lack of progress in implementing the Aviation System Block Upgrade (ASBU) elements, Version 4.0 of the Asia/Pacific Seamless ANS Plan appended as Appendix A to the Report on Agenda Item 3.0 be adopted; and uploaded to the Asia/Pacific Regional Office eDocument webpage.

1.3   The *Asia/Pacific Seamless ANS Plan* provides the expected priority for implementation of ASBU Block 0, Block 1 and Block 2 elements, within the Asia/Pacific Region. The allocation of priority was based on factors including its importance in promoting Seamless ANS:

  a) **Priority 1** – critical upgrade assignment based on whether the implementation of an element could bring most benefit to the region or regional upgrade by States and is essential to achieve the service level required globally;

  b) **Priority 2** – recommended upgrade for those elements which would bring benefits to the region and generally to be implemented from 2022, but States are encouraged to implement earlier if beneficial; and

  c) **Priority 3** – assigned to those elements which may not be universally implemented in the Asia/Pacific Region

2.   DISCUSSION

Proposed Amendments to NAVS Block 0 Expected Implementation Priority

2.1   Recognizing the existence of discrepancies in the prioritization of NAVS Block 0 elements within the published *Asia/Pacific Seamless ANS Plan Version 4.0*, compared to the priority approved by the Communications, Navigation and Surveillance Sub-group (CNS SG) of APANPIRG, the ICAO Secretariat has presented this matter at the Seventh Meeting of the Asia/Pacific GBAS/SBAS Implementation Task Force (GBAS/SBAS ITF/7, Bangkok, Thailand, 14 – 16 May 2025) and the Twenty Ninth Meeting of the Communications, Navigation and Surveillance Sub-group of APANPIRG (CNS SG/29, Bangkok, Thailand, 16-20 June 2025).

2.2   This discrepancy may have resulted from editorial errors during the consolidation of extensive feedback obtained from multiple sources.

2.3   **Table 1** illustrates a comparison between the priority adopted by CNS SG/28 based on proposal from *CNS-related ASBUs Review Ad-hoc Group for the Next Edition of the Seamless ANS Plan*, and those published in the *Asia/Pacific Seamless ANS Plan Version 4.0*.

Table 1: Comparison of CNS SG Approved Priority versus Published Priority

ASBU Element	Approved Priority by CNS SG/28	Priority Published in *Asia/Pacific Seamless ANS Plan Version 4.0*
NAVS-B0/1 to B0/4 SBAS, GBAS, ABAS, MON	Priority 1	Priority 2

2.4   Acknowledging that the review of ASBU NAVS elements falls under the responsibility of the CNS SG, the ICAO Secretariat proactively prepared and submitted a working paper for consideration at the GBAS/SBAS ITF/7. This initiative was undertaken to solicit comments and feedback from navigation experts regarding the appropriate prioritization of the NAVS Block 0 elements prior to proposing amendments to the CNS SG.

2.5   Discussions and decisions from the GBAS/SBAS ITF/7:

a) noting that some Asia/Pacific States/Administrations did not have access to Ground Based Augmentation Systems (GBAS) and Satellite Based Augmentation Systems (SBAS) systems, the GBAS/SBAS ITF/7 agreed to retain Priority 2 for NAVS-B0/1 GBAS and NAVS-B0/2 SBAS;

b) noting the importance of Aircraft Based Augmentation Systems (ABAS) in supporting all performance-based navigation (PBN) navigations specifications, except RNP APCH down to LPV/LP minima, the GBAS/SBAS ITF/7 agreed that Priority 1 should be assigned for NAVS-B0/3 ABAS;

c) acknowledging the concerns related to Global Navigation Satellite System (GNSS) radio frequency interference (RFI) events, which could posed a significant threats within the region, as well as the associated recommendations and action items from the Fourteenth Air Navigation Conference (AN-Conf/14, Montréal, Canada, 26 August – 06 September 2024) and the 59th Conference of Directors General of Civil Aviation, Asia and Pacific Regions (DGCA/59, Cebu, Philippines, 14 – 18 October 2024), the GBAS/SBAS ITF/7 agreed that Priority 1 should be assigned for NAVS-B0/4 Nav. MON; and

d) acknowledging that not all ASBU NAVS Module Block 0 elements should be accorded with the same level of priority within the Asia/Pacific Region, the ICAO Secretariat proposed the subdivision of these elements from a consolidated 'Thread' (see **Table 2**) into discrete individual elements (see **Table 3**). This approach aims to ensure that each element is assigned an appropriate level of priority, which was subsequently agreed by the GBAS/SBAS ITF/7.

Table 2: Priority Published in *Asia/Pacific Seamless ANS Plan Version 4.0*

Functional Category	Element	Description	Priority	Responsibility for Review
Technology	NAVS-B0/1 to B0/4	SBAS, GBAS, ABAS, MON (PARS 7.5, 7.7)	2	CNS SG

Table 3: Proposed New Priority

Functional Category	Element	Description	Priority	Responsibility for Review
Technology	NAVS-B0/1	GBAS	2	CNS SG
	NAVS-B0/2	SBAS	2	
	NAVS-B0/3	ABAS	1	
	NAVS-B0/4	Nav. MON	1	

2.6 Following the consensus reached at the GBAS/SBAS ITF/7, ICAO Secretariat subsequently presented a working paper at the CNS SG/29, for CNS Sub-group further review and consideration.

2.7 CNS SG/29 agreed to the proposed amendments as per **Table 3** above. In accordance with this agreement, ICAO Secretariat would incorporate these changes as a corrigendum to the existing *Asia/Pacific Seamless ANS Plan Version 4.0*, and to be presented at the APANPIRG/36 meeting for endorsement. Upon endorsement, the corrigendum will be published on the ICAO Asia/Pacific Regional Office webpage, and the Asia/Pacific Seamless ANS Reporting Tool will be updated accordingly to reflect these changes.

2.8 The corrigendum to the *Asia/Pacific Seamless ANS Plan Version 4.0* is provided as **Appendix A**, for review and approval by the ATM/SG.

Update Air Traffic Management Sub-Group of APANPIRG (ATM/SG) Terms of Reference

2.9 During the review of the Asia/Pacific Seamless "ATM" Plan in 2019, it was agreed that the more accurate terminology should be "Air Navigation Service (ANS)", as the Plan also covered non-ATM areas such as aerodromes, MET and SAR. Additionally, this was aligned with the ICAO HQ terminology for the State-level plan (National Air Navigation Plan).

2.10 The Thirtieth Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/30, Bangkok, Thailand, from 4 to 6 November 2019) adopted ***Conclusion APANPIRG/30-5: Asia/Pacific Seamless ANS Plan***.

2.11   In this regard, ICAO proposed an update to the Terms of Reference (TOR) of the ATM/SG, as provided in **Appendix B**, to reflect the current Plan name, for review and approval by the ATM/SG. The text proposed to be removed has been strike through and the text to be inserted is highlighted in Grey.

<u>Update on the Asia/Pacific Seamless ANS Reporting Tool</u>

2.12   The Asia/Pacific Seamless ANS Reporting Tool (accessible via the ICAO APAC SharePoint Platform using the pre-registered secure login credential at https://oaci.sharepoint.com/sites/ATM_reporting/SitePages/ANS-Reporting-Implementation.aspx) was developed by ICAO HQ to take into account the changes to the latest version of the Global Air Navigation Plan and the 2019 (version 3.0) update of the *Asia/Pacific Seamless ANS Plan*. According to State letter Ref.: T 8/5.1 – AP060/24(CNS), States/Administrations were required to complete the reporting over this new platform by 31 May 2024.

2.13   To facilitate States' ANS implementation reporting by using the new tool, a brief guideline on using the new Portal had been prepared and a workshop with demonstrations and interactive sessions was held from 17 to 19 April 2024.

2.14   States/Administrations were again reminded to submit the *Asia/Pacific Seamless ANS Plan* implementation status using online reporting in June 2025.

2.15   As of 1 August 2025, a total of 20 States/Administrations, i.e. 48.8% of the APAC States/Administrations, submitted some form of reporting on the Asia/Pacific Seamless ANS Reporting Tool for 2024. Among those 20 States/Administrations, 14 States/Administrations have submitted a comprehensive report. Hence there is not enough information to carry out effective evaluation on the implementation progress.

2.16   The 20 States/Administrations that have provided at least some forms of reports are as below:

> *Australia, Bangladesh, Brunei Darussalam, China, Hong Kong China, Macao China, Fiji India, Indonesia, Japan, Lao PDR, Mongolia, New Zealand, Philippines, Republic of Korea, Singapore, Sri Lanka, Thailand, Timor-Leste and Viet Nam.*

2.17   The 14 States/Administrations that have provided comprehensive reporting are Australia, Hong Kong China, Macao China, Indonesia, Japan, Lao PDR, Mongolia, New Zealand, Philippines, Republic of Korea, Singapore, Sri Lanka, Thailand and Viet Nam.

2.18   After the approval and endorsement of *Asia/Pacific Seamless ANS Plan Version 4.0* by APANPIRG/35 in November 2024, the reporting tool is being updated to reflect the changes. The ICAO Asia/Pacific Regional Office has taken note of the feedback provided by States/Administrations in regard to the reporting tool. The updated tool will be available for online reporting by States/Administrations by December 2025. States/Administrations will be informed of the same by a State Letter.

2.19   States/Administrations are requested to utilize the updated Asia/Pacific Seamless ANS Plan Reporting Tool and submit the implementation status by 28 February of 2026.

3.   ACTION BY THE MEETING

3.1   The meeting is invited to:

      a)   note the information contained in this paper;

b) discuss and agree to **Draft Conclusion ATM/SG/13-X: Corrigendum to the Asia/Pacific Seamless ANS Plan Version 4.0**;

c) discuss and agree to **Draft Conclusion ATM/SG/13-X: Update Air Traffic Management Sub-Group of APANPIRG (ATM/SG) Terms of Reference**;

d) discuss the low level of reporting and progress by States/Administrations in implementing the *Asia/Pacific Seamless ANS Plan*;

e) note that the updated Asia/Pacific Seamless ANS Plan Reporting Tool will be available by December 2025, for reporting on Seamless ANS implementation status of 2025; and

f) discuss any relevant matters as appropriate.

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Draft Conclusion ATM/SG/13-X: Corrigendum to the Asia/Pacific Seamless ANS Plan Version 4.0	
What: That, 1. the corrigendum to the *Asia/Pacific Seamless ANS Plan Version 4.0* at **Appendix X to the Report** be adopted, and uploaded to the ICAO Asia/Pacific Regional Office webpage to supplement the existing version; 2. the ICAO Secretariat to update the Asia/Pacific Seamless ANS Reporting Tool to reflect these changes; and 3. States are urged to update their national air navigation plan (NANP) to align with the revised *Asia/Pacific Seamless ANS Plan Version 4.0*.	Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
Why: To update and accurately reflect the priorities of ASBU NAVS elements within the Asia/Pacific Seamless ANS Plan.	Follow-up: ☐Required from States
When: 29-Aug-25	Status: Draft to be adopted by PIRG
Who: ☒Sub groups ☐APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other:	

Draft Conclusion ATM/SG/13-X: Update Air Traffic Management Sub-Group of APANPIRG (ATM/SG) Terms of Reference	
What: That, the updated ATM/SG Terms of Reference at **Appendix X to the Report** be adopted.	Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
Why: To update the TOR to revise references to the Asia/Pacific Seamless ANS Plan.	Follow-up: ☐Required from States
When: 29-Aug-25	Status: Draft to be adopted by PIRG
Who: ☒Sub groups ☐APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other:	

APPENDIX A

CORRIGENDUM TO THE ASIA/PACIFIC SEAMLESS ANS PLAN VERSION 4.0

The *Asia/Pacific Seamless ANS Plan* is amended as follows.

The text proposed to be removed has been strike through and the text to be inserted is highlighted in Grey.

i)   Paragraph 5.6 Table 1: Asia/Pacific ASBU Block 0, Block 1 and Block 2 Priority

Functional Category	Element	Description	Priority	Responsibility for Review
Technology	~~NAVS-B0/1 to B0/4~~	~~SBAS, GBAS, ABAS, MON (PARS 7.5, 7.7)~~	~~2~~	~~CNS SG~~
	NAVS-B0/1	GBAS (PARS 7.5, 7.7)	2	CNS SG
	NAVS-B0/2	SBAS (PARS 7.5, 7.7)	2	
	NAVS-B0/3	ABAS (PARS 7.7)	1	
	NAVS-B0/4	Nav. MON (PARS 7.7)	1	

ii)   Paragraph 5.10

There are ~~18~~20 Priority 1 elements as follows:

a)   Aeronautical Meteorology: AMET-B0/1 to B0/4;

b)   Aeronautical Information Management: DAIM-B1/1 to B1/6*;

c)   Airport CDM: ACDM-B0/1;

d)   ANSP human and simulator performance (Regional);

e)   ATS Inter-facility Datalink Communications: FICE-B0/1;

f)   Space object launches and re-entry management (Regional);

g)   Civil-Military SUA management (Regional);

h)   Civil-Military strategic and tactical coordination (Regional);

i)   Core data communications: COMI-B0/3, B0/7 and B1/1;

j)   Direct and Free Route Operations: FRTO-B0/1 to B0/4;

k)   Enhanced SAR systems (Regional);

l)   Ground-based Surveillance: ASUR-B0/1 to B0/3;

m)   Network Operations: NOPS-B0/1 to B0/5;

n)   Performance-based Navigation Approach Procedures: APTA-B0/1 and B0/2;

o)   Runway Sequencing: RSEQ-B0/1 to B0/2;~~ and~~

p)   Safety Nets: SNET-B0/1 to B0/4; and

q)   Navigation Systems: NAVS-B0/3 and NAVS-B0/4.

Note: DAIM-B1/7 is placed within PASL Phase III.

iii) Paragraph 7.5

Where practicable, all instrument runways serving aeroplanes should have the following approach procedures consistent with **APTA-B0/1** (Priority 1) and **APTA-B0/3**:

a) SBAS/GBAS CAT1 precision approaches (Priority 2); or ILS CAT1 approaches (with APV approach as a backup); or

b) Approaches with Vertical Guidance (APV); RNP APCH with LNAV-VNAV or LPV Minima; or

c) if an APV is not practical, straight-in RNP APCH with Lateral Navigation (LNAV) or SBAS based LPV Minima.

iv) Paragraph 7.7

SBAS, GBAS, ABAS and Nav. MON systems should be established as appropriate to the level and type of aircraft operations and the operating environment consistent with NAVS-B0/1 to B0/4, subject to an assessment of benefits and costs.

Note 1: States should prioritize implementation of regulations and infrastructure for facilitating use of ABAS and establishing a Nav. MON (Priority 1).

Note 12: the application of GNSS and its augmentations such as GBAS Landing System (GLS) is recommended where these systems were economically beneficial.

Note 23: As far as practicable, airspace and instrument flight procedures associated with international aerodromes should not be constrained by international borders and political barriers, and be established only after appropriate consideration of:

a) *environmental efficiencies;*

b) *noise abatement and local authority regulations;*

c) *adjacent aerodromes;*

d) *conflicting instrument flight procedures; and*

e) *affected ATC units or ATM procedures.*

APPENDIX B

Terms of Reference of Air Traffic Management Sub-Group of APANPIRG (ATM/SG)

The Objectives of the ATM/SG are to:

1) *ensure the continuous and coherent development of the ATM/AIM/SAR parts of the Asia/Pacific Regional Air Navigation Plan (APAC ANP) in a manner that is harmonized with adjacent regions, consistent with ICAO SARPs, the Global Air Navigation Plan and the Global Aviation Safety Plan;*

2) *facilitate the implementation of ATM systems, procedures and services identified in the APAC ANP, Aviation System Block Upgrade (ASBU) priority modules and Asia/Pacific Seamless ~~ATM~~ ANS Plan elements using the project management principles where appropriate;*

3) *review, identify and address deficiencies that impede the implementation or provision of efficient ATM services in the Asia and Pacific Regions.*

<u>**Deliverables to meet the Objectives:**</u>

1) *Progress report to be **submitted** to APANPIRG addressing the ATM/SG deliverables (listed in 2 to 9 below);*

2) *ATM parts of the ASIA/PAC ANP to be **reviewed** and, as necessary, amendment proposals **prepared** to update the APAC ANP to reflect changes in the operational and global requirements;*

3) *Level of implementation of ATM services to be **monitored** and, as necessary, **facilitated** to support the effective implementation of ASBU priority modules and the Asia/Pacific Seamless ~~ATM~~ ANS Plan elements;*

4) *Air navigation deficiencies in the field of ATM to be **identified** (which may require any necessary systems performance monitoring to be **facilitated**) and, where necessary, appropriate corrective action **proposed** and the development and implementation of action plans by States to resolve identified deficiencies **facilitated**;*

5) *Air navigation deficiencies in the field of ATM (as listed in the APANPIRG database) to be **reviewed** and, as necessary, **updated** to reflect the current situation;*

6) *Research and development, trials and demonstrations in the field of ATM and other relevant areas to be **monitored** and, as necessary, the transfer of this information and expertise between States **facilitated**;*

7) *Specific recommendations to be **made,** and guidance materials **developed,** aimed at improving aeronautical meteorological services by the use of existing and/or new procedures, facilities and technologies;*

8) *Inter-regional and intra-regional co-ordination issues in the field of ATM to be **reviewed** and **identified** and, as necessary, actions **recommended** addressing those issues;*

9) *ATS environmental initiatives are consistently identified and progressed; and report outcomes from ATM environmental initiatives;*

10) *Draft Conclusions and Decisions to be **formulated** relating to matters in the field of ATM that come within the scope of the APANPIRG work plan.*

Approved by ~~APANPIRG/26, September 2015~~ APANPIRG/36, November 2025