International Civil Aviation Organization

ELEVENTH MEETING OF THE SURVEILLANCE IMPLEMENTATION COORDINATION GROUP (SURICG/11)

Bangkok, Thailand, 25 – 27 March 2026

Agenda Item 5: Review of regional requirements for Surveillance in the e-ANP, Seamless ANS Plan and the reported implementation status

REVIEW REGIONAL SURVEILLANCE REQUIREMENTS

(Presented by the Secretariat)

SUMMARY

This paper reviews regional requirements specified in Table CNS II-APAC-3 in APAC e-ANP Volume II.

1. INTRODUCTION

1.1 The regional surveillance requirements and objectives are specified in the Regional ANP Vol. I and Vol. II, the Seamless ANS Plan and the regional surveillance strategy.

1.2 The Secretariat presented WP/10 to SURICG/2, WP/05 to SURICG/6, WP/06 to SURICG/7, WP/06 to SURICG/8, and WP/06 of SURICG/9 to review regional requirements and invited feedback to maintain the currency and accuracy of the relevant information.

1.3 The Secretariat shared concerns about outdated information provided in e-ANP Vol II and presented WP/07 of SURICG/10 to request States/Administrations to update them following the PfA procedure.

2. DISCUSSION

2.1 In November 2022, APANPIRG/33 adopted the Revised Surveillance Strategy for the APAC Region through Conclusion APANPIRG/33/11, which replaced the previous version adopted in November 2019. States/Administrations are therefore requested to make reference of the revised strategy as guidance for Implementation of the Surveillance Systems to support Air Navigation Service in respective Administration.

2.2 e-ANP Volume II contains the General Regional Requirements and Specific Regional Requirements related to CNS from Member States. As such, Member States are encouraged to review all facilities listed in Table CNS II-APAC-3 SURVEILLANCE under the Specific Regional Requirements in e-ANP Volume II against the revised regional strategy and verify that the information provided for their States/Administrations is up-to-date and correct.

2.3 In case of updates of any information required, States/Administrations should submit the updates to ICAO APAC Regional Office via PfA Process.

2.4 During SURICG/8 and after SURICG/8 meeting, States/administrations approached the ICAO Secretariat to update respective information contained in Table CNS II-APAC-3 SURVEILLANCE of ANP Volume II. The Secretariat consolidated the updates into the Table, and circulated the revised information through state letter Ref.: AN 3/3 – AP192/23 (CNS) on 20 December

2023, which is provided in **Appendix A** of this paper. With the circulation of the state letter, the Secretariat revised the Table again with some feedback from States.

2.5 SURICG/9 reviewed the consolidated table by the Secretariat with reference to the Revied Surveillance Strategy of APAC. The meeting was requested to urge states to verify and update the **TABLE CNS II-3**- SURVEILLANCE following the PfA process. However, no further comments are received.

2.6 The SURICG/10 Meeting urged States/Administrations to verify and update the **TABLE CNS II-APAC-3**- SURVEILLANCE following the PfA process and endorsed the draft conclusion for CNS SG/29 adoption:

Draft Conclusion SURICG/10/01- Update the TABLE CNS II-APAC-3	
What: The current TABLE CNS II-APAC-3 SURVEILLANCE of e-ANP Vol II is outdated and requires immediate updates.	Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
Why: to update ICAO APAC e-ANP Vol II	Follow-up: ☒Required from States
When: 23 April 2025	Status: Draft to be adopted by Sub-group
Who: ☒Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☒Other: SURICG	

2.7 During CNS SG/29, the ICAO Secretariat shared concerns about outdated information in the current e-ANP Vol II and requested all contributory bodies, including CRV OG/13, ACSICG/12, SURICG/10, and SRWG/09, which have endorsed draft Conclusions to update tables under their responsibilities. The proposed update of the CNS Tables of ICAO APAC e-ANP Vol II was reviewed and adopted by the CNS SG/29 Meeting:

Conclusion CNS SG/29/12 (*ACSICG/12/01(CRV OG/13/04), ACSICG/12/08, SURICG/10/01,* SRWG/09/01*)* - Update the CNS Tables of ICAO APAC e-ANP Vol II	
What: The following tables of ICAO APAC e-ANP Vol II are outdated and require immediate updates. **<u>General Regional Requirements</u>** **TABLE CNS II-1** AERONAUTICAL FIXED TELECOMMUNICATIONS NETWORK (AFTN) PLAN **TABLE CNS II-2** REQUIRED ATN INFRASTRUCTURE ROUTING PLAN **TABLE CNS II-3** ATS DIRECT SPEECH CIRCUITS PLAN **TABLE CNS II-4** HF NETWORK DESIGNATORS **<u>Specific Regional Requirements</u>** **TABLE CNS II-APAC-1** ATS INTER-FACILITY DATA COMMUNICATION (AIDC) IMPLEMENTATION PLAN **TABLE CNS II-APAC-2** RADIO NAVIGATION AIDS **TABLE CNS II-APAC-3** SURVEILLANCE	Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
Why: The current TABLEs related to CNS are outdated and require immediate updates in order to update e-ANP Vol II.	Follow-up: ☒Required from States

When:	20-Jun-25	Status:	Adopted by Subgroup
Who:	☒Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other:		

2.8 The ICAO Secretariat issued the state letter Ref.: AN 2/1 – AP092/25 (CNS) on 8 July 2025, which is provided in **Appendix B** of this paper, to all States/Administrations for necessary action after the CNS SG/29 meeting. States/Administrations are requested to verify and update the relevant information in CNS Tables of ICAO APAC e-ANP Vol II by submitting a Proposal for Amendments (PfA) with the ICAO APAC Office by **31 October 2025**. Since a few States submitted timely responses before the original deadline, the deadline has been extended to **15 February 2026**.

2.9 Bhutan, Hong Kong China, India, Japan, Lao PDR, Malaysia, New Zealand, Pakistan, Papua New Guinea, Singapore, Sri Lanka, Thailand, and the United States proposed updates in the **TABLE CNS II-3**- SURVEILLANCE following the PfA process. The Secretariat consolidated the proposed updates and revised the **Table CNS II-APAC-3**, which is provided in **Appendix C** to this paper.

2.10 The Revised Surveillance Strategy of APAC, adopted by APANPIRG/33, is placed in **Appendix D** to this paper for easy reference.

3. ACTION REQUIRED BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper;

b) urge States/Administrations to review and update ***the*** **TABLE CNS II-APAC-3** SURVEILLANCE *of e-ANP Vol II* following the PfA process;

c) review and update planning requirements provided in **Appendix C**; and

d) discuss any related issues as appropriate.

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International Civil Aviation Organization | Organisation de l'aviation civile internationale | Organización de Aviación Civil Internacional | Международная организация гражданской авиации | منظمة الطيران المدني الدولي | 国际民用航空组织

Ref.: AN 3/3 – AP192/23 (CNS) 20 December 2023

Subject: Proposal for Amendment of the ICAO Asia and Pacific Air Navigation Plan, Volume II, PART III – Communications, Navigation and Surveillance (CNS) (Serial No.: APAC-II 23/19 – CNS)

Action required: Please reply not later than **22 January 2024**

Dear Sir/Madam,

1. I wish to draw your attention to the attached Proposal for Amendment of the ICAO Asia and Pacific Air Navigation Plan, Volume II Part III – CNS (Serial No.: APAC-II 23/19 – CNS), which has been originated by SURICG/8 Secretariat.

2. In accordance with the established procedure for the amendment of Air Navigation Plans, I am to enquire whether your Administration has any objection to the proposal.

3. Since it is desirable to finalize action on this proposal with minimal delay, please provide your reply by the earliest practicable date and, in any event, not later than **22 January 2024.**

4. In the event that the views of your Administration are not received by that date, it will be presumed that you have no objection to the proposed changes and the proposal will be processed accordingly.

Yours sincerely,

Tao Ma
ICAO Regional Director
Asia and Pacific

Enclosure:
Proposal for Amendment (Serial No.: APAC-II 23/19 – CNS)

PROPOSAL FOR AMENDMENT OF THE ICAO ASIA AND PACIFIC REGIONS AIR NAVIGATION PLAN, VOLUME II

(Serial No.: APAC-II 23/19 – CNS**)**

a) **Plan:**	Doc 9673, Asia and Pacific Air Navigation Plan (ANP), Volume II
b) **Proposed amendment:**	***Editorial Note*:** Amendments are arranged to show deleted text using strikeout (~~text to be deleted~~), and added text with grey shading (text to be inserted) *Add*, *Amend or Delete* requirement as follows: Volume II PART III – COMMUNICATIONS, NAVIGATION AND SURVEILLANCE (CNS) - In respect of CNS Surveillance, amend **Table CNS II-APAC-3 SURVEILLANCE of e-ANP Volume II** (cf. Part III, Table CNS II APAC-3, Page III-108)
c) **Originated by:**	Secretariat
d) **Originator's reasons for amendment:**	The Eighth Meeting of the Surveillance Implementation Coordination Group (SURICG/8) required this table to be updated.
e) **Intended date of: implementation**	As soon as possible after final approval of the proposal.

f) **Proposal circulated to the following States and International Organizations:**	All APAC Member States	EUR/NAT NACC	[LIST OTHER STATES AND/OR INTERNATIONAL ORGANIZATIONS] CANSO IATA IFALPA IFATCA
	** for information*		

g) **Secretariat Comments:**	1. Nil

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Table CNS II-APAC-3 SURVEILLANCE

EXPLANATION OF THE TABLE

Column

1 ATS Units to consider are ACC units and Approach units responsible for International airports and alternate aerodromes, International airports and alternate aerodromes.

2 The category may be: R, S, T or AD. Categories R, S, T are defined in the Seamless ATM plan. AD means Aerodrome.

3 Indicate Yes if part(s) of the airspace referred to in Column 2 is (are) not covered by surveillance listed in column 6, and in column remarks when such gaps are planned to be bridged

4 Indicate Yes or No.

Indicate No in case of standalone displays of ATS surveillance data (should not be used operationally)

5 Indicate Yes or No

6 List all types of surveillance used:

PSR
SSRmS
SSRmAC
ADS-B
ADS-C
MLAT
WAM
PRM

7 According to the definition in Doc 9830 Appendix B

8 Remarks

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
AUSTRALIA International Airports							
Adelaide	C						Adelaide, Summertown
TCU			YES	YES	PSR+SSRmS+SSRmAC		
APP			YES	YES	PSR+SSRmS+SSRmAC		
TWR			YES	YES	PSR+SSRmS+SSRmAC		
Cairns	C						Redden Creek, Hanns Tableland
TCU			YES	YES	PSR+SSRmS+SSRmAC		
APP			YES	YES	PSR+SSRmS+SSRmAC		
TWR			YES	YES	PSR+SSRmS+SSRmAC		
Brisbane	C						Mt Hardgrave, Brisbane, Mt Sommerville
EC			YES	YES	PSR+SSRmAC+SSRmS+ADS-B		
APP			YES	YES	PSR+SSRmAC+SSRmS+		
ACC			YES	YES	PSR+SSRmAC+SSRmS+ADS-B		
TWR			YES	YES	PSR+SSRmAC+SSRmS+A-SMGCS+SMR	2	
Gold Coast	C						Mt Sommerville, Mt Hardgrave
APP			YES	YES	PSR+SSRmS+SSRmAC		
TWR			YES	YES	PSR+SSRmS+SSRmAC		
Melbourne	**C**						Gelliebrand Hill, Mt Macedon
EC			YES	YES	PSR+SSRmAC+SSRmS+ADS-B+		
APP			YES	YES	PSR+SSRmAC+SSRmS		
ACC			YES	YES	PSR+SSRmAC+SSRmS+ADS-B		
TWR			YES	YES	PSR+SSRmAC+SSRmS+ADS-B+A-SMGCS+SMR	2	

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Perth	**C**						Perth, Kalamunda, Eclipse Hill
TCU			YES	YES	PSR+SSRmAC+SSRmS		
APP			YES	YES	PSR+SSRmAC+SSRmS		
TWR			YES	YES	PSR+SSRmAC+SSRmS+A-SMGCS+SMR	2	
Sydney	**C**						Sydney, Mt Boyce, Cecil Park
TCU			YES	YES	PSR+SSRmS+SSRmAC+WAM+MLAT		
APP			YES	YES	PSR+SSRmS+SSRmAC+WAM+MLAT		
TWR			YES	YES	PSR+SSRmS+SSRmAC+A-SMGCS+WAM+MLAT+SMR	2	
Darwin	**C**						Darwin, Knuckeys Lagoon
APP			YES	YES	PSR+SSRmS+SSRmAC		
TWR			YES	YES	PSR+SSRmS+SSRmAC		
Hobart	**D**						Hobart
APP			YES	YES	WAM+ADS-B		
TWR			YES	YES	WAM+ADS-B		
Karratha	D						Karratha
APP			YES	YES	ADS-B		
TWR			YES	YES	ADS-B		
Alternate aerodromes							
Alice Springs	D						Alice Springs
APP			YES	YES	ADS-B		
TWR			YES	YES	ADS-B		
Avalon	D						Gellibrand Hill, Mt Macedon
APP			YES	YES	PSR+ SSRm(S)+SSRm(A/C)		
TWR			YES	YES	PSR+ SSRm(S)+SSRm(A/C)		
Canberra	C						Mt Majura, Mt Bobbara
APP			YES	YES	PSR+ SSRm(S)+SSRm(A/C)		

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
TWR			YES	YES	PSR+ SSRm(S)+SSRm(A/C)		
Coffs Harbour	D						The Round Mountain, Point Lookout
APP			YES	YES	SSRm(S)+SSRm(A/C)+ADS-B		
TWR			YES	YES	SSRm(S)+SSRm(A/C)+ADS-B		
Kalgoorlie	G	Over aerodrome	YES	YES	-		
Launceston	D						Launceston
APP			YES	YES	WAM+ ADS-B		
TWR			YES	YES	WAM+ ADS-B		
Learmonth	G		YES	YES	ADS-B		Learmonth
Port Hedland	G	Over aerodrome	YES	YES	-		
Rock Hampton	D						Mt Alma
APP			YES	YES	SSRm(S)+SSRm(A/C)		
TWR			YES	YES	SSRm(S)+SSRm(A/C)		
Tindal	C						Tindal
APP			YES	YES	PSR+SSRm(A/C)		
TWR			YES	YES	PSR+SSRm(A/C)		
Townsville	C						Townsville, Tabletop
APP			YES	YES	PSR+ SSRm(S)+SSRm(A/C)		
TWR			YES	YES	PSR+ SSRm(S)+SSRm(A/C)		
Other aerodromes							
Broome	D		YES	YES	ADS-B		Broome
Albury	D		YES	YES	Higher level SSR coverage		Mt Bobbara
Tamworth	D		YES	YES	?		The Round Mountain
Mackay	D		YES	YES	SSRm(A/C)		Swampy Ridge
Hamilton Island	D		YES	YES	SSRm(A/C)		Swampy Ridge
BANGLADESH							
Dhaka APP	C				PSR+SSRm AC		

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
BRUNEI DARUSALAM Brunei APP					PSR + SSRmAC		
CAMBODIA					SSRmAC		
CHINA Beijing ACC Beijing APP Beijing TWR (ZBAA) Beijing TWR (ZBAD) Tianjin APP Tianjin TWR Shijiazhuang APP Shijiazhuang TWR Taiyuan ACC Taiyuan APP Taiyuan TWR			 YES YES YES YES YES YES YES YES YES YES YES	 YES YES YES YES YES YES YES YES YES YES YES	 PSR + SSRmAC +SSRmAC+ADS-B PSR + SSRmAC +SSRmAC+ADS-B PSR + ~~SSRmAC~~ SSRmS+SSRmAC+SMR+AD PSR+SSRmS+SSRmAC+SMR+ADS-B+MLAT+A-SMGCS PSR+SSRmS+SSRmAC+ADS-B ~~SSRmAC~~ SSRmS+SSRmAC+SMR+ADS-B+MLAT+A-SMGCS SSRmS+SSRmAC+ADS-B ~~SSRmAC~~ SSRmS+SSRmAC+ADS-B ~~PSR + SSRmAC~~ PSR+SSRmS+SSRmAC+ADS-B PSR+SSRmS+SSRmAC+ADS-B ~~PSR + SSRmAC~~ PSR+SSRmS+SSRmAC+ADS-B	 2 4 2 	

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Hohhot ACC			YES	YES	SSRmAC +ADS-B		
Hohhot APP			YES	YES	SSRmAC+ADS-B		
Hohhot TWR			YES	YES	SSRmAC +ADS-B		
Guangzhou ACC			YES	YES	PSR+SSRmS+SSRmAC+ADS-B		
Guangzhou APP			YES	YES	PSR+SSRmS+SSRmAC+ADS-B		
Guangzhou TWR			YES	YES	PSR+SSRmS+SSRmAC+SMR+ADS-B+A-SMGCS	2	
Shenzhen APP			YES	YES	SSRmS+SSRmAC+ADS-B		
Shenzhen TWR			YES	YES	~~PSR +~~ SSRmS+ SSRmAC +ADS-B+SMR+A-SMGCS		
Zhuhai ACC			YES	YES	PSR + SSRmS+ SSRmAC +ADS-B		
Zhuhai APP			YES	YES	PSR + SSRmS+ SSRmAC +ADS-B		
Zhuhai TWR			YES	YES	PSR + SSRmS+ SSRmAC +ADS-B		
Sanya ACC			YES	YES	PSR + SSRmS+ SSRmAC +ADS-B		
Sanya APP			YES	YES	PSR + SSRmS+ SSRmAC +ADS-B		
Sanya TWR			YES	YES	PSR + SSRmS+ SSRmAC +ADS-B		
Haikou ACC			YES	YES	PSR + SSRmS+ SSRmAC +ADS-B		
Haikou APP			YES	YES	PSR + SSRmS+ SSRmAC +ADS-B		
Haikou TWR			YES	YES	PSR + SSRmS+ SSRmAC +ADS-B +SMR+MLAT		
Changsha ACC			YES	YES	~~PSR +~~ SSRmS+ SSRmAC +ADS-B		
Changsha APP			YES	YES	SSRmS+SSRmAC+ADS-B		
Changsha TWR			YES	YES	~~PSR +~~ SSRmS+ SSRmAC +ADS-B +SMR+MLAT+A-SMGCS		

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Enshi TWR			YES	YES	SSRmAC		
Wuhan ACC			YES	YES	PSR + SSRmS+ SSRmAC +ADS-B		
Wuhan APP			YES	YES	PSR + SSRmS+ SSRmAC +ADS-B		
Wuhan TWR			YES	YES	PSR + SSRmS+ SSRmAC +ADS-B +SMR+MLAT+A-SMGCS	2	
Zhengzhou ACC			YES	YES	PSR + SSRmS+ SSRmAC +ADS-B		
Zhengzhou APP			YES	YES	PSR + SSRmS+ SSRmAC +ADS-B		
Zhengzhou TWR			YES	YES	PSR + SSRmS+ SSRmAC +ADS-B +SMR+MLAT+A-SMGCS	2	
Guilin ACC			YES	YES	~~PSR +~~ SSRmS+ SSRmAC +ADS-B		
Guilin APP			YES	YES	~~PSR +~~ SSRmS+ SSRmAC +ADS-B		
Guilin TWR			YES	YES	~~PSR +~~ SSRmS+ SSRmAC +ADS-B +SMR+MLAT		
Nanning ACC			YES	YES	SSRmS+SSRmAC+ADS-B		
Nanning TWR			YES	YES	SSRmAC+ADS-B		
Zhanjiang ACC			YES	YES	PSR+SSRmS+SSRmAC+ADS-B		
Zhanjiang APP			YES	YES	PSR+SSRmS+SSRmAC+ADS-B		
Zhanjiang TWR			YES	YES	PSR+SSRmS+SSRmAC+ADS-B		
Shantou ACC			YES	YES	~~PSR~~ SSRmS + SSRmAC +ADS-B		
Shantou APP			YES	YES	~~PSR~~ SSRmS + SSRmAC +ADS-B		
Shantou TWR			YES	YES	~~PSR~~ SSRmS + SSRmAC +ADS-B		
Kunming ACC			YES	YES	PSR +SSRmS + SSRmAC + ~~AC~~ ADS-B		
Kunming APP			YES	YES	PSR +SSRmS + SSRmAC + ~~AC~~ ADS-B		
Kunming TWR			YES	YES	PSR +SSRmS + SSRmAC + ~~AC~~ ADS-B		

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
					+ SMR+MLAT		
Chengdu ACC			YES	YES	PSR +SSRmS + SSRmAC + ~~ADS-C~~ +ADS-B		
Chengdu APP			YES	YES	PSR +SSRmS + SSRmAC + ~~ADS-C~~ +ADS-B		
Chengdu TWR (ZUUU)			YES	YES	PSR +SSRmS + SSRmAC + ~~ADS-C~~ +ADS-B+SMR+MLAT+A-SMGCS	2	
Chengdu TWR (ZUTF)			YES	YES	PSR+SSRmS+SSRmAC+ADS-B+SMR+MLAT+A-SMGCS	2	
Guiyang ACC			YES	YES	PSR + SSRmS+ SSRmAC +ADS-B		
Guiyang APP			YES	YES	PSR+SSRmS+SSRmAC+ADS-B		
Guiyang TWR			YES	YES	PSR + SSRmS+ SSRmAC +ADS-B+SMR+MLAT+A-SMGCS	2	
Chongqing ACC			YES	YES	PSR + SSRmS+ SSRmAC +ADS-B		
Chongqing APP			YES	YES	PSR + SSRmS+ SSRmAC +ADS-B		
Chongqing TWR			YES	YES	PSR + SSRmS+ SSRmAC +ADS-B+SMR+MLAT+A-SMGCS	2	
Shanghai ACC			YES	YES	PSR + SSRmS+ SSRmAC +ADS-B		
Shanghai APP			YES	YES	PSR + SSRmS+ SSRmAC +ADS-B		
Shanghai TWR (ZSSS)			YES	YES	PSR + SSRmS+ SSRmAC +ADS-B+SMR+MLAT+A-SMGCS	2	
Shanghai TWR(ZSPD)			YES	YES	PSR+SSRmS+SSRmAC+ADS-B+SMR+A-SMGCS	2	
Jinan ACC			YES	YES	SSRmS+ SSRmAC +ADS-B		
Jinan APP			YES	YES	SSRmS+SSRmAC+ADS-B		

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Jinan TWR			YES	YES	SSRmS+ SSRmAC +ADS-B		
Qingdao ACC			YES	YES	SSRmS+ SSRmAC +ADS-B		
Qingdao APP			YES	YES	SSRmS+SSRmAC+ADS-B		
Qingdao TWR			YES	YES	SSRmS+SSRmAC+ADS-B	2	
Hefei ACC			YES	YES	~~PSR+~~SSRmS+ SSRmAC +ADS-B		
Hefei APP			YES	YES	~~PSR+~~SSRmS+ SSRmAC +ADS-B		
Hefei TWR			YES	YES	~~PSR+~~SSRmS+ SSRmAC +ADS-B		
Nanjing ACC			YES	YES	~~PSR+~~SSRmS+ SSRmAC +ADS-B		
Nanjing APP			YES	YES	~~PSR+~~SSRmS+ SSRmAC +ADS-B		
Nanjing TWR			YES	YES	~~PSR+~~SSRmS+ SSRmAC +ADS-B+SMR+A-SMGCS	2	
Lianyungang ACC			YES	YES	SSRmS+ SSRmAC +ADS-B		
Lianyungang APP			YES	YES	SSRmS+ SSRmAC +ADS-B		
Lianyungang TWR			YES	YES	SSRmS+ SSRmAC +ADS-B		
Xuzhou TWR			YES	YES	SSRmS+ SSRmAC +ADS-B		
Hangzhou ACC			YES	YES	PSR+ SSRmS +SSRmAC + ADS-B		
Hangzhou APP			YES	YES	PSR+ SSRmS +SSRmAC + ADS-B		
Hangzhou TWR			YES	YES	PSR+ SSRmS +SSRmAC + ADS-B+SMR+MLAT+A-SMGCS	2	
Nanchang ACC			YES	YES	~~PSR+~~SSRmS+ SSRmAC +ADS-B		
Nanchang APP			YES	YES	~~PSR+~~SSRmS+ SSRmAC +ADS-B		
Nanchang TWR			YES	YES	~~PSR+~~SSRmS+ SSRmAC +ADS-B		
Fuzhou ACC			YES	YES	~~PSR+~~SSRmS+ SSRmAC +ADS-B		

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Fuzhou APP			YES	YES	~~PSR+~~SSRmS+ SSRmAC +ADS-B		
Fuzhou TWR			YES	YES	~~PSR+~~SSRmS+ SSRmAC +ADS-B		
Wenzou TWR			YES	YES	SSRmS+ SSRmAC +ADS-B		
Xiamen ACC			YES	YES	~~PSR+~~ SSRmAC +ADS-B		
Xiamen APP			YES	YES	SSRmAC +ADS-B		
Xiamen TWR			YES	YES	~~PSR+~~ SSRmAC +ADS-B+ SMR+MLAT+A-SMGCS	2	
Shenyang ACC			YES	YES	PSR+ SSRmS +SSRmAC + ADS-B		
Shenyang APP			YES	YES	PSR+ SSRmS +SSRmAC + ADS-B		
Shenyang TWR			YES	YES	PSR+ SSRmS +SSRmAC + ADS-B SMR+A-SMGCS	2	
Dalian ACC			YES	YES	PSR+ SSRmS +SSRmAC + ADS-B		
Dalian APP			YES	YES	PSR+ SSRmS +SSRmAC + ADS-B		
Dalian TWR			YES	YES	PSR+ SSRmS +SSRmAC + ADS-B SMR+A-SMGCS	2	
Harbin ACC			YES	YES	PSR+ SSRmS +SSRmAC + ADS-B		
Harbin APP			YES	YES	PSR+ SSRmS +SSRmAC + ADS-B		
Harbin TWR			YES	YES	PSR+ SSRmS +SSRmAC + ADS-B SMR+ MLAT+ A-SMGCS	2	
Xi'an ACC			YES	YES	PSR+ SSRmS +SSRmAC + ADS-B		
Xi'an APP			YES	YES	PSR+ SSRmS +SSRmAC + ADS-B		
Xi'an TWR			YES	YES	PSR+ SSRmS +SSRmAC + ADS-B SMR+ MLAT		
Lanzhou ACC			YES	YES	SSRmS+ SSRmAC+ ~~AC~~ + ADS-B		
Lanzhou APP			YES	YES	SSRmS+SSRmAC+ADS-B		

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Lanzhou TWR			YES	YES	SSRmS+ SSRmAC +ADS-B		
Urumqi ACC			YES	YES	PSR+SSRmS +SSRmAC +~~AC~~ ADS-B		
Urumqi APP			YES	YES	PSR+SSRmS+SSRmAC+ADS-B		
Urumqi TWR			YES	YES	PSR+ SSRmS +SSRmAC +ADS-B+SMR+MLAT+A-SMGCS	2	
HONG KONG, CHINA							
Hong Kong ACC	S				PSR + SSRmAC + ADS-B		
Hong Kong APP	T		Yes	Yes	PSR + SSRmAC + ADS-B		
Hong Kong TWR	AD				PSR + SSRmAC + ADS-B + MLAT	2	SMR, A-SMGCS
MACAO, CHINA							
Macao TWR	AD		Yes	Yes	SSRmS+SSRmAC		SMR
DPR KOREA							
Pyongyang							
Pyongyang ACC					PSR + SSRmAC + ADS-B		
Pyongyang APP					PSR + SSRmAC + ADS-B		PAR
Pyongyang TWR							
FIJI							
Naid ACC					ADS-B + ADS-C		
Nadi APP					ADS-B		
FRENCH POLYNESIA							
Tahiti ACC					SSRmAC + ADS-B + ADS-C		
Tahiti APP					SSRmAC		

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Tahiti TWR							
INDIA							
Chennai ACC					PSR + ADS-C		MI
Chennai APP					PSR + ADS-C		MI
Chennai TWR					PSR + ADS-C		A-SMGCS
Delhi ACC					PSR + ADS-C		MI
Delhi APP					PSR + ADS-C		MI
Delhi TWR					PSR + ADS-C		A-SMGCS
Kolkata ACC					PSR + ADS-C		MI
Kolkata APP					PSR + ADS-C		MI
Kolkata TWR					PSR + ADS-C		A-SMGCS
Mumbai ACC					PSR + ADS-C		MI
Mumbai APP					PSR + ADS-C		MI
Mumbai TWR					PSR + ADS-C		A-SMGCS
Bangalore APP					PSR		MI
Bangalore TWR					PSR		MI
Shamshabad ACC					PSR		MI
Shamshabad APP					PSR		MI
Shamshabad TWR					PSR		MI
INDONESIA							
Jakarta ACC			YES	YES	PSR + SSRmS + ADS-B		~~ADS-B Trial~~ A-SMGCS, MLAT, SMR

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Jakarta APP			YES	YES	PSR + SSRmS + ADS-B		
~~Medan ACC~~					~~PSR + SSRmAC + ADS-B~~		
Aceh APP			YES	YES	SSRmS + ADS-B		
Medan APP			YES	YES	~~PSR~~ SSRmS + ADS-B		
Tanjung Pinang APP			YES	YES	SSRmS		
Padang APP			YES	YES	SSRmS		
Pontianak APP			YES	YES	SSRmS + ADS-B		
Pekanbaru APP			YES	YES	~~PSR + SSRmAC~~ SSRmS + ADS-B		
Palembang APP			YES	YES	~~PSR + SSRmAC~~ SSRmS + ADS-B		
Ujung Pandang ACC			YES	YES	~~PSR + SSRmAC~~ SSRmS + ADS-B		
Ujung Pandang APP			YES	YES	~~PSR + SSRmAC~~ SSRmS + ADS-B		~~ADS-C Trial, A-SMGCS~~
Banjarmasin APP			YES	YES	~~SSRmAC~~ SSRmS + ADS-B		
Balikpapan APP			YES	YES	~~PSR + SSRmAC~~ SSRmS + ADS-B		
Yogyakarta APP			YES	YES	~~PSR~~ SSRmS		
Surabaya APP			YES	YES	~~PSR~~ SSRmS + ADS-B		A-SMGCS, MLAT
Semarang APP			YES	YES	SSRmS + ADS-B		
Bali APP			YES	YES	SSRmS + ADS-B		~~A-SMGCS~~

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Biak APP			YES	YES	~~SSRmAC~~ SSRmS + ADS-B		
~~Jayapura ACC~~					~~PSR~~		
Jayapura APP			YES	YES	~~PSR~~ SSRmS + ADS-B		
~~Kupang ACC~~					~~ADS-B~~		
Kupang APP			YES	YES	SSRmS + ADS-B		
~~Tarakan ACC~~					~~PSR + ADS-B~~		
Tarakan APP			YES	YES	SSRmS + ADS-B		
~~Batam ACC~~					~~SSRmS~~		
~~Batam APP~~					~~SSRmS + ADS-B~~		
~~Sorong ACC~~					~~SSRmS + ADS-B~~		
Manado APP			YES	YES	SSRmS + ADS-B		
Ambon APP			YES	YES	SSRmS + ADS-B		
Merauke APP			YES	YES	SSRmS + ADS-B		
JAPAN							
Fukuoka ATMC			Yes		ADS-C		
Narita APP			Yes		PSR + SSRmAC + SSRmS		
Narita TWR			Yes		MLAT ~~, PSRMLAT~~ +PRM		SMR
~~Haneda TWR~~			~~Yes~~		~~MLAT+PRM~~		~~SMR~~

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Chubu APP			Yes		PSR + SSRmAC + SSRmS		
Chubu TWR			Yes		MLAT		SMR
Osaka APP			Yes		PSR + SSRmAC + SSRmS		
Osaka TWR			Yes		MLAT		SMR
Kansai APP			Yes		PSR + SSRmAC + SSRmS		
Kansai TWR			Yes		MLAT		SMR
Fukuoka ACC			Yes	Yes	~~PSR~~ + SSRmAC + SSRmS ~~+~~WAM		
Fukuoka APP			Yes		PSR + SSRmAC + SSRmS		
Fukuoka TWR			Yes		MLAT		SMR
Kobe ACC			Yes	Yes	SSRmAC + SSRmS+WAM		
~~Naha ACC~~					~~PSR + SSRmAC + SSRmS~~		
Naha APP			Yes		PSR + SSRmAC + SSRmS		
Naha TWR			Yes		MLAT		SMR
Hakodate APP			Yes		PSR + SSRmAC		
Sendai APP			Yes		PSR + SSRmAC		
~~Tokyo ACC~~			~~Yes~~	~~Yes~~	~~PSR + SSRmAC + SSRmS +WAM~~		
Tokyo APP			Yes		PSR + SSRmAC + SSRmS		
Tokyo TWR			Yes		MLAT + PRM		SMR
Niigata APP			Yes		PSR + SSRmAC		
Hiroshima APP			Yes		PSR + SSRmAC		
Takamatsu APP			Yes		PSR + SSRmAC		

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Kochi APP			Yes		PSR + SSRmAC		
~~Matsuyama TWR~~					~~SSRmAC~~		
~~Kitakyusyu TWR~~					~~SSRmAC~~		
Nagasaki APP			Yes		PSR + SSRmAC		
Oita APP			Yes		PSR + SSRmAC		
Kumamoto APP			Yes		PSR + SSRmAC		
Miyazaki APP			Yes		PSR + SSRmAC		
Kagoshima APP			Yes		PSR + SSRmAC		
~~Shimojishima APP~~ Sakishima APP			Yes		PSR + SSRmAC		
~~Ishigaki APP~~			~~Yes~~		~~PSR + SSRmAC~~		
Sapporo ACC			Yes	Yes	~~PSR +~~ SSRmAC + SSRmS +WAM		
LAO PDR Vientiane ACC Vientiane APP	 S T		 Yes Yes	 Yes Yes	 SSRmAC + SSRmS +ADS-B ~~PSR~~ SSRmS		 ADS-B for monitoring only
MALAYSIA Langkawi APP					PSR + SSRmAC		

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Kuala Lumpur ACC Lumpur APP Johor Bharu APP Kota Bharu APP K. Kinabalu ACC K. Kinabalu APP Kuching ACC Kuching APP					PSR + SSRmAC + SSRmS PSR + SSRmAC + ADS-C PSR + SSRmS PSR + SSRmS PSR + SSRmAC PSR + SSRmAC PSR + SSRmAC		
MALDIVES Maldives ACC Maldives APP Maldives TWR	A,D,G	No	Yes	Yes	SSRmS + ADS-B		
MONGOLIA							
Ulaanbaatar ACC Ulaanbaatar APP					ADS-C ADS-C		
MYANMAR Yangon ACC Yangon APP Mandalay APP			 Yes Yes Yes	 Yes Yes Yes	 SSRmAC + ADS-C SSRmAC + ADS-C PSR + SSRmAC		
NEPAL Kathmandu APP					PSR + SSRmAC		

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
NEW CALEDONIA Tontouta ACC Tontouta APP	A, D G	Yes	Yes	Not applicable	ADS-B	Not applicable	ADS-B Tier 3 implemented, Tier 2 in progress
NEW ZEALAND Chrischurch ACC	C D G		YES	YES	ADS-B+MLAT+PSR + SSRmAC + SSRmS	NOT APPLICABLE	
Christchurch TWR	C D G		YES	YES	ADS-B+PSR+SSRmAC+SSRmS	NA	Surface movements for situational awareness using ADSB
Auckland ACC	C D G		YES	YES	ADS-B+PSR + SSRmAC + SSRmS	NA	
Auckland TWR	C D G		YES	YES	ADSB+MLAT+PSR+SSRmAC+SSRmS		~~Auckland A-SMGCS has no SMR~~ Auckland uses surface movements for LVO using ADSB+MLAT - it has no SMR
Wellington TWR	C D G		YES	YES	ADSB+PSR+SSRmAC+SSRmS	NA	Surface movements for situational awareness using ADSB
Queenstown TWR	C D G		YES	YES	ADSB+MLAT	NA	~~Wide Area MDS planned for Queenstown in 2010~~ Surface movements for

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
							situational awareness using ADSB+MLAT
PAKISTAN Karachi ACC					PSR + SSRmAC		
Karachi APP			Yes	Yes	PSR + SSRmAC	Nil	
Karachi TWR					PSR + SSRmAC		
Lahore ACC					PSR + SSRmAC		
Lahore APP			Yes	Yes	PSR + SSRmAC	Nil	
Lahore TWR					PSR + SSRmAC		
Islamabad APP			Yes	No	PSR + SSRmAC	Nil	
Islamabad TWR					PSR + SSRmAC		
PAPUA NEW GUINEA Jacksons APP					PSR + SSRmAC		
Moresby ACC					PSR + SSRmAC		
PHILIPPINES Manila ATM Center					SSRmAC + SSRmS + ADS-B		Planned implementation on Dec. 16
Manila ACC					SSRmAC + SSRmS		
Manila APP					PSR + SSRmAC + SSRmS		
Clark APP					PSR + SSRmAC		
Mactan APP					PSR + SSRmAC		

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Kalibo/Caticlan APP					PSR + SSRmAC + SSRmS		Planned implementation on Dec. 16
Bacolod APP					PSR + SSRmAC + SSRmS		Planned implementation on Dec. 16
Davao APP					PSR + SSRmAC + SSRmS		Planned implementation on Dec. 16
REPUBLIC OF KOREA							
Jeju APP	T	No	Yes	Yes	PSR + SSRmAC + SSRmS		
Jeju TWR	T	No	No	No	PSR + SSRmAC + SSRmS + ADS-B + MLAT	2	SMR, A-SMGCS
Jungwon APP	T	No	No	Yes	PSR + SSRmAC		
CheongjuTWR	T	No	No	No	PSR + SSRmAC		
Incheon ACC	S	No		Yes	PSR + SSRmAC + ADS-B		
Incheon TWR	T	No	Yes	No	PSR + SSRmAC + SSRmS + ADS-B + MLAT	3	SMR, A-SMGCS
Seoul APP	T	No	Yes	Yes	PSR + SSRmAC		
Gimpo TWR	T	No	Yes	No	PSR + SSRmAC		SMR
Gangneung APP	T	No	No	No	PSR + SSRmAC		
Yangyang TWR					PSR + SSRmAC		
Gimhae APP	T	No	No	Yes	PSR + SSRmAC		
Gimhae TWR	T	No	No	No	PSR + SSRmAC		SMR
Daegu APP	T	No	No	No	PSR + SSRmAC		
Daegu TWR	T	No	No	No	PSR + SSRmAC		

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Gwangju APP	T	No	No	Yes	PSR + SSRmAC		
Gwangju TWR	T	No	No	No			
Muan TWR	T	No	No	No	PSR + SSRmAC		
SINGAPORE							
Singapore ACC	S		Yes	Yes	PSR + SSRmS + ADS-B + ADS-C		
Singapore APP	T		Yes	Yes	PSR + SSRmS+SSRmAC		
Singapore TWR	AD		Yes	Yes	PSR+ADS-B+MLAT	2	
SRI LANKA							
Colombo ACC					SSRmAC + ADS-B + ADS-C		ADS-C Trial
Colombo APP					PSR		
THAILAND							
Bangkok ACC	S		YES	YES	PSR + SSRmAC + SSRmS		
Bangkok APP	T		YES	YES	PSR + SSRmAC + SSRmS		
Suvarnabhumi TWR	AD		YES	YES	SMR + MLAT + A-SMGCS	2	
Don Mueang TWR	AD		YES	YES	SSRmAC		
Chiang Mai APP	T		YES	YES	SSRmS		
Chiang Mai TWR	AD		YES	YES	SSRmS		
Hat Yai APP	T		YES	YES	SSRmS		
Hat Yai TWR	AD		YES	YES	SSRmS		
Phuket APP	T		YES	YES	SSRmS		
Phuket TWR	AD		YES	YES	SSRmS		
Suratthani APP	T		YES	YES	SSRmS		

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Suratthani TWR	AD		YES	YES	SSRmS		
Ubonratchathani APP	T		YES	YES	SSRmS		
Ubonratchathani TWR	AD		YES	YES	SSRmS		
Phitsanulok APP	T		YES	YES	PSR		
Phitsanulok TWR	AD		YES	YES	PSR		
Hua Hin APP	T		YES	YES	PSR		
Hua Hin TWR	AD		YES	YES	PSR		
U Taphao					SSRmAC		
TONGA					ADS-B		
UNITED STATES							
Alaska ACC					ADS-B + ADS-C		
Hilo, Hawaii ACC					SSRmAC		
Hilo, Hawaii APP					PSR		
Hilo, Hawaii TWR							
Honolulu, Hawaii ACC					SSRmS		
Honolulu, Hawaii APP					PSR		
Honolulu, Hawaii TWR							
Kahului, Hawaii APP					PSR + SSRmAC		
Kahului, Hawaii TWR							

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Kokee, Hawaii ACC					PSR		
Lihue, Hawaii APP Lihue, Hawaii TWR					PSR + SSRmAC		
Mount Kaala, Hawaii ACC					PSR + SSRmAC		
Pahoa, Hawaii ACC					SSRmAC		
Kunianiau, Hawaii ACC					SSRmAC		
Guam ACC					PSR + SSRmAC		
Mount Santa Rosa, Guam ACC					PSR + SSRmS		
Mount Santa Rosa, Guam APP					PSR + SSRmAC		
Mount Santa Rosa, Guam TWR							
Kona, Hawaii ACC					SSRmAC		
VIET NAM Hanoi ACC					PSR + SSRmAC + ADS-B		
Noibai APP					PSR + SSRmAC + ADS-B		
Noibai TWR					PSR + SSRmAC + ADS-B		SMR, A-SMGCS

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Ho Chi Minh ACC					PSR + SSRmAC + ADS-B +ADS-C		
Danang APP					PSR + SSRmAC+ SSRmS + ADS-B		
~~Honoi ACC~~							
Tansan Nhat APP					PSR + SSRmAC + SSRmS + ADS-B		
Tansan Nhat TWR					PSR + SSRmAC + SSRmS + ADS-B		SMR, A-SMGCS

General Guidance

It is the responsibility of a State originating an amendment proposal to ensure that the proposal is consistent, complete and unambiguous, whilst it is the responsibility of the Regional Office to verify that this is the case before processing the proposal; and in particular ensure that it is:

a) **fully justified**: It should state the operational requirement that support the proposed change.

b) **accurate**: This applies in particular to typographical errors which can be critical in the case of geographical coordinates or air route headings.

c) **complete**: The proposal should give full details under the seven headings under which it is presented. Proposals for changes in airspace organization, ATS routes, location of facilities, etc. should always be accompanied by simplified, although accurate, sketches, charts, diagrams, etc.

d) **consistent**: The consequences produced by proposals should be properly reflected throughout the plan. Amendment proposals need to be systematically examined for the potential need for consequential amendment, and, if necessary, refer the proposal back to the originating State for consultation. Any consequential amendments should then be combined with the original into one multiple amendment proposal and processed in the established manner.

e) **timely**: Proposed implementation dates should allow sufficient time for the required processing formalities to be completed.

The following minimum information should be given to States in respect of each proposal that is circulated to them for comments:

a) Plan (a reference to the air navigation plan document should be given);

b) Proposed amendment;

c) Originated by xxx;

d) Originator's reason for amendment;

e) Intended date of implementation;

f) Proposal circulated to the following States and organizations; and

g) Secretariat comments.

Each proposal should be complete in itself and be stated in narrative form whenever possible. Item e) should provide a realistic implementation date or alternatively the phrase “As soon as possible after final approval of the proposal” may be used. Item g) should include additional explanatory comments or background information which is considered necessary for a clear understanding of the amendment proposal, both by States and by Headquarters as well as comments of technical and operational nature that would indicate the added value of Secretariat’s examination of the proposal. The concurrence of the State(s) whose facilities will be affected by proposals submitted by international organizations or initiated by the Secretariat should also be shown under this item.

……..……..

International Civil Aviation Organization | Organisation de l'aviation civile internationale | Organización de Aviación Civil Internacional | Международная организация гражданской авиации | منظمة الطيران المدني الدولي | 国际民用航空组织

Ref.: AN2/1: AP092/25 (CNS) 8 July 2025

Subject: Updates of CNS Tables in ICAO APAC e-ANP Vol II

Action Required: To verify and update the relevant information in CNS Tables of ICAO APAC e-ANP Vol II by submitting a Proposal for Amendments (PfA) with the ICAO APAC Office **by 31 October 2025**

Dear Sir/Madam,

I wish to inform you that the Twenty-Ninth Meeting of the Communications, Navigation and Surveillance Sub-group (CNS SG/29) of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) adopted the following Conclusion to update CNS Tables in ICAO APAC e-ANP Vol II:

Conclusion CNS SG/29/12 - Update the CNS Tables of ICAO APAC e-ANP Vol II

The following tables of ICAO APAC e-ANP Vol II are outdated and require immediate updates:

General Regional Requirements

TABLE CNS II-1 AERONAUTICAL FIXED TELECOMMUNICATIONS NETWORK (AFTN) PLAN
TABLE CNS II-2 REQUIRED ATN INFRASTRUCTURE ROUTING PLAN
TABLE CNS II-3 ATS DIRECT SPEECH CIRCUITS PLAN
TABLE CNS II-4 HF NETWORK DESIGNATORS

Specific Regional Requirements

TABLE CNS II-APAC-1 ATS INTER-FACILITY DATA COMMUNICATION (AIDC) IMPLEMENTATION PLAN
TABLE CNS II-APAC-2 RADIO NAVIGATION AIDS
TABLE CNS II-APAC-3 SURVEILLANCE

2/…

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States/Administrations are requested to update relevant CNS tables using the Template of the Proposal for Amendment (PfA) of the ICAO Asia and Pacific Air Navigation Plan. It is recommended to refer to the discussion made in the Ninth Meeting of the Spectrum Review Working Group (SRWG/9) of APANPIRG held in the ICAO APAC Regional Office, Bangkok, Thailand, from 7 – 9 May 2025, while updating **TABLE CNS II-4- HF NETWORK DESIGNATORS**. Also, consistency with **Table AOP II-1** with respect to navigational aids to be provided for each type of runway (if they are precision approach runways), including other navigational aids to be provided at each airport in **TABLE CNS II-APAC-2-RADIO NAVIGATION AIDS**. All the above-mentioned seven tables in the Word file are uploaded on the e-ANP Website for the convenience of States/Administrations. It is also suggested to review other CNS-related information in e-ANP Vol I and Vol II and propose revisions if applicable.

I will be grateful if you could submit PfA to update CNS-related information for your States/Administration in ICAO APAC e-ANP by email to apac@icao.int with cc: vmeefuengsart@icao.int and snibhani@icao.int as early as possible, preferably not later than **31 October 2025**.

Accept, Sir/Madam, the assurances of my highest consideration.

Yours sincerely,

Tao Ma
ICAO Regional Director
Asia and Pacific

Table CNS II-APAC-3 SURVEILLANCE of e-ANP Volume II with Proposed Changes

EXPLANATION OF THE TABLE

Column

1 ATS Units to consider are ACC units and Approach units responsible for International airports and alternate aerodromes, International airports and alternate aerodromes.

2 The category may be: R, S, T or AD. Categories R,S, T are defined in the Seamless ATM plan. AD means Aerodrome.

3 Indicate Yes if part(s) of the airspace referred to in Column 2 is (are) not covered by surveillance listed in column 6, and in column remarks when such gaps are planned to be bridged

4 Indicate Yes or No.

Indicate No in case of standalone displays of ATS surveillance data (should not be used operationally)

5 Indicate Yes or No

6 List all types of surveillance used:

PSR
SSRmS
SSRmAC
ADS-B
ADS-C
MLAT
WAM
PRM

7 According to the definition in Doc 9830 Appendix B

8 Remarks

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
AUSTRALIA							
International Airports							
Adelaide	C						Adelaide, Summertown
TCU			YES	YES	PSR+SSRmS+SSRmAC		
APP			YES	YES	PSR+SSRmS+SSRmAC		
TWR			YES	YES	PSR+SSRmS+SSRmAC		
Cairns	C						Redden Creek, Hanns Tableland
TCU			YES	YES	PSR+SSRmS+SSRmAC		
APP			YES	YES	PSR+SSRmS+SSRmAC		
TWR			YES	YES	PSR+SSRmS+SSRmAC		
Brisbane	C						Mt Hardgrave, Brisbane, Mt Sommerville
EC			YES	YES	PSR+SSRmAC+SSRmS+ADS-B		
APP			YES	YES	PSR+SSRmAC+SSRmS+		
ACC			YES	YES	PSR+SSRmAC+SSRmS+ADS-B		
TWR			YES	YES	PSR+SSRmAC+SSRmS+A-SMGCS+SMR	2	
Gold Coast	C						Mt Sommerville, Mt Hardgrave
APP			YES	YES	PSR+SSRmS+SSRmAC		
TWR			YES	YES	PSR+SSRmS+SSRmAC		
Melbourne	**C**						Gelliebrand Hill, Mt Macedon
EC			YES	YES	PSR+SSRmAC+SSRmS+ADS-B+		
APP			YES	YES	PSR+SSRmAC+SSRmS		
ACC			YES	YES	PSR+SSRmAC+SSRmS+ADS-B		
TWR			YES	YES	PSR+SSRmAC+SSRmS+ADS-B+A-SMGCS+SMR	2	
Perth	**C**						Perth, Kalamunda, Eclipse Hill
TCU			YES	YES	PSR+SSRmAC+SSRmS		
APP			YES	YES	PSR+SSRmAC+SSRmS		
TWR			YES	YES	PSR+SSRmAC+SSRmS+A-SMGCS+SMR	2	
Sydney	**C**						Sydney, Mt Boyce, Cecil Park
TCU			YES	YES	PSR+SSRmS+SSRmAC+WAM+MLAT		
APP			YES	YES	PSR+SSRmS+SSRmAC+WAM+MLAT		

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
TWR			YES	YES	PSR+SSRmS+SSRmAC+A-SMGCS+WAM+MLAT+SMR	2	
Darwin	**C**						Darwin, Knuckeys Lagoon
APP			YES	YES	PSR+SSRmS+SSRmAC		
TWR			YES	YES	PSR+SSRmS+SSRmAC		
Hobart	**D**						Hobart
APP			YES	YES	WAM+ADS-B		
TWR			YES	YES	WAM+ADS-B		
Karratha	D						Karratha
APP			YES	YES	ADS-B		
TWR			YES	YES	ADS-B		
Alternate aerodromes							
Alice Springs	D						Alice Springs
APP			YES	YES	ADS-B		
TWR			YES	YES	ADS-B		
Avalon	D						Gellibrand Hill, Mt Macedon
APP			YES	YES	PSR+ SSRm(S)+SSRm(A/C)		
TWR			YES	YES	PSR+ SSRm(S)+SSRm(A/C)		
Canberra	C						Mt Majura, Mt Bobbara
APP			YES	YES	PSR+ SSRm(S)+SSRm(A/C)		
TWR			YES	YES	PSR+ SSRm(S)+SSRm(A/C)		
Coffs Harbour	D						The Round Mountain, Point Lookout
APP			YES	YES	SSRm(S)+SSRm(A/C)+ADS-B		
TWR			YES	YES	SSRm(S)+SSRm(A/C)+ADS-B		
Kalgoorlie	G	Over aerodrome	YES	YES	-		
Launceston	D						Launceston
APP			YES	YES	WAM+ ADS-B		
TWR			YES	YES	WAM+ ADS-B		
Learmonth	G		YES	YES	ADS-B		Learmonth
Port Hedland	G	Over aerodrome	YES	YES	-		
Rock Hampton	D						Mt Alma
APP			YES	YES	SSRm(S)+SSRm(A/C)		
TWR			YES	YES	SSRm(S)+SSRm(A/C)		
Tindal	C						Tindal
APP			YES	YES	PSR+SSRm(A/C)		
TWR			YES	YES	PSR+SSRm(A/C)		
Townsville	C						Townsville, Tabletop
APP			YES	YES	PSR+ SSRm(S)+SSRm(A/C)		

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
TWR			YES	YES	PSR+ SSRm(S)+SSRm(A/C)		
Other aerodromes							
Broome	D		YES	YES	ADS-B		Broome
Albury	D		YES	YES	Higher level SSR coverage		Mt Bobbara
Tamworth	D		YES	YES	?		The Round Mountain
Mackay	D		YES	YES	SSRm(A/C)		Swampy Ridge
Hamilton Island	D		YES	YES	SSRm(A/C)		Swampy Ridge
BANGLADESH							
Dhaka APP	C				PSR+SSRm AC		
BHUTAN							
Pato TWR	C		No	No	ADS-B		Used for situation awareness
BRUNEI DARUSALAM							
Brunei APP					PSR + SSRmAC		
CAMBODIA					SSRmAC		
CHINA							
Beijing ACC					PSR + SSRmAC		
Beijing APP					PSR + SSRmAC		
Beijing TWR					PSR + SSRmAC		
Tianjin APP							
Tianjin TWR					SSRmAC		
Shijiazhuang APP							
Shijiazhuang TWR					SSRmAC		
Taiyuan ACC					PSR + SSRmAC		
Taiyuan APP							
Taiyuan TWR					PSR + SSRmAC		
Hohhot ACC					SSRmAC		
Hohhot APP							

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Hohhot TWR					SSRmAC		
Guangzhou ACC					PSR + SSRmAC		
Guangzhou APP					PSR + SSRmAC		
Guangzhou TWR					PSR + SSRmAC		
Shenzhen APP							
Shenzhen TWR					PSR + SSRmAC		
Zhuhai ACC					PSR + SSRmAC		
Zhuhai APP					PSR + SSRmAC		
Zhuhai TWR					PSR + SSRmAC		
Sanya ACC					PSR + SSRmAC		
Sanya APP					PSR + SSRmAC		
Sanya TWR					PSR + SSRmAC		
Haikou ACC					PSR + SSRmAC		
Haikou APP							
Haikou TWR					PSR + SSRmAC		
Changsha ACC					PSR + SSRmAC		
Changsha APP							
Changsha TWR					PSR + SSRmAC		
Enshi TWR					SSRmAC		
Wuhan ACC					PSR + SSRmAC		
Wuhan APP							
Wuhan TWR					PSR + SSRmAC		
Zhengzhou ACC					PSR + SSRmAC		
Zhengzhou APP							
Zhengzhou TWR					PSR + SSRmAC		
Guilin ACC					PSR + SSRmAC		
Guilin APP							
Guilin TWR					PSR + SSRmAC		

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Nanning ACC					SSRmAC		
Nanning TWR					SSRmAC		
Zhanjiang ACC					SSRmAC		
Zhanjiang APP							
Zhanjiang TWR					SSRmAC		
Shantou ACC					PSR + SSRmAC		
Shantou APP							
Shantou TWR					PSR + SSRmAC		
Kunming ACC					PSR + SSRmAC + AC		
Kunming APP							
Kunming TWR					PSR + SSRmAC		
Chengdu ACC					PSR + SSRmAC + ADS-C		
Chengdu APP							
Chengdu TWR					PSR + SSRmAC		
Guiyang ACC					PSR + SSRmAC		
Guiyang APP							
Guiyang TWR					PSR + SSRmAC		
Chongqing ACC					PSR + SSRmAC		
Chongqing APP							
Chongqing TWR					PSR + SSRmAC		
Shanghai ACC					PSR + SSRmAC		
Shanghai APP					PSR + SSRmAC		
Shanghai TWR					PSR + SSRmAC		
Jinan ACC					SSRmAC		
Jinan APP							
Jinan TWR					SSRmAC		
Qingdao ACC					SSRmAC		
Qingdao APP							
Qingdao TWR					SSRmAC		

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Hefei ACC Hefei APP Hefei TWR					PSR + SSRmAC PSR + SSRmAC		
Nanjing ACC Nanjing APP Nanjing TWR					PSR + SSRmAC PSR + SSRmAC		
Lianyungang ACC Lianyungang APP Lianyungang TWR					SSRmAC SSRmAC		
Xuzhou TWR					SSRmAC		
Hangzhou ACC Hangzhou APP Hangzhou TWR					PSR + SSRmAC PSR + SSRmAC		
Nanchang ACC Nanchang APP Nanchang TWR					PSR + SSRmAC PSR + SSRmAC		
Fuzhou ACC Fuzhou APP Fuzhou TWR					PSR + SSRmAC PSR + SSRmAC		
Wenzou TWR					SSRmAC		
Xiamen ACC Xiamen APP Xiamen TWR					PSR + SSRmAC PSR + SSRmAC		
Shenyang ACC Shenyang APP Shenyang TWR					PSR + SSRmAC PSR + SSRmAC		
Dalian ACC Dalian APP Dalian TWR					PSR + SSRmAC PSR + SSRmAC		

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Harbin ACC Harbin APP Harbin TWR Xi'an ACC Xi'an APP Xi'an TWR Lanzhou ACC Lanzhou APP Lanzhou TWR Urumqi ACC Urumqi APP Urumqi TWR					PSR + SSRmAC PSR + SSRmAC PSR + SSRmAC PSR + SSRmAC SSRmAC + AC SSRmAC PSR + SSRmAC + AC PSR + SSRmAC		
HONG KONG, CHINA Hong Kong ACC Hong Kong APP Hong Kong TWR	 S T AD		 Yes	 Yes	 PSR + SSRmAC + ADS-B PSR + SSRmAC+ADS-B PSR + SSRmAC +ADS-B + MLAT	 2	 SMR, A-SMGCS
MACAO, CHINA Macao TWR	AD		Yes	Yes	SSRmS+SSRmAC		SMR
DPR KOREA **Pyongyang** Pyongyang ACC Pyongyang APP Pyongyang TWR					 PSR + SSRmAC + ADS-B PSR + SSRmAC + ADS-B		 PAR
FIJI Naid ACC Nadi APP					ADS-B + ADS-C ADS-B		
FRENCH POLYNESIA Tahiti ACC Tahiti APP Tahiti TWR					SSRmAC + ADS-B + ADS-C SSRmAC		

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
INDIA **Chennai**							
ACC	S,T		YES	YES	PSR+ SSRmS + ADS-C+ SADS-B		
APP	T,AD		YES	YES	PSR+ SSRmS + ADS-C+ SADS-B +A-SMGCS	II	
~~Chennai TWR~~					~~PSR + ADS-C~~		~~A-SMGCS~~
Delhi							
Delhi ACC	S,T		YES	YES	PSR +SSRmS + ADS-C		~~MI~~
Delhi APP	T,AD		YES	YES	PSR +SSRmS + ADS-C+A-SMGCS		~~MI~~
~~Delhi TWR~~					~~PSR + ADS-C~~		~~A-SMGCS~~
Kolkata							
Kolkata ACC	S,T		YES	YES	PSR+ SSRmS + ADS-C+ ADS-B+SADS-B		~~MI~~
Kolkata APP	T,AD		YES	YES	PSR+ SSRmS + ADS-C+ ADS-B+SADS-B+A-SMGCS	II	~~MI~~
~~Kolkata TWR~~					~~PSR + ADS-C~~		~~A-SMGCS~~
Mubai							
Mumbai ACC	S,T		YES	YES	PSR+ SSRmS + ADS-C+ SADS-B+ADS-B		~~MI~~
Mumbai APP	T,AD		YES	YES	PSR+ SSRmS + ADS-C+ ADS-B+SADS-B+A-SMGCS	II	MI
~~Mumbai TWR~~					~~PSR + ADS-C~~		~~A-SMGCS~~
Banglore							
Bangalore ACC	T		YES	YES	PSR+ SSRmS +ADS-B		~~MI~~

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Bangalore APP	T,AD		YES	YES	PSR+ SSRmS +ADS-B+ A-SMGCS	II	~~MI~~
Hyderabad							
ACC	T		YES	YES	PSR+ SSRmS +ADS-B		
APP	T,AD		YES	YES	PSR+ SSRmS +ADS-B+ A-SMGCS	II	
Amritsar							
APP	T,AD		YES	YES	PSR + SSRmS + ADS-B+ A-SMGCS	II	
Lucknow							
ACC	T		YES	YES	PSR + SSRmS + ADS-B		
APP	T,AD		YES	YES	PSR + SSRmS + ADS-B+ A-SMGCS	II	
Jaipur							
ACC	T		YES	YES	PSR + SSRmS + ADS-B		
APP	T,AD		YES	YES	PSR + SSRmS + ADS-B+ A-SMGCS	II	
Bhubaneshwar							
APP	T,AD		YES	YES	SSRmS + ADS-B+ A-SMGCS	II	
Calicut							
APP	T,AD		YES	YES	ADS-B		
Cochin							
ACC	T		YES	YES	PSR + SSRmS + ADS-B		
APP	T,AD		YES	YES	PSR + SSRmS + ADS-B+ A-SMGCS	II	
Coimbatore							
APP	T,AD		YES	YES	SSRmS + ADS-B		
Nagpur							

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
ACC	S,T		YES	YES	PSR + SSRmS + ADS-B		
APP	T,AD		YES	YES	PSR + SSRmS + ADS-B		
Goa							
APP	T,AD		YES	YES	PSR + SSRmS + ADS-B		
Guwahati							
ACC	T		YES	YES	PSR + SSRmS + ADS-B		
APP	T,AD		YES	YES	PSR + SSRmS + ADS-B+ A-SMGCS	II	
Imphal							
APP	T,AD	YES	NO	NO	PSR + SSRmS		Traffic volume is low, hence surveillance based Approach not required
Kannur							
APP	T,AD	YES	NO	NO			Traffic volume is low, hence surveillance based Approach not required
Varanasi							
ACC	T		YES	YES	SSRmS+ ADS-B		
APP	T,AD		YES	YES	SSRmS+ ADS-B		
Mangalore							
ACC	T		YES	YES	PSR + SSRmS + ADS-B		
APP	T,AD		YES	YES	PSR + SSRmS + ADS-B		
Rajkot(Hirasar)							
APP	T,AD	YES	NO	NO			Traffic volume is low, hence surveillance based Approach not required
Ahmedabad							
ACC	T		YES	YES	PSR + SSRmS +ADS-B		ACC

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
APP	T,AD		YES	YES	PSR + SSRmS + ADS-B+ A-SMGCS	II	APP
Surat							
APP	T,AD	YES	NO	NO			Traffic volume is low, hence surveillance based Approach not required
Trivandrum							
ACC	T		YES	YES	PSR + SSRmS + ADS-B		
APP	T,AD		YES	YES	PSR + SSRmS + ADS-B		
Trichy							
APP	T,AD		YES	YES	SSRmS+ ADS-B		
MOPA							
APP	T,AD		YES	YES	PSR + SSRmS + ADS-B		
Tirupati							
APP	T,AD	YES	NO	NO			Traffic volume is low, hence surveillance based Approach not required
Vijayawada							
APP	T,AD		YES	NO	ADS-B		Traffic volume is low, hence surveillance based Approach not required
Ayodhya							
APP	T,AD	YES	NO	NO			Traffic volume is low, hence surveillance based Approach not required
~~Shamshabad ACC~~					~~PSR~~		~~MI~~
~~Shamshabad APP~~					~~PSR~~		~~MI~~
~~Shamshabad TWR~~					~~PSR~~		~~MI~~

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
INDONESIA							
Jakarta ACC					PSR + SSRmAC + ADS-B		ADS-B Trial
Jakarta APP					PSR + SSRmAC + ADS-B		ADS-C Trial, A-SMGCS
Medan ACC					PSR + SSRmAC + ADS-B		
Medan APP					PSR + ADS-B		
Tanjung Pinang APP					SSRmAC		
Pontianak APP					ADS-B		
Pekanbaru APP					PSR + SSRmAC + ADS-B		
Palembang APP					PSR + SSRmAC + ADS-B		
Ujung Pandang ACC					PSR + SSRmAC + ADS-B		
Ujung Pandang APP					PSR + SSRmAC + ADS-B		ADS-C Trial, A-SMGCS
Banjarmasin APP					SSRmAC + ADS-B		
Balikpapan APP					PSR + SSRmAC + ADS-B		
Yogyakarta APP					PSR		
Surabaya APP					PSR		A-SMGCS
Bali ACC							
Bali APP					ADS-B		A-SMGCS
Biak APP					SSRmAC + ADS-B		
Jayapura ACC					PSR		
Jayapura APP					PSR		
Kupang ACC					ADS-B		
Kupang APP					ADS-B		

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Tarakan ACC					PSR + ADS-B		
Batam ACC					SSRmS		
Batam APP					SSRmS + ADS-B		
Sorong ACC					SSRmS + ADS-B		
JAPAN							
Fukuoka ATMC					ADS-C		
Narita APP					PSR + SSRmAC + SSRmS		
Narita TWR					SMR + MLAT~~MLAT, PSRMLAT~~	2	~~SMR~~
Haneda TWR					SMR + MLAT~~MLAT~~	2	~~SMR~~
Chubu APP					PSR + SSRmAC + SSRmS		
Chubu TWR					SMR + MLAT~~MLAT~~	2	~~SMR~~
~~Osaka APP~~					~~PSR + SSRmAC + SSRmS~~	2	
Osaka TWR					SMR + MLAT~~MLAT~~		~~SMR~~
Kansai APP					PSR + SSRmAC + SSRmS	2	
Kansai TWR					SMR + MLAT~~MLAT~~		~~SMR~~
Fukuoka ACC			YES	YES	SSRmAC + SSRmS +WAM+ ADS-B~~PSR + SSRmAC + SSRmS~~	2	
Fukuoka APP					PSR + SSRmAC + SSRmS		
Fukuoka TWR					SMR + MLAT~~MLAT~~		~~SMR~~
~~Naha ACC~~					~~PSR + SSRmAC + SSRmS~~		
Naha APP					PSR + SSRmAC + SSRmS	2	
Naha TWR					SMR + MLAT~~MLAT~~		~~SMR~~
Hakodate APP					PSR + SSRmAC		
Asahikawa TWR					PSR + SSRmAC		
Meman TWR					PSR + SSRmAC		

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Kushiro TWR					PSR + SSRmAC		
Obihiro TWR					PSR + SSRmAC		
Hakodate APP					PSR + SSRmAC		
Aomori TWR					PSR + SSRmAC		
Akita TWR					PSR + SSRmAC		
Sendai APP					PSR + SSRmAC		
Tokyo ACC			YES	YES	SSRmAC + SSRmS +WAM+ ADS-B~~PSR + SSRmAC + SSRmS~~		
Tokyo APP					PSR + SSRmAC + SSRmS		
Niigata APP					PSR + SSRmAC		
Toyama TWR					PSR + SSRmAC		
Kobe ACC			YES	YES	SSRmAC + SSRmS +WAM+ ADS-B		
Kobe TWR					PSR + SSRmAC		
Okayama TWR					PSR + SSRmAC		
~~Chubu APP~~					~~PSR + SSRmAC + SSRmS~~		
Hiroshima APP					PSR + SSRmAC		
Takamatsu APP					PSR + SSRmAC		
Kochi TWR ~~APP~~					PSR + SSRmAC		
Matsuyama TWR					SSRmAC		
Kitakyusyu TWR					SSRmAC		
Nagasaki APP					PSR + SSRmAC		
Oita APP					PSR + SSRmAC		

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Kumamoto APP					PSR + SSRmAC		
Miyazaki APP					PSR + SSRmAC		
Kagoshima APP					PSR + SSRmAC		
Shimoji TWR ~~Shimojishima APP~~					PSR + SSRmAC		
Miyako TWR					PSR + SSRmAC		
Ishigaki TWR~~APP~~					PSR + SSRmAC		
~~Sapporo ACC~~					~~PSR + SSRmAC + SSRmS~~		
LAO PDR Vientiane ACC Vientiane APP	 S T		 Yes Yes	 Yes Yes	 SSRmAC + SSRmS+ADS-B ~~PSR~~ + SSRmS+ADS-B		
MALAYSIA Langkawi APP	T	No	Yes	Yes	~~PSR + SSRmAC~~ PSR + SSRmS + ADS-B		
Langkawi TWR	AD	No	Yes	Yes	PSR + SSRmS		
Kuala Lumpur ACC	R, S	Yes	Yes	Yes	~~PSR + SSRmAC + SSRmS~~ PSR + SSRmAC + SSRmS + ADS-B + ADS-C		Surveillance Gap at Bay of Bengal. Space-based ADS-B Surveillance project is ongoing.
Kuala Lumpur APP	T	No	Yes	Yes	~~PSR + SSRmAC + ADS-C~~ PSR + SSRmAC + SSRmS + ADS-B + PRM		
Kuala Lumpur TWR	AD	No	Yes	Yes	PSR + SSRmS + MLAT + PRM	2	SMRs are used for Situational Awareness

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Johor Bharu APP	T	No	Yes	Yes	~~PSR + SSRmS~~ PSR+ SSRmAC		
Johor Bharu TWR	AD	No	Yes	Yes	PSR+ SSRmAC		
Kota Bharu APP	T	No	Yes	Yes	~~PSR + SSRmS~~ PSR + SSRmAC		
Kota Bharu TWR	AD	No	Yes	Yes	~~PSR + SSRmS~~ PSR + SSRmAC		
K. Kinabalu ACC	S	No	Yes	Yes	~~PSR + SSRmAC~~ PSR + SSRmAC + SSRmS + ADS-B		
K. Kinabalu APP	T	No	Yes	Yes	~~PSR + SSRmAC~~ PSR + SSRmAC + SSRmS + ADS-B		
K. Kinabalu TWR	AD	No	Yes	Yes	PSR + SSRmS		
Kuching ACC	S	No	Yes	Yes	~~PSR + SSRmAC~~ PSR + SSRmAC + SSRmS + ADS-B		
Kuching APP	T	No	Yes	Yes	~~PSR + SSRmAC~~ PSR + SSRmAC + SSRmS + ADS-B		
Kuching TWR	AD	No	Yes	Yes	PSR + SSRmS		

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Miri APP Miri TWR Penang TWR	T AD AD	No No No	Yes Yes Yes	Yes Yes Yes	~~PSR + SSRmAC~~ PSR + SSRmS + ADS-B PSR + SSRmS PSR + SSRmAC + SSRmS + ADS-B		
MONGOLIA Ulaanbaatar ACC Ulaanbaatar APP					 ADS-C ADS-C		
MYANMAR Yangon ACC Yangon APP Mandalay APP			 Yes Yes Yes	 Yes Yes Yes	 SSRmAC + ADS-C SSRmAC + ADS-C PSR + SSRmAC		
NEPAL Kathmandu APP					PSR + SSRmAC		
NEW CALEDONIA Tontouta ACC Tontouta APP	A, D G	Yes	Yes	Not applicable	ADS-B	Not applicable	ADS-B Tier 3 implemented, Tier 2 in progress
NEW ZEALAND Christchurch ACC Christchurch TWR					PSR + SSRmAC + SSRmS+ADS-B		
Auckland ACC Auckland TWR Wellington TMA					PSR+SSRmAC + SSRmS+ADS-B PSR + SSRmAC + SSRmS + ADS-B		Auckland A-SMGCS has no SMR

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Queenstown APP					MLAT + ADS-B		~~Wide Area MDS planned for Queenstown in 2010~~
PAKISTAN							
Karachi ACC	S	NIL			PSR + SSRmAC+SSRmS+ADS-B		
Karachi APP	T	NIL	Yes	Yes	PSR + SSRmAC+SSRmS+ADS-B	Nil	
Karachi TWR	AD	NIL			PSR + SSRmAC+ SSRmS+ADS-B		Data used for only situational awareness.
Lahore ACC	S	NIL			PSR + SSRmAC+ SSRmS+ADS-B	Nil	
Lahore APP	T	NIL	Yes	Yes	PSR + SSRmAC+ SSRmS+ADS-B	Nil	
Lahore TWR	AD	NIL			PSR + SSRmAC+SSRmS+ADS-B+ MLAT+SMR	V	PSR+SSRmAC+SSRmS+ADS-B data used for only situational awareness.
Islamabad ACC	S	NIL	Yes	~~No~~ Yes	PSR + SSRmAC + SSRmS + ADS-B	Nil	
Islamabad APP	T				PSR + SSRmAC+SSRmS+ADS-B		
Islamabad TWR	AD				PSR + SSRmAC+SSRmS+ADS-B		Data used for only situational awareness.
PAPUA NEW GUINEA							
Jacksons APP	C		Yes	Yes	PSR + SSRmAC+SSRmS+ADS-B		
Moresby ACC	C		Yes	Yes	PSR + SSRmAC+SSRmS+ADS-B		
PHILIPPINES							
Manila ATM Center					SSRmAC + SSRmS + ADS-B		Planned implementation on Dec. 16
Manila ACC					SSRmAC + SSRmS		
Manila APP					PSR + SSRmAC + SSRmS		
Clark APP					PSR + SSRmAC		
Mactan APP					PSR + SSRmAC		
Kalibo/Caticlan APP					PSR + SSRmAC + SSRmS		Planned implementation on Dec. 16

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Bacolod APP					PSR + SSRmAC + SSRmS		Planned implementation on Dec. 16
Davao APP					PSR + SSRmAC + SSRmS		Planned implementation on Dec. 16
REPUBLIC OF KOREA							
Jeju APP	T	No	Yes	Yes	PSR + SSRmAC + SSRmS		
Jeju TWR	T	No	No	No	PSR + SSRmAC + SSRmS	2	SMR, A-SMGCS
Jungwon APP	T	No	No	Yes	PSR + SSRmAC		
CheongjuTWR	T	No	No	No	PSR + SSRmAC		
Incheon ACC	S	No		Yes	PSR + SSRmAC		
Incheon TWR	T	No	Yes	No	PSR + SSRmAC	3	SMR, A-SMGCS
Seoul APP	T	No	Yes	Yes	PSR + SSRmAC		
Gimpo TWR	T	No	Yes	No	PSR + SSRmAC		SMR
Gangneung APP	T	No	No	No	PSR + SSRmAC		
Yangyang TWR					PSR + SSRmAC		
Gimhae APP	T	No	No	Yes	PSR + SSRmAC		
Gimhae TWR	T	No	No	No	PSR + SSRmAC		SMR
Daegu APP	T	No	No	No	PSR + SSRmAC		
Daegu TWR	T	No	No	No	PSR + SSRmAC		
Gwangju APP	T	No	No	Yes	PSR + SSRmAC		
Gwangju TWR	T	No	No	No			
Muan TWR	T	No	No	No	PSR + SSRmAC		
SINGAPORE							
Singapore ACC	S		Yes	Yes	PSR + SSRmS + ADS-B + ADS-C		
Singapore APP	T		Yes	Yes	PSR + SSRmS+~~SSRmAC~~		
Singapore TWR	AD		Yes	Yes	PSR+ADS-B+MLAT	2	
SRI LANKA							
Colombo ACC	R,S,T	No	Yes	Yes	SSRmAC + ADS-B + ADS-C		~~ADS-C Trial~~ SSRmS to be implemented in 2026

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Colombo APP	T	No	Yes	Yes	SSRmAC + ADS-B + ~~PSR~~		
BIA TWR	AD						
Mattala APP	T	No	Yes	Yes	SSRmAC + ADS-B		
Colombo TWR	AD						
Mattala TWR	AD						
Ratmalana TWR	AD						
Batticaloa TWR	AD						
Jaffna TWR	AD						
THAILAND							
Bangkok ACC	S		YES	YES	PSR + SSRmAC + SSRmS		
Bangkok APP	T		YES	YES	PSR + SSRmAC + SSRmS		
Suvarnabhumi TWR	AD		YES	YES	SMR + MLAT + SSRmAC + SSRmS ~~+ A-SMGCS~~	2	
Don Mueang TWR	AD		YES	YES	MLAT + SSRmAC+ SSRmS		
Chiang Mai APP	T		YES	YES	SSRmAC + SSRmS + ADS-B		
Chiang Mai TWR	AD		YES	YES	SSRmAC + SSRmS		
Hat Yai APP	T		YES	YES	SSRmAC + SSRmS + ADS-B		
Hat Yai TWR	AD		YES	YES	PSR + SSRmAC + SSRmS		
Phuket APP	T		YES	YES	SSRmAC + SSRmS + ADS-B		
Phuket TWR	AD		~~YES~~NO	YES	SSRmAC + SSRmS		
Krabi APP	T		YES	TES	SSRmAC + SSRmS + ADS-B		
Krabi TWR	AD		NO	YES	SSRmAC + SSRmS		
Suratthani APP	T		YES	YES	SSRmAC + SSRmS + ADS-B		
Suratthani TWR	AD		~~YES~~NO	YES	SSRmAC + SSRmS		
~~Ubonratchathani APP~~	~~T~~		~~YES~~	~~YES~~	~~SSRmS~~		
~~Ubonratchathani TWR~~	~~AD~~		~~YES~~	~~YES~~	~~SSRmS~~		
~~Phitsanulok APP~~	~~T~~		~~YES~~	~~YES~~	~~PSR~~		
~~Phitsanulok TWR~~	~~AD~~		~~YES~~	~~YES~~	~~PSR~~		
~~Hua Hin APP~~	~~T~~		~~YES~~	~~YES~~	~~PSR~~		
~~Hua Hin TWR~~	~~AD~~		~~YES~~	~~YES~~	~~PSR~~		

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Chiang Rai APP	T		NO	YES	SSRmAC + SSRmS + ADS-B		
Chiang Rai TWR	AD		NO	YES	SSRmAC + SSRmS		
Samui APP	T		YES	YES	SSRmAC + SSRmS + ADS-B		
Samui TWR	AD		NO	YES	SSRmAC + SSRmS		
U-Taphao APP	T		NO	NO	~~SSRmAC~~		
U-Tapao TWR	AD		NO	NO			
TONGA					ADS-B		
UNITED STATES							
Alaska ACC					ADS-B + ADS-C		
Hilo, Hawaii ACC					SSRmAC		
Hilo, Hawaii APP					PSR		
Hilo, Hawaii TWR							
Honolulu, Hawaii ACC					SSRmS		
Honolulu, Hawaii APP	B				PSR		
Honolulu, Hawaii TWR	B						
Kahului, Hawaii APP	C		YES		PSR + SSRmAC		
Kahului, Hawaii TWR	C		YES				
Kokee, Hawaii ACC					PSR		
Lihue, Hawaii APP					PSR + SSRmAC		
Lihue, Hawaii TWR							
Mount Kaala, Hawaii ACC					PSR + SSRmAC		
Pahoa, Hawaii ACC					SSRmAC		
Kunianiau, Hawaii ACC					SSRmAC		

ATS Units Served	Category of airspace	Surveillance Gaps	Integration of Surveillance Information into ATC Situation Display	Multi-Surveillance Data Processing Capability	Surveillance Used	Level of A-SMGCS Implemented	Remarks
1	2	3	4	5	6	7	8
Guam ACC					PSR + SSRmAC		
Mount Santa Rosa, Guam ACC					PSR + SSRmS		
Mount Santa Rosa, Guam APP					PSR + SSRmAC		
Mount Santa Rosa, Guam TWR							
Kona, Hawaii ACC					SSRmAC		
VIET NAM							
Hanoi ACC					PSR + SSRmAC + ADS-B		
Noibai APP					SSRmAC		
Noibai TWR							SMR, A-SMGCS
Ho Chi Minh ACC					PSR + SSRmAC + ADS-B +ADS-C		
Danang APP					PSR		
Honoi ACC							
Tansan Nhat APP					PSR		
Tansan Nhat TWR							SMR, A-SMGCS

NOTES ON THE PRESENTATION OF THE PROPOSED AMENDMENT

1. The text of the amendment is arranged to show deleted text with a line through it and new text highlighted with grey shading, as shown below:

a) ~~Text to be deleted is shown with a line through it.~~	text to be deleted in
b) New text to be inserted is highlighted with grey shading.	new text to be inserted in
c) ~~Text to be deleted is shown with a line through it~~ followed by the replacement text which is highlighted with grey shading.	new text to replace existing text

REVISED SURVEILLANCE STRATEGY FOR THE APAC REGION

Considering that:

1. States are implementing CNS/ATM systems to gain safety, efficiency and environmental benefits, and have endorsed the move toward satellite and data link technologies;

2. The future air traffic environment will require increased use of aircraft-derived surveillance information for the implementation of a seamless automated air traffic flow management system;

3. The 11th Air Navigation Conference endorsed the use of ADS-B as an enabler of the global air traffic management concept and encouraged States to support cost-effective early implementation of ADS-B applications;

4. The 12th Air Navigation Conference endorsed the ICAO Aviation System Block Upgrades (ASBU) Framework with Modules specifying effective use of ADS-B/MLAT and associated communication technologies in bridging surveillance gaps and its role in supporting future trajectory-based ATM operating concepts. Cooperation between States is the key to achieve harmonized ATM system operations;

5. The 13th Air Navigation Conference endorsed the multilayer structure for the GANP, the ASBU and initial version of basic building block (BBB) frameworks and its change management process, which are available in an interactive format as part of the web-based GANP Portal. This allows ICAO to incorporate a flexible framework for new/emerging surveillance-related concepts such as space based ADS-B into future editions of the GANP;

6. APANPIRG has decided to use the 1090MHz Extended Squitter data link for ADS-B air-ground and air-air applications in the Asia/Pacific Region;

7. Use of surveillance systems that do not require GNSS will continue to meet many critical surveillance needs for the foreseeable future;

8. SARPs, PANS and guidance material for the use of ADS-B have been developed;

9. Availability of new technologies, such as space based ADS-B which is now operationally used by some States;

10. Mode S and ADS-B avionics (including DAPs) and processing systems are available;

11. ADS-B IN applications and equipment are now available in commercial airliners and ICAO ASBUs include ADS-B IN applications;

12. There are continuing significant pressures on the radio spectrum for purposes outside aviation, particularly in the primary radar spectrum; and

13. ADS-B security issues are addressed by the ADS-B regional guidance material and security issues of Mode S surveillance may need to be further considered in the future.

THE SURVEILLANCE STRATEGY FOR THE ASIA/PACIFIC REGION IS TO:

1. Minimize the reliance upon pilot position reporting, particularly voice position reporting, for surveillance of aircraft;

2. Maximize the use of ADS-B on major air routes and in terminal areas, giving consideration to the mandatory carriage of ADS-B Out as specified in *Note 1* and use of ADS-B for ATC separation service;

3. Reduce the dependence on Primary Radar for area surveillance, consider the ongoing need for primary radars in terminal areas with a view to reducing primary surveillance coverage or use of phased array radar or other technologies with coverage focusing on areas of concern, and the potential use of alternate technologies or procedures (e.g. transponder veil regulations);

4. Encourage deployment of Mode S systems instead of Mode A/C only radars when replacement is required;

5. Provide maximum contiguous ATS surveillance coverage of air routes using 1090MHz Extended Squitter (1090ES) ADS-B, Wide Area Multilateration and Mode S SSR to meet operational and safety requirements;

6. Make ~~full~~ use of aircraft Mode S capabilities, where suitable surveillance systems and ATM automation systems are available, to reduce reliance on 4-digit octal codes. Mode S capabilities such as DAPs should also be considered for use~~d~~ to support ATM services where appropriate;

7. Make use of alternative technologies where technical constraint or comparative cost benefit analysis does not support the use of ADS-B, SSR or Multilateration;

8. Make use of Multilateration and/or ADS-B for surface, terminal and area surveillance where appropriate, feasible and cost effective;

9. Monitor ADS-B OUT developments such as Version 3 (DO-260C) MOPS development, and Version 2 (DO260B) equipage in the APAC region. ~~At an appropriate time (circa 2020)~~ APAC States should review progress and consider development of transition plans where cost/benefit studies indicate positive advantages for the region;

10. Monitor ADS-B IN development and cost benefits to ensure that APAC States are able to take advantage of ADS-B IN benefits when appropriate, through procedures, rules and ATC automation capabilities;

11. To the extent possible, implement ADS-B in the non-radar environment as a priority. In the radar or other surveillance environment, use ADS-B to supplement or replace existing surveillance coverage, subject to local factors and risk assessment;

12. Make use of surveillance capability to support the GADSS as appropriate;

13. Implementation of surveillance capability should also include consideration of contingency surveillance requirements [Note 2] and multilayer surveillance provision should be implemented to enhance the availability of surveillance services;

14. Monitor development of surveillance systems to support integration of UAS including new technology capable to detect non cooperative targets such as UAS.

15. Encourage sharing of surveillance data, utilizing provisions in the Region such as CRV, to improve safety and efficiency in air traffic management with a justifiable cost; and

16. Monitor potential congestion on 1090 MHz by means of routine measurements of channel occupancy, at both terrestrial and airborne levels, and monitor the availability of 24-bit aircraft address

Note 1:

a) *Version 0 ES as specified in Annex 10, Volume IV, Chapter 3, Paragraph3.1.2.8.6 (up to and including Amendment 82 to Annex 10) and Chapter 2 of* Technical Provisions for Mode S Services and Extended Squitter *(ICAO Doc 9871) (Equivalent to DO260) to be used till at least 2020.*

b) *Version 1 ES as specified in Chapter 3 of* Technical Provisions for Mode S Services and Extended Squitter *(ICAO Doc 9871) (Equivalent to DO260A);*

c) *Version 2 ES as specified in Chapter 4 of* Technical Provisions for Mode S Services and Extended Squitter *(ICAO Doc 9871) (Equivalent to DO260B).*

d) *States/Administrations in APAC region are strongly encouraged to mandate aircraft with a maximum take-off mass exceeding 5 700 kg or having a maximum cruising true airspeed capability greater than 250 knots, to be equipped with ADS-B OUT avionics compliant with Version 2 ES (DO-260B) or later version with date of manufacture on or after 1 January 2020.*

Note 2:

Contingency surveillance requirements are requirements to handle contingency situations in surveillance thus retain capacity to continue providing/using air navigation services. Such situations include but are not limited to the followings:

- *failure of surveillance system or infrastructure such as ground stations or GNSS failure;*
- *avionics failure or equipped aircraft transmitting bad data in flight with good data integrity indicators.*

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