



ICAO

*International Civil Aviation Organization***Ninth Meeting of the Surveillance Implementation
Coordination Group (SURICG/9)***Bangkok, Thailand, 07 - 10 May 2024*

Agenda Item 4: 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 and WP/06 to SURICG/8 to review regional requirements and invited feedback to maintain the currency and accuracy of the relevant information.

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.

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

2.6 The Revised Surveillance Strategy of APAC is placed at the **Appendix C** 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) review and update planning requirements provided in **Appendix B**; and
- c) discuss any related issues as appropriate.



International Civil Aviation Organization	Organisation de l'aviation civile internationale	Organización de Aviación Civil Internacional	Международна я организация гражданской авиации	منظمة الطيران المدني الدولي	国际民用 航空组织
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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) <i>Add, Amend or Delete</i> 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
	* <i>for information</i>		

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	2	
APP			YES	YES	PSR+SSRmAC+SSRmS		
TWR			YES	YES	PSR+SSRmAC+SSRmS+A-SMGCS+SMR		
Sydney	C						Sydney, Mt Boyce, Cecil Park
TCU			YES	YES	PSR+SSRmS+SSRmAC+WAM+MLAT	2	
APP			YES	YES	PSR+SSRmS+SSRmAC+WAM+MLAT		
TWR			YES	YES	PSR+SSRmS+SSRmAC+A-SMGCS+WAM+MLAT+SMR		
Darwin	C						Darwin, Knuckeyes 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 Coffs Harbour	D	Over aerodrome	YES	YES	PSR+ SSRm(S)+SSRm(A/C)		The Round Mountain, Point Lookout
APP	G		YES	YES	SSRm(S)+SSRm(A/C)+ADS-B		
TWR			YES	YES	SSRm(S)+SSRm(A/C)+ADS-B		
Kalgoorlie			YES	YES	-		
Launceston	D	Over aerodrome					Launceston
APP	YES		YES	WAM+ ADS-B			
TWR	YES		YES	WAM+ ADS-B			
Learmonth	G		YES	YES	ADS-B		
Port Hedland	G		YES	YES	-		
Rock Hampton	D						
APP	C		YES	YES	SSRm(S)+SSRm(A/C)		
TWR			YES	YES	SSRm(S)+SSRm(A/C)		
Tindal							
APP	C	YES	YES	PSR+SSRm(A/C)		Tindal	
TWR		YES	YES	PSR+SSRm(A/C)			
Townsville							
APP			YES	YES	PSR+ SSRm(S)+SSRm(A/C)		Townsville, Tabletop
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)			YES YES YES	YES YES YES	PSR + SSRmAC + SSRmAC+ADS-B PSR + SSRmAC + SSRmAC+ADS-B PSR + SSRmAC SSRmS+SSRmAC+SMR+AD	2	
Beijing TWR (ZBAD)			YES	YES	PSR+SSRmS+SSRmAC+SMR+ADS-B+MLAT+A-SMGCS	4	
Tianjin APP Tianjin TWR			YES YES	YES YES	PSR+SSRmS+SSRmAC+ADS-B SSRmAC SSRmS+SSRmAC+SMR+ADS-B+MLAT+A-SMGCS	2	
Shijiazhuang APP Shijiazhuang TWR			YES YES	YES YES	SSRmS+SSRmAC+ADS-B SSRmAC-SSRmS+SSRmAC+ADS-B		
Taiyuan ACC Taiyuan APP Taiyuan TWR			YES YES YES	YES YES YES	PSR + SSRmAC PSR+SSRmS+SSRmAC+ADS-B PSR+SSRmS+SSRmAC+ADS-B PSR + SSRmAC 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
Hohhot ACC Hohhot APP Hohhot TWR			YES YES YES	YES YES YES	SSRmAC +ADS-B SSRmAC+ADS-B SSRmAC +ADS-B		
Guangzhou ACC Guangzhou APP Guangzhou TWR			YES YES YES	YES YES YES	PSR+SSRmS+SSRmAC+ADS-B PSR+SSRmS+SSRmAC+ADS-B PSR+SSRmS+SSRmAC+SMR+ADS-B+A-SMGCS	2	
Shenzhen APP Shenzhen TWR			YES YES	YES YES	SSRmS+SSRmAC+ADS-B PSR +SSRmS+SSRmAC+ADS-B+SMR+A-SMGCS		
Zhuhai ACC Zhuhai APP Zhuhai TWR			YES YES YES	YES YES YES	PSR + SSRmS+ SSRmAC +ADS-B PSR + SSRmS+ SSRmAC +ADS-B PSR + SSRmS+ SSRmAC +ADS-B		
Sanya ACC Sanya APP Sanya TWR			YES YES YES	YES YES YES	PSR + SSRmS+ SSRmAC +ADS-B PSR + SSRmS+ SSRmAC +ADS-B PSR + SSRmS+ SSRmAC +ADS-B		
Haikou ACC Haikou APP Haikou TWR			YES YES YES	YES YES YES	PSR + SSRmS+ SSRmAC +ADS-B PSR + SSRmS+ SSRmAC +ADS-B PSR + SSRmS+ SSRmAC +ADS-B+SMR+MLAT		
Changsha ACC Changsha APP Changsha TWR			YES YES YES	YES YES YES	PSR +SSRmS+SSRmAC+ADS-B SSRmS+SSRmAC+ADS-B 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 Wuhan APP Wuhan TWR			YES YES YES	YES YES YES	PSR + SSRmS+ SSRmAC +ADS-B PSR + SSRmS+ SSRmAC +ADS-B PSR + SSRmS+ SSRmAC +ADS-B +SMR+MLAT+A-SMGCS	2	
Zhengzhou ACC Zhengzhou APP Zhengzhou TWR			YES YES YES	YES YES YES	PSR + SSRmS+ SSRmAC +ADS-B PSR + SSRmS+ SSRmAC +ADS-B PSR + SSRmS+ SSRmAC +ADS-B +SMR+MLAT+A-SMGCS	2	
Guilin ACC Guilin APP Guilin TWR			YES YES YES	YES YES YES	PSR + SSRmS+ SSRmAC +ADS-B PSR + SSRmS+ SSRmAC +ADS-B PSR + SSRmS+ SSRmAC +ADS-B +SMR+MLAT		
Nanning ACC Nanning TWR			YES YES	YES YES	SSRmS+SSRmAC+ADS-B SSRmAC+ADS-B		
Zhanjiang ACC Zhanjiang APP Zhanjiang TWR			YES YES YES	YES YES YES	PSR+SSRmS+SSRmAC+ADS-B PSR+SSRmS+SSRmAC+ADS-B PSR+SSRmS+SSRmAC+ADS-B		
Shantou ACC Shantou APP Shantou TWR			YES YES YES	YES YES YES	PSR SSRmS + SSRmAC +ADS-B PSR SSRmS + SSRmAC +ADS-B PSR SSRmS + SSRmAC +ADS-B		
Kunming ACC Kunming APP Kunming TWR			YES YES YES	YES YES YES	PSR +SSRmS + SSRmAC + AC ADS-B PSR +SSRmS + SSRmAC + AC ADS-B 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
Chengdu ACC			YES	YES	+ SMR+MLAT 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 Fuzhou TWR			YES YES	YES YES	PSR+SSRmS+ SSRmAC +ADS-B PSR+SSRmS+ SSRmAC +ADS-B		
Wenzou TWR			YES	YES	SSRmS+ SSRmAC +ADS-B		
Xiamen ACC Xiamen APP Xiamen TWR			YES YES YES	YES YES YES	PSR+ SSRmAC +ADS-B SSRmAC +ADS-B PSR+ SSRmAC +ADS-B+ SMR+MLAT+A-SMGCS	2	
Shenyang ACC Shenyang APP Shenyang TWR			YES YES YES	YES YES YES	PSR+ SSRmS +SSRmAC + ADS-B PSR+ SSRmS +SSRmAC + ADS-B PSR+ SSRmS +SSRmAC + ADS-B SMR+A-SMGCS	2	
Dalian ACC Dalian APP Dalian TWR			YES YES YES	YES YES YES	PSR+ SSRmS +SSRmAC + ADS-B PSR+ SSRmS +SSRmAC + ADS-B PSR+ SSRmS +SSRmAC + ADS-B SMR+A-SMGCS	2	
Harbin ACC Harbin APP Harbin TWR			YES YES YES	YES YES YES	PSR+ SSRmS +SSRmAC + ADS-B PSR+ SSRmS +SSRmAC + ADS-B PSR+ SSRmS +SSRmAC + ADS-B SMR+ MLAT+ A-SMGCS	2	
Xi'an ACC Xi'an APP Xi'an TWR			YES YES YES	YES YES YES	PSR+ SSRmS +SSRmAC + ADS-B PSR+ SSRmS +SSRmAC + ADS-B PSR+ SSRmS +SSRmAC + ADS-B SMR+ MLAT		
Lanzhou ACC Lanzhou APP			YES YES	YES YES	SSRmS+ SSRmAC+ AC+ ADS-B 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 Urumqi ACC Urumqi APP Urumqi TWR			YES YES YES YES	YES YES YES YES	SSRmS+ SSRmAC +ADS-B PSR+SSRmS +SSRmAC +AC ADS-B PSR+SSRmS+SSRmAC+ADS-B PSR+ SSRmS +SSRmAC +ADS-B+SMR+MLAT+A-SMGCS	2	
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					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
Tahiti TWR							
INDIA Chennai ACC Chennai APP Chennai TWR Delhi ACC Delhi APP Delhi TWR Kolkata ACC Kolkata APP Kolkata TWR Mumbai ACC Mumbai APP Mumbai TWR Bangalore APP Bangalore TWR Shamshabad ACC Shamshabad APP Shamshabad TWR					PSR + ADS-C PSR + ADS-C PSR + ADS-C PSR + ADS-C PSR + ADS-C PSR + ADS-C PSR + ADS-C PSR + ADS-C PSR + ADS-C PSR PSR PSR PSR PSR	MI MI A-SMGCS MI MI A-SMGCS MI MI A-SMGCS MI MI A-SMGCS MI MI 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 Medan ACC Aceh APP			YES	YES	PSR + SSRmS + ADS-B PSR + SSRmAC + ADS-B 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, PSR, MLAT + 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 Chubu TWR			Yes Yes		PSR + SSRmAC + SSRmS MLAT		SMR
Osaka APP Osaka TWR			Yes Yes		PSR + SSRmAC + SSRmS MLAT		SMR
Kansai APP Kansai TWR			Yes Yes		PSR + SSRmAC + SSRmS MLAT		SMR
Fukuoka ACC Fukuoka APP Fukuoka TWR			Yes Yes Yes	Yes	PSR + SSRmAC + SSRmS + WAM PSR + SSRmAC + SSRmS MLAT		SMR
Kobe ACC Naha ACC Naha APP Naha TWR			Yes Yes Yes	Yes	SSRmAC + SSRmS + WAM PSR + SSRmAC + SSRmS PSR + SSRmAC + SSRmS MLAT		SMR
Hakodate APP			Yes		PSR + SSRmAC		
Sendai APP			Yes		PSR + SSRmAC		
Tokyo ACC Tokyo APP Tokyo TWR			Yes Yes Yes	Yes	PSR + SSRmAC + SSRmS + WAM PSR + SSRmAC + SSRmS 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			Yes		PSR + SSRmAC		
Sakishima APP							
Ishigaki APP			Yes		PSR + SSRmAC		
Sapporo ACC			Yes	Yes	PSR + SSRmAC + SSRmS + WAM		
LAO PDR							
Vientiane ACC	S		Yes	Yes	SSRmAC + SSRmS + ADS-B		ADS-B for monitoring only
Vientiane APP	T		Yes	Yes	PSR-SSRmS		
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	A, D	Yes	Yes	Not applicable	ADS-B	Not applicable	ADS-B Tier 3 implemented, Tier 2 in progress
Tontouta APP	G						
NEW ZEALAND Christchurch 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 Karachi APP Karachi TWR Lahore ACC Lahore APP Lahore TWR Islamabad APP Islamabad TWR			 Yes Yes Yes	 Yes Yes No	 PSR + SSRmAC PSR + SSRmAC PSR + SSRmAC PSR + SSRmAC PSR + SSRmAC PSR + SSRmAC PSR + SSRmAC PSR + SSRmAC	 Nil Nil Nil	
PAPUA NEW GUINEA Jacksons APP Moresby ACC					 PSR + SSRmAC PSR + SSRmAC		
PHILIPPINES Manila ATM Center Manila ACC Manila APP Clark APP Mactan APP					 SSRmAC + SSRmS + ADS-B SSRmAC + SSRmS PSR + SSRmAC + SSRmS PSR + SSRmAC PSR + SSRmAC		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
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	2	SMR, A-SMGCS
Jeju TWR	T	No	No	No	PSR + SSRmAC + SSRmS + ADS-B + MLAT		
Jungwon APP	T	No	No	Yes	PSR + SSRmAC	3	SMR, A-SMGCS
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		
Seoul APP	T	No	Yes	Yes	PSR + SSRmAC		
Gimpo TWR	T	No	Yes	No	PSR + SSRmAC		
Gangneung APP	T	No	No	No	PSR + SSRmAC		
Yangyang TWR					PSR + SSRmAC		
Gimhae APP	T	No	No	Yes	PSR + SSRmAC		SMR
Gimhae TWR	T	No	No	No	PSR + SSRmAC		
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 Gwangju TWR Muan TWR	T T T	No No No	No No No	Yes No No	PSR + SSRmAC PSR + SSRmAC		
SINGAPORE Singapore ACC Singapore APP Singapore TWR	S T AD		Yes Yes Yes	Yes Yes Yes	PSR + SSRmS + ADS-B + ADS-C PSR + SSRmS+SSRmAC PSR+ADS-B+MLAT	2	
SRI LANKA Colombo ACC Colombo APP					SSRmAC + ADS-B + ADS-C PSR		ADS-C Trial
THAILAND Bangkok ACC Bangkok APP Suvarnabhumi TWR Don Mueang TWR Chiang Mai APP Chiang Mai TWR Hat Yai APP Hat Yai TWR Phuket APP Phuket TWR Suratthani APP	S T AD AD T AD T AD T AD T		YES YES YES YES YES YES YES YES YES YES YES	YES YES YES YES YES YES YES YES YES	PSR + SSRmAC + SSRmS PSR + SSRmAC + SSRmS SMR + MLAT + A-SMGCS SSRmAC SSRmS SSRmS SSRmS SSRmS SSRmS	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
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 Danang APP Hanoi ACC Tansan Nhat APP Tansan Nhat TWR					PSR + SSRmAC + ADS-B + ADS-C PSR + SSRmAC + SSRmS + ADS-B PSR + SSRmAC + SSRmS + ADS-B 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.

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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		

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 Perth	C		YES	YES	PSR+SSRmAC+SSRmS+ADS-B+A-SMGCS+SMR	2	Perth, Kalamunda, Eclipse Hill
TCU			YES	YES	PSR+SSRmAC+SSRmS	2	
APP			YES	YES	PSR+SSRmAC+SSRmS		
TWR Sydney	C		YES	YES	PSR+SSRmAC+SSRmS+A-SMGCS+SMR		2
TCU			YES	YES	PSR+SSRmS+SSRmAC+WAM+MLAT		
APP			YES	YES	PSR+SSRmS+SSRmAC+WAM+MLAT		
TWR Darwin	C		YES	YES	PSR+SSRmS+SSRmAC+A-SMGCS+WAM+MLAT+SMR	2	Darwin, Knuckeys Lagoon
APP			YES	YES	PSR+SSRmS+SSRmAC		
TWR			YES	YES	PSR+SSRmS+SSRmAC		
Hobart	D		YES	YES	WAM+ADS-B		Hobart
APP			YES	YES	WAM+ADS-B		
TWR			YES	YES	WAM+ADS-B		
Karratha	D		YES	YES	ADS-B		Karratha
APP			YES	YES	ADS-B		
TWR			YES	YES	ADS-B		
Alternate aerodromes	D						Alice Springs
Alice Springs							

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 TWR Avalon	D	Over aerodrome	YES YES	YES YES	ADS-B ADS-B		Gellibrand Hill, Mt Macedon
APP TWR Canberra	C		YES YES	YES YES	PSR+ SSRm(S)+SSRm(A/C) PSR+ SSRm(S)+SSRm(A/C)		Mt Majura, Mt Bobbara
APP TWR Coffs Harbour	D		YES YES	YES YES	PSR+ SSRm(S)+SSRm(A/C) PSR+ SSRm(S)+SSRm(A/C)		The Round Mountain, Point Lookout
APP TWR Kalgoorlie	G		YES YES YES	YES YES YES	SSRm(S)+SSRm(A/C)+ADS-B SSRm(S)+SSRm(A/C)+ADS-B -		Launceston
Launceston	D						
APP TWR Learmonth	G	Over aerodrome	YES	YES	WAM+ ADS-B		Learmonth
Port Hedland	G		YES	YES	WAM+ ADS-B ADS-B		
Rock Hampton	D						
APP TWR Tindal	C		YES YES	YES YES	SSRm(S)+SSRm(A/C) SSRm(S)+SSRm(A/C)		Mt Alma
APP TWR Townsville	C		YES YES	YES YES	PSR+SSRm(A/C) PSR+SSRm(A/C)		Tindal
APP			YES	YES	PSR+ SSRm(S)+SSRm(A/C)		Townsville, Tabletop

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 Other aerodromes			YES	YES	PSR+ SSRm(S)+SSRm(A/C)		
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		
BRUNEI DARUSALAM Brunei APP					PSR + SSRmAC		
CAMBODIA					SSRmAC		
CHINA Beijing ACC Beijing APP Beijing TWR (ZBAA)			YES YES YES	YES YES YES	PSR + SSRmS +SSRmAC+ADS-B PSR + SSRmS +SSRmAC+ADS-B PSR + SSRmAC SSRmS+SSRmAC+SMR+ AD-ADS-B	2	
Beijing TWR (ZBAD)			YES	YES	PSR+SSRmS+SSRmAC+SMR+ADS-B+MLAT+A-SMGCS	4	

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
Tianjin APP Tianjin TWR			YES YES	YES YES	PSR+SSRmS+SSRmAC+ADS-B SSRmAC SSRmS+SSRmAC+SMR+ADS-B+MLAT+A-SMGCS	2	
Shijiazhuang APP Shijiazhuang TWR			YES YES	YES YES	SSRmS+SSRmAC+ADS-B SSRmAC —SSRmS+SSRmAC+ADS-B		
Taiyuan ACC Taiyuan APP Taiyuan TWR			YES YES YES	YES YES YES	PSR+SSRmAC PSR+SSRmS+SSRmAC+ADS-B PSR+SSRmS+SSRmAC+ADS-B PSR+SSRmAC PSR+SSRmS+SSRmAC+ADS-B		
Hohhot ACC Hohhot APP Hohhot TWR			YES YES YES	YES YES YES	SSRmAC +ADS-B SSRmAC+ADS-B SSRmAC +ADS-B		
Guangzhou ACC Guangzhou APP Guangzhou TWR			YES YES YES	YES YES YES	PSR+SSRmS+SSRmAC+ADS-B PSR+SSRmS+SSRmAC+ADS-B PSR+SSRmS+SSRmAC+SMR+ADS-B+A-SMGCS	2	
Shenzhen APP Shenzhen TWR			YES YES	YES YES	SSRmS+SSRmAC+ADS-B PSR+SSRmS+SSRmAC +ADS-B+SMR+A-SMGCS		
Zhuhai 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
Zhuhai APP Zhuhai TWR			YES YES	YES YES	PSR + SSRmS+ SSRmAC +ADS-B PSR + SSRmS+ SSRmAC +ADS-B		
Sanya ACC Sanya APP Sanya TWR			YES YES YES	YES YES YES	PSR + SSRmS+ SSRmAC +ADS-B PSR + SSRmS+ SSRmAC +ADS-B PSR + SSRmS+ SSRmAC +ADS-B		
Haikou ACC Haikou APP Haikou TWR			YES YES YES	YES YES YES	PSR + SSRmS+ SSRmAC +ADS-B PSR + SSRmS+ SSRmAC +ADS-B PSR + SSRmS+ SSRmAC +ADS-B +SMR+MLAT		
Changsha ACC Changsha APP Changsha TWR			YES YES YES	YES YES YES	PSR + SSRmS+ SSRmAC +ADS-B SSRmS+SSRmAC+ADS-B PSR + SSRmS+ SSRmAC +ADS-B +SMR+MLAT+A-SMGCS		
Enshi TWR			YES	YES	SSRmAC		
Wuhan ACC Wuhan APP Wuhan TWR			YES YES YES	YES YES YES	PSR + SSRmS+ SSRmAC +ADS-B PSR + SSRmS+ SSRmAC +ADS-B PSR + SSRmS+ SSRmAC +ADS-B +SMR+MLAT+A-SMGCS	2	
Zhengzhou ACC Zhengzhou APP Zhengzhou TWR			YES YES YES	YES YES YES	PSR + SSRmS+ SSRmAC +ADS-B PSR + SSRmS+ SSRmAC +ADS-B PSR + SSRmS+ SSRmAC +ADS-B +SMR+MLAT+A-SMGCS	2	
Guilin 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
Guilin APP Guilin TWR			YES YES	YES YES	PSR + SSRmS+ SSRmAC +ADS-B PSR + SSRmS+ SSRmAC +ADS-B +SMR+MLAT		
Nanning ACC Nanning TWR			YES YES	YES YES	SSRmS+SSRmAC+ADS-B SSRmAC+ADS-B		
Zhanjiang ACC Zhanjiang APP Zhanjiang TWR			YES YES YES	YES YES YES	PSR+SSRmS+SSRmAC+ADS-B PSR+SSRmS+SSRmAC+ADS-B PSR+SSRmS+SSRmAC+ADS-B		
Shantou ACC Shantou APP Shantou TWR			YES YES YES	YES YES YES	PSR SSRmS + SSRmAC +ADS-B PSR SSRmS + SSRmAC +ADS-B 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 + 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 C +ADS-B+SMR+MLAT+A-SMGCS	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
Chengdu TWR (ZUTF)			YES	YES	PSR+SSRmS+SSRmAC+ADS-B+SMR+MLAT+A-SMGCS	2	
Guiyang ACC Guiyang APP Guiyang TWR			YES YES YES	YES YES YES	PSR + SSRmS+ SSRmAC +ADS-B PSR+SSRmS+SSRmAC+ADS-B PSR + SSRmS+ SSRmAC +ADS-B+SMR+MLAT+A-SMGCS	2	
Chongqing ACC Chongqing APP Chongqing TWR			YES YES YES	YES YES YES	PSR + SSRmS+ SSRmAC +ADS-B PSR + SSRmS+ SSRmAC +ADS-B PSR + SSRmS+ SSRmAC +ADS-B+SMR+MLAT+A-SMGCS	2	
Shanghai ACC Shanghai APP Shanghai TWR (ZSSS)			YES YES YES	YES YES YES	PSR + SSRmS+ SSRmAC +ADS-B PSR + SSRmS+ SSRmAC +ADS-B 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 Jinan APP Jinan TWR			YES YES YES	YES YES YES	SSRmS+ SSRmAC +ADS-B SSRmS+SSRmAC+ADS-B SSRmS+ SSRmAC +ADS-B		
Qingdao ACC Qingdao APP Qingdao TWR			YES YES YES	YES YES YES	SSRmS+ SSRmAC +ADS-B SSRmS+SSRmAC+ADS-B SSRmS+SSRmAC+ADS-B	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
Hefei ACC Hefei APP Hefei TWR			YES YES YES	YES YES YES	PSR +SSRmS+ SSRmAC +ADS-B PSR +SSRmS+ SSRmAC +ADS-B PSR +SSRmS+ SSRmAC +ADS-B	2	
Nanjing ACC Nanjing APP Nanjing TWR			YES YES YES	YES YES YES	PSR +SSRmS+ SSRmAC +ADS-B PSR +SSRmS+ SSRmAC +ADS-B PSR +SSRmS+ SSRmAC +ADS-B+SMR+A-SMGCS		
Lianyungang ACC Lianyungang APP Lianyungang TWR			YES YES YES	YES YES YES	SSRmS+ SSRmAC +ADS-B SSRmS+ SSRmAC +ADS-B SSRmS+ SSRmAC +ADS-B		
Xuzhou TWR			YES	YES	SSRmS+ SSRmAC +ADS-B		
Hangzhou ACC Hangzhou APP Hangzhou TWR			YES YES YES	YES YES YES	PSR+ SSRmS +SSRmAC + ADS-B PSR+ SSRmS +SSRmAC + ADS-B PSR+ SSRmS +SSRmAC + ADS-B+SMR+MLAT+A-SMGCS		
Nanchang ACC Nanchang APP Nanchang TWR			YES YES YES	YES YES YES	PSR +SSRmS+ SSRmAC +ADS-B PSR +SSRmS+ SSRmAC +ADS-B PSR +SSRmS+ SSRmAC +ADS-B		
Fuzhou ACC Fuzhou APP Fuzhou TWR			YES YES YES	YES YES YES	PSR +SSRmS+ SSRmAC +ADS-B PSR +SSRmS+ SSRmAC +ADS-B PSR +SSRmS+ SSRmAC +ADS-B		
Wenzou TWR			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
Xiamen ACC Xiamen APP Xiamen TWR			YES YES YES	YES YES YES	PSR+ SSRmAC +ADS-B SSRmAC +ADS-B PSR+ SSRmAC +ADS-B+ SMR+MLAT+A-SMGCS	2	
Shenyang ACC Shenyang APP Shenyang TWR			YES YES YES	YES YES YES	PSR+ SSRmS +SSRmAC + ADS-B PSR+ SSRmS +SSRmAC + ADS-B PSR+ SSRmS +SSRmAC + ADS-B SMR+A-SMGCS	2	
Dalian ACC Dalian APP Dalian TWR			YES YES YES	YES YES YES	PSR+ SSRmS +SSRmAC + ADS-B PSR+ SSRmS +SSRmAC + ADS-B PSR+ SSRmS +SSRmAC + ADS-B SMR+A-SMGCS	2	
Harbin ACC Harbin APP Harbin TWR			YES YES YES	YES YES YES	PSR+ SSRmS +SSRmAC + ADS-B PSR+ SSRmS +SSRmAC + ADS-B PSR+ SSRmS +SSRmAC + ADS-B SMR+ MLAT+ A-SMGCS	2	
Xi'an ACC Xi'an APP Xi'an TWR			YES YES YES	YES YES YES	PSR+ SSRmS +SSRmAC + ADS-B PSR+ SSRmS +SSRmAC + ADS-B PSR+ SSRmS +SSRmAC + ADS-B SMR+ MLAT		
Lanzhou ACC Lanzhou APP Lanzhou TWR			YES YES YES	YES YES YES	SSRmS+ SSRmAC+ AC + ADS-B SSRmS+SSRmAC+ADS-B 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
Urumqi ACC Urumqi APP Urumqi TWR			YES YES YES	YES YES YES	PSR+SSRmS +SSRmAC + AG ADS-B PSR+SSRmS+SSRmAC+ADS-B PSR+ SSRmS +SSRmAC +ADS-B+SMR+MLAT+A-SMGCS	2	
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							

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 ACC Tahiti APP Tahiti TWR					SSRmAC + ADS-B + ADS-C SSRmAC		
INDIA Chennai ACC Chennai APP Chennai TWR Delhi ACC Delhi APP Delhi TWR Kolkata ACC Kolkata APP Kolkata TWR Mumbai ACC Mumbai APP Mumbai TWR Bangalore APP Bangalore TWR Shamshabad ACC Shamshabad APP Shamshabad TWR					PSR + ADS-C PSR + ADS-C PSR + ADS-C PSR + ADS-C PSR + ADS-C PSR + ADS-C PSR + ADS-C PSR + ADS-C PSR + ADS-C PSR PSR PSR PSR PSR	MI MI A-SMGCS MI MI A-SMGCS MI MI A-SMGCS MI MI A-SMGCS MI MI MI MI MI	
INDONESIA							

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 ACC			YES	YES	PSR + SSRmS + ADS-B		ADS-B Trial A-SMGCS, MLAT, SMR
Jakarta APP			YES	YES	PSR + SSRmS + ADS-B		
Medan ACC			YES	YES	PSR + SSRmS + ADS-B PSR + SSRmS + 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 + SSRmS SSRmS + ADS-B		
Palembang APP			YES	YES	PSR + SSRmS SSRmS + ADS-B		
Ujung Pandang ACC			YES	YES	PSR + SSRmS SSRmS + ADS-B		ADS-C Trial A-SMGCS
Ujung Pandang APP			YES	YES	PSR + SSRmS SSRmS + ADS-B		
Banjarmasin APP			YES	YES	SSRmS SSRmS + ADS-B		
Balikpapan APP			YES	YES	PSR + SSRmS SSRmS + 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
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
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			Yes		PSR + SSRmAC + SSRmS		
Naha APP			Yes		PSR + SSRmAC + SSRmS		
Naha TWR			Yes		MLAT		SMR
Hakodate 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
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		
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		

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
Shimojishima APP Sakishima APP			Yes		PSR + SSRmAC		
Ishigaki APP			Yes		PSR + SSRmAC		
Sapporo ACC			Yes	Yes	PSR + SSRmAC + SSRmS +WAM		
LAO PDR							
Vientiane ACC	S		Yes	Yes	SSRmAC + SSRmS +ADS-B		ADS-B for monitoring only
Vientiane APP	T		Yes	Yes	PSR SSRmS		
MALAYSIA							
Langkawi APP					PSR + SSRmAC		
Kuala Lumpur ACC Lumpur APP					PSR + SSRmAC + SSRmS PSR + SSRmAC + ADS-C		
Johor Bharu APP					PSR + SSRmS		
Kota Bharu APP					PSR + SSRmS		
K. Kinabalu ACC K. Kinabalu APP					PSR + SSRmAC PSR + SSRmAC		
Kuching ACC Kuching 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
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		
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							

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
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 situational awareness using ADSB+MLAT
PAKISTAN							

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
Karachi ACC					PSR + SSRmAC		
Karachi APP Karachi TWR			Yes	Yes	PSR + SSRmAC PSR + SSRmAC	Nil	
Lahore ACC Lahore APP Lahore TWR			Yes	Yes	PSR + SSRmAC PSR + SSRmAC PSR + SSRmAC	Nil	
Islamabad APP Islamabad TWR			Yes	No	PSR + SSRmAC PSR + SSRmAC	Nil	
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 Manila APP					SSRmAC + SSRmS 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	2	SMR, A-SMGCS
Jeju TWR	T	No	No	No	PSR + SSRmAC + SSRmS + ADS-B + MLAT		
Jungwon APP	T	No	No	Yes	PSR + SSRmAC		
CheongjuTWR	T	No	No	No	PSR + SSRmAC		
Incheon ACC	S	No		Yes	PSR + SSRmAC + ADS-B	3	SMR, A-SMGCS
Incheon TWR	T	No	Yes	No	PSR + SSRmAC + SSRmS + ADS-B + MLAT		
Seoul APP	T	No	Yes	Yes	PSR + SSRmAC		
Gimpo TWR	T	No	Yes	No	PSR + SSRmAC		
Gangneung APP	T	No	No	No	PSR + SSRmAC		
Yangyang TWR					PSR + SSRmAC		
Gimhae APP	T	No	No	Yes	PSR + SSRmAC		SMR
Gimhae 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
Daegu APP Daegu TWR	T T	No No	No No	No No	PSR + SSRmAC PSR + SSRmAC		
Gwangju APP Gwangju TWR Muan TWR	T T T	No No No	No No No	Yes No No	PSR + SSRmAC PSR + SSRmAC		
SINGAPORE Singapore ACC Singapore APP Singapore TWR	S T AD		Yes Yes Yes	Yes Yes Yes	PSR + SSRmS + ADS-B + ADS-C PSR + SSRmS+SSRmAC PSR+ADS-B+MLAT	2	
SRI LANKA Colombo ACC Colombo APP					SSRmAC + ADS-B + ADS-C PSR		ADS-C Trial
THAILAND Bangkok ACC Bangkok APP Suvarnabhumi TWR Don Mueang TWR Chiang Mai APP Chiang Mai TWR Hat Yai APP Hat Yai TWR	S T AD AD T AD T AD		YES YES YES YES YES YES YES YES	YES YES YES YES YES YES YES YES	PSR + SSRmAC + SSRmS PSR + SSRmAC + SSRmS SMR + MLAT + A-SMGCS SSRmAC SSRmS SSRmS SSRmS SSRmS	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
Phuket APP Phuket TWR	T AD		YES YES	YES YES	SSRmS SSRmS		
Suratthani APP Suratthani TWR	T AD		YES YES	YES YES	SSRmS SSRmS		
Ubonratchathani APP Ubonratchathani TWR	T AD		YES YES	YES YES	SSRmS SSRmS		
Phitsanulok APP Phitsanulok TWR	T AD		YES YES	YES YES	PSR PSR		
Hua Hin APP Hua Hin TWR	T AD		YES YES	YES YES	PSR PSR		
U Taphao					SSRmAC		
TONGA					ADS-B		
UNITED STATES Alaska ACC	R, S		YES	YES	ADS-B + ADS-C + SSRmS + SSRmAC + PSR + WAM		This facility also provides limited approach control services to the Juneau aerodrome

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
Anchorage, Alaska APP	T		YES	YES	ADS-B + SSRmAC + PSR	2	Anchorage, Alaska APP
Anchorage, Alaska TWR	AD		YES	YES	ADS-B + MLAT + SMR		Anchorage, Alaska TWR
Fairbanks, Alaska APP	T		Yes	Yes	ADS-B + SSRmAC + PSR		Fairbanks, Alaska APP
Anchorage, Alaska APP	T		YES	YES	ADS-B + SSRmAC + PSR		Anchorage, Alaska APP
Hilo, Hawaii ACC Hilo, Hawaii APP Hilo, Hawaii TWR	AD				SSRmAC PSR	2	
Honolulu, Hawaii ACC	S		YES	YES	ADS-B + SSRmS + PSR		Honolulu ACC and APP are a single, integrated facility with one ATC automation system
Honolulu, Hawaii APP	T		YES	YES	ADS-B + SSRmS + PSR		APP provides services for Hilo, Kahului, Kona, and Lihue aerodromes
Honolulu, Hawaii TWR	AD		YES	YES	ADS-B + MLAT + SMR		
Kahului, Hawaii APP Kahului, Hawaii TWR	AD				PSR + SSRmAC		
Kokee, Hawaii ACC					PSR		
Lihue, Hawaii 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
Lihue, Hawaii TWR	AD				PSR + SSRmAC		
Mount Kaala, Hawaii ACC							
Pahoa, Hawaii ACC					SSRmAC		
Kunianiau, Hawaii ACC					SSRmAC		
Guam ACC	S		YES	YES	ADS-B + SSRmS + SSRmAC + PSR		Guam ACC and APP are a single, integrated facility with one ATC automation system
Mount Santa Rosa, Guam ACC					PSR + SSRmS		
Mount Santa Rosa, Guam APP					PSR + SSRmAC		
Mount Santa Rosa, Guam TWR							
Kona, Hawaii ACC	AD				SSRmAC		
Kona, Hawaii TWR							
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 Danang APP Hanoi ACC Tansan Nhat APP Tansan Nhat TWR					PSR + SSRmAC + ADS-B +ADS-C PSR + SSRmAC+ SSRmS + ADS-B PSR + SSRmAC + SSRmS + ADS-B PSR + SSRmAC + SSRmS + ADS-B		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 used 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, Paragraph 3.1.2.8.6 (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.*
