International Civil Aviation Organization

Fifth Meeting of the Asia/Pacific Regional Search and Rescue Working Group (APSARWG/5)

Video Teleconference, 09 – 11 June 2020

Agenda Item 4: Asia/Pacific and inter-regional SAR planning, coordination and cooperation

- *Regional Air Navigation Plan (RANP) Search and Rescue Regions (SRRs)*
- *SAR-related National Air Navigation Plans (NANPs)*

REGIONAL AIR NAVIGATION PLAN UPDATE

(Presented by the Secretariat)

SUMMARY

This paper presents an update on the electronic Air Navigation Plan (eANP) for the Asia/Pacific, which was intended to replace ICAO Doc. 9673. Meeting participants are invited to review the data affecting their administration and provide feedback to ICAO on the data's accuracy.

1. INTRODUCTION

1.1 The Asia/Pacific Regional Electronic Air Navigation Plan (eANP) Volume I and II (State letters Ref.: T 11/2.1 – AP034/16 and T 11/2.1 – AP051/16 referred), had adopted a common, new ANP template, which had been approved by the ICAO Council for use by all ICAO Regions. The ANP containing Volume I and II is currently at http://www.icao.int/APAC/Pages/APAC-eANP.aspx.

2. DISCUSSION

Background

2.1 The development of the Asia/Pacific Regional electronic Air Navigation Plan (eANP), which was intended to replace ICAO Doc. 9673 – *Asia and Pacific Regions Regional Air Navigation Plan*, had been discussed since 2017. The Proposal for Amendment (PfA) process for Flight Information Regions (FIRs) and Search and Rescue Regions (SRRs) was now the same process of approval in the ANP Volume I (by approval of the Council); thus the ability for States to establish their SRRs under Annex 12 had been amended as a two-stage process.

2.2 To facilitate the PfA process, ICAO had urged States to urgently review the FIR/SRR data of those FIRs and SRRs related to their administration that were not included in the draft eANP Table SAR I-1 and provide feedback to the Regional Office on the data's accuracy.

2.3 As Flight Information Regions (FIRs) were considerably more difficult to establish than SRRs with issues such as air navigation charges and the establishment of Special Use Airspace (SUA) being factors for States, the review of FIRs was being conducted first. In addition, many SRRs were of similar dimensions as their associated FIRs, so this would be an easier task if the FIR dimensions were already established. ICAO anticipates that the SRR Table will be completed by 2021, to be entered into the ANP by APANPIRG/32.

Flight Information and Search And Rescue Regions Review

2.4 **Figure 1** is a flow diagram detailing the verifications steps before entry into the ANP.

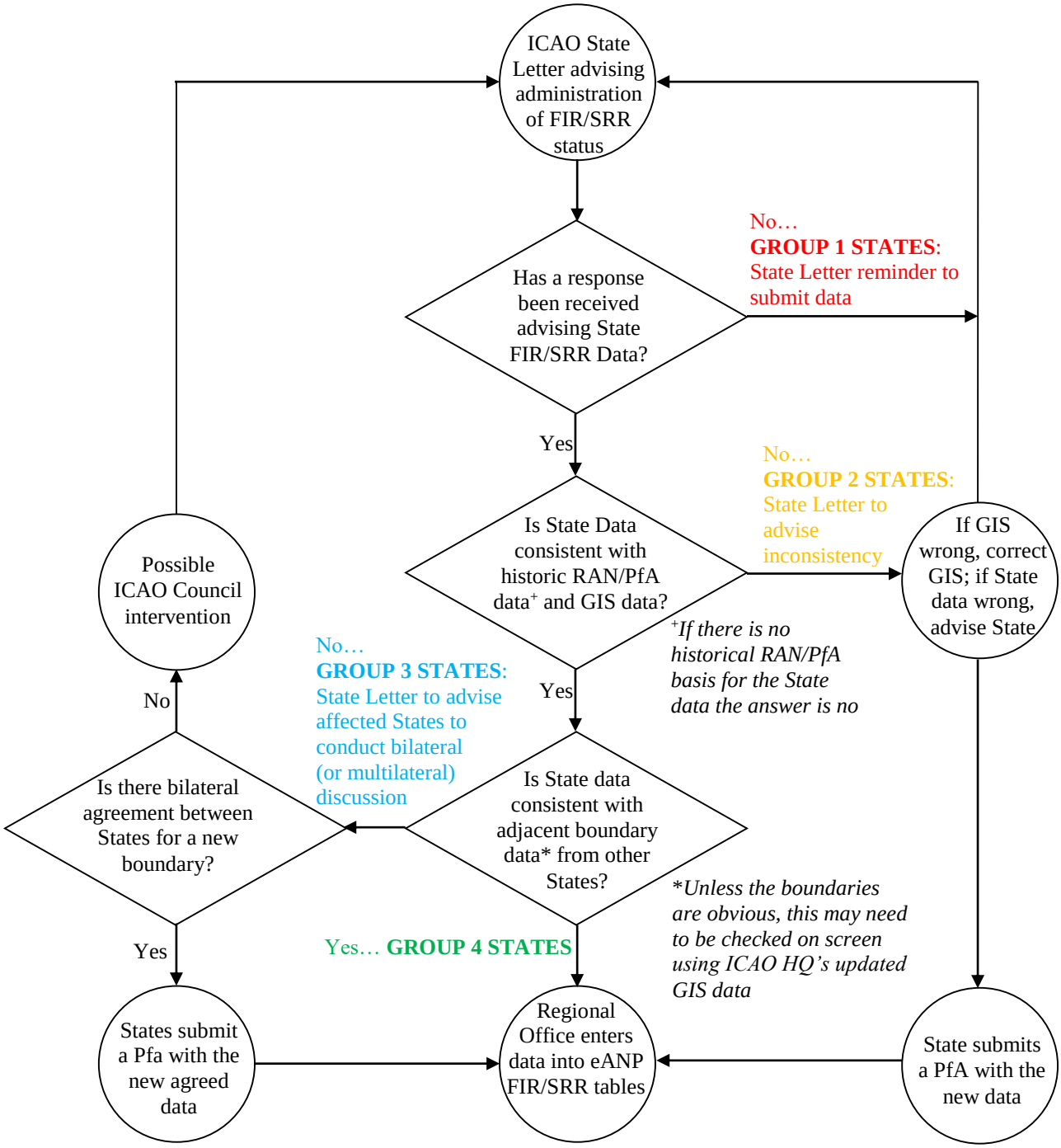


Figure 1: eANP FIR/SRR Review Process Flow Diagram

2.5 Four State Letters had been issued on this matter and after some delays. The overall feedback from the consultation by State Letters is summarized at **Attachment A**. In the first round, 11 of the 30 administrations responded (only 36.7%). After the second round, 14 administrations had responded (46.7%).

2.6 A third State Letter was circulated and nine more States responded (Democratic People's Republic of Korea, French Polynesia, Fiji, Malaysia, Myanmar, Nauru, Nepal, Pakistan and Sri Lanka). Although the overall response level for all State Letters was at 76.6 %, this was still unsatisfactory, given the importance of FIRs and SRRs.

2.7 A fourth State Letter ref: T3/3.6, T3/3.7, T3/3.8-AP105/18 (ATM) was circulated on 31 October 2018.

2.8 The draft eANP Table SAR I-1 is at **Attachment B**.

2.9 **Attachment C** provides details of the historical data available at the Regional Office for each amendment that was approved either by a Regional Air Navigation (RAN) meeting or a PfA to the Regional Air Navigation Plan.

2.10 Once published, States would need to file a PfA for any change to the Air Navigation Plan. Moreover, those States that did not have their FIRs published in 2020 should note that ICAO cannot confirm the legal status of these FIRs, until such time in the future when they have been approved.

2.11 When conducting initial analysis of State responses, it was noted that with regard to FIR boundaries, common problems were apparent:

- ICAO's Geographic Information Service (GIS) data showed overlapping descriptions;
- near geographical features such as coastlines, ICAO's GIS data was inaccurate (so States must provide more accurate, surveyed waypoints in these cases);
- some States appear to have made internal changes to FIR boundaries but it is unclear whether a formal PfA had been submitted for the changes, so the ICAO Council could approve this (there is no distinction in the approval process between internal and external changes, except that within sovereign airspace it is unlikely that another State will raise a concern); and
- some data is not available in the ICAO GIS.

2.12 As a result of recent efforts by the States concerned, the following PfAs concerning SRRs had been submitted and are pending circulation to HQ for approval:

- Afghanistan;
- Australia;
- Fiji;
- French Polynesia;
- Maldives;
- Mongolia;
- New Zealand;
- Pakistan;
- Philippines;
- Republic of Korea;
- Sri Lanka; and
- USA.

2.13 The current status of SRR verifications is indicated in **Figure 2**:

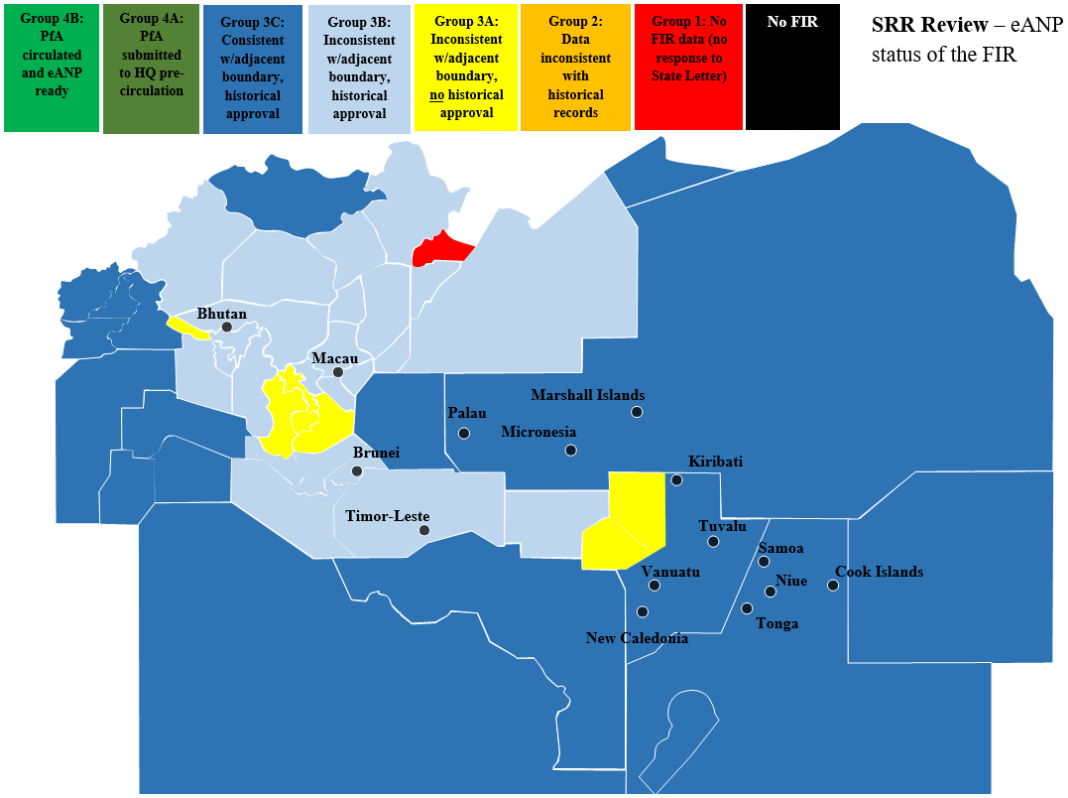


Figure 2: SRR Verification Status, as at June 2020

eANP Timetable

2.14 At present the ANP is in the form of pdfs on the website. The electronic ANP (eANP) with full hyperlink and html functionality was expected to be available at the end of 2021.

PfA Process

2.15 A Proposal for Amendment (PfA) Template is provided on the ICAO Asia/Pacific website at: http://www.icao.int/APAC/APAC%20eANP/ANP%20Amendment%20Template.doc.

2.16 States should note that PfAs for either the ANP or the Regional Supplementary Procedures (Document 7030) should include a list of all the States of Registry of any airspace or airport or facility user that may be affected by the items that were proposed for amendment.

RANP Provisions

2.17 APSAR/WG/5 should note that Section 3 of the eANP Volume II (**Attachment D**) now contains special provisions for the establishment and maintenance of a National Air Navigation Plan (NANP) that contains Basic Planning Elements (BPEs), which align with the eANP. These NANP requirements would include SAR planning as part of a whole-of-government approach, to ensure an integrated and harmonized approach, in accordance with the national priorities of State governments.

2.18 Moreover, the requirement for States to report their implementation progress and status of the applicable global and regional air navigation planning elements at least once each year (preferably prior to 01 April) to support the Asia/Pacific SAR Plan is also established in Vol. II. It should be noted that a 'robust' status compliance that is not subject to consideration as an APANPIRG Deficiency is one that is evaluated as achieving 90% or more implementation of the applicable elements.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper;

b) review the FIR/SRR data of those FIRs and SRRs related to their administration to be included in draft Table SAR I-1 (**Attachment B**) and provide feedback to ICAO on the data's accuracy; and

c) discuss any relevant matters as appropriate.

…….

FIR/SRR Review Consultation

STATE (in grey, no response)	FIR Name	Location Indicator	1st round response to SL ref.: T 3/10.1.3 – AP043/15 (ATM)	2nd round response to SL ref.: T 3/3.7 – AP153/15 (ATM)	3rd round response to SL ref.: T 3/3.7 – AP039/16 (ATM)	4th round response to SL ref.: T 3/3.6, T 3/3.7, T 3/3.8 – AP105/18 (ATM)	SRR Name	1st round response to SL ref.: T 3/3.7 – AP153/15 (ATM)	2nd round response to SL ref.: T 3/3.7 – AP039/16 (ATM)	3rd round response to SL ref.: T 3/3.6, T 3/3.7, T 3/3.8 – AP105/18 (ATM)	4th round response to SL ref: T 3/3.6, T 3/3.7, T 3/3.8 – AP128/19 (ATM)
Afghanistan	KABUL	OAKX	No	No	No	Yes	KABUL	No	No	Yes	
Australia	BRISBANE	YBBB	Yes	Yes	Yes	Yes	AUSTRALIA	Yes	Yes	Yes	Yes
Australia	MELBOURNE	YMMM	Yes	Yes	Yes	Yes	--	Yes	Yes	Yes	
Bangladesh	DHAKA	VGFR	Yes	No	Yes	Yes	DHAKA	No	Yes	Yes	
Cambodia	PHNOM PENH	VDPP	No	No	No	Yes	PHNOM PENH	No	No	Yes	
China	BEIJING	ZBPE	Yes	No	Yes	Yes	BEIJING	No	Yes	Yes	
China	GUANGZHOU	ZGZU	Yes	No	Yes	Yes	GUANGZHOU	No	Yes	Yes	
China	HONG KONG	VHHK	Yes	Yes	Yes	Yes	HONG KONG	Yes	Yes	Yes	
China	KUNMING	ZPKM	Yes	No	Yes	Yes	KUNMING	No	Yes	Yes	
China	LANZHOU	ZLHW	Yes	No	Yes	Yes	LANZHOU	No	Yes	Yes	
China	SANYA	ZJSA	Yes	No	Yes	Yes	SANYA	No	Yes	Yes	
China	SHANGHAI	ZYSH	Yes	No	Yes	Yes	SHANGHAI	No	Yes	Yes	
China	SHENYANG	ZYSH	Yes	No	Yes	Yes	SHENYANG	No	Yes	Yes	
China	URUMQI	ZWUQ	Yes	No	Yes	Yes	URUMQI	No	Yes	Yes	
China	WUHAN	ZHWH	Yes	No	Yes	Yes	WUHAN	No	Yes	Yes	
China	TAIBEI	RCAA	No	No	No	Yes	TAIBEI	No	No	Yes	
DPR Korea	PYONGYANG	ZKKP	No	No	Yes	No	PYONGYANG	No	Yes	No	
French Polynesia (France)	TAHITI	NTTT	No	No	Yes	Yes	TAHITI	No	Yes	Yes	
India	CHENNAI	VOMF	Yes	No	Yes	Yes	CHENNAI	No	Yes	Yes	
India	DELHI	VIDF	Yes	No	Yes	Yes	DELHI	No	Yes	Yes	
India	KOLKATA	VECF	Yes	No	Yes	Yes	KOLKATA	No	Yes	Yes	
India	MUMBAI	VABF	Yes	No	Yes	Yes	MUMBAI	No	Yes	Yes	
Indonesia	JAKARTA	WIIF	No	No	No	Yes	JAKARTA	No		Yes	
Indonesia	UJUNG PANDANG	WAAF	No	No	No	Yes	UJUNG PANDANG	No	No	Yes	
Indonesia	--	--	--	--	--	--	BALI	No	No	--	
Indonesia	--	--	--	--	--	--	BIAK	No	No	--	
Fiji	NADI	NFFF			Yes	Yes	NADI	No	Yes	Yes	
Japan	FUKUOKA	RJJJ	Yes	Yes	Yes	Yes	TOKYO	Yes	Yes	Yes	
Japan	--	--	--	--	--	--	NAHA	No	No	--	
Lao PDR	VIENTIANE	VLAO	No	No	No	Yes	VIENTIANE	No	No	Yes	

STATE (in grey, no response)	**FIR Name**	**Location Indicator**	**1st round response to SL ref.:** T 3/10.1.3 – AP043/15 (ATM)	**2nd round response to SL ref.:** T 3/3.7 – AP153/15 (ATM)	**3rd round response to SL ref.:** T 3/3.7 – AP039/16 (ATM)	**4th round response to SL ref.:** T 3/3.6, T 3/3.7, T 3/3.8 – AP105/18 (ATM)	**SRR Name**	**1st round response to SL ref.:** T 3/3.7 – AP153/15 (ATM)	**2nd round response to SL ref.:** T 3/3.7 – AP039/16 (ATM)	**3rd round response to SL ref.:** T 3/3.6, T 3/3.7, T 3/3.8 – AP105/18 (ATM)	**4th round response to SL ref:** T 3/3.6, T 3/3.7, T 3/3.8 – AP128/19 (ATM)
Malaysia	KOTA KINABALU	WBFC	No	No	Yes	Yes	KOTA KINABALU	No	No	Yes	
Malaysia	KUALA LUMPUR	WMFC	No	No	Yes	Yes	KUALA LUMPUR			Yes	
Maldives	MALE	VRMF	No	Yes	Yes	Yes	MALE	Yes	Yes	Yes	
Mongolia	ULAANBAATAR	ZMUB	No	No	No	Yes	ULAANBAATAR	No	No	Yes	
Myanmar	YANGON	VYYY	No	No	Yes	Yes	YANGON	No	No	Yes	
Nauru	NAURU	ANAU	No	No	Yes	No	NAURU	No	Yes	No	Yes
Nepal	KATHMANDU	VNSM	No	No	Yes	Yes	KATHMANDU	No	Yes	Yes	
New Zealand	AUCKLAND OCEANIC	NZZO	Yes	Yes	Yes	Yes	NEW ZEALAND	Yes	Yes	Yes	
New Zealand	NEW ZEALAND	NZZC	Yes	Yes	Yes	Yes				Yes	
Pakistan	KARACHI	OPKR	No	No	Yes	Yes	KARACHI	No	Yes	Yes	Yes
Pakistan	LAHORE	OPLR	No	No	Yes	Yes	LAHORE	No	Yes	Yes	Yes
Papua New Guinea	PORT MORESBY	AYPM	No	No	No	Yes	PORT MORESBY	No	No	Yes	
Philippines	MANILA	RPHI	No	Yes	Yes	Yes	MANILA	Yes	Yes	Yes	
Republic of Korea	INCHEON	RKRR	No	Yes	No	Yes	INCHEON	Yes	No	Yes	Yes
Singapore	SINGAPORE	WSJC	Yes	Yes	Yes	Yes	SINGAPORE	Yes	Yes	Yes	
Solomon Islands	HONIARA	AGGG	No	No	No	No	HONIARA			No	Yes
Sri Lanka	COLOMBO	VCCF	No	No	Yes	Yes	COLOMBO		Yes	Yes	
Thailand	BANGKOK	VTBB	Yes	No	Yes	Yes	BANGKOK	Yes		Yes	
United States of America	ANCHORAGE OCEANIC	PAZA	Yes	Yes	Yes	Yes	HONOLULU	Yes	Yes	Yes	Yes
United States of America	OAKLAND OCEANIC	KZAK	Yes	Yes	Yes	Yes	JUNEAU	Yes	Yes	Yes	Yes
United States of America	--	--	--	--	--	--	ELMENDORF	No	No	--	Yes
United States of America	--	--	--	--	--	--	SAN FRANCISCO	No	No	--	Yes
Viet Nam	HANOI	VVVV	Yes	No	No	Yes	HANOI	Yes	No	Yes	
Viet Nam	HO CHI MINH	VVTS	Yes	No	No	Yes	HO CHI MINH	Yes	No	Yes	

Updated: 02 June 2020

Follow up action:

S/No.	STATE	FIR	Remarks
01	Afghanistan	Kabul	PfA 19/25-ATM approved by HQ. Circulated to States on 17 March 2020.
02	Australia	Melbourne Brisbane	PfA 19/36-ATM (Melbourne) approved by HQ. Circulated to States on 12 March 2020 Brisbane FIR PfA submitted. Pending upload to HQ.
03	Bangladesh	Dhaka	PfA submitted to APRO. In consultation with India and Myanmar regarding change in FIR boundary.
04	Cambodia	Phnom Penh	PfA submitted to APRO. In consultation with Thailand and Viet Nam regarding change in FIR boundary.
05	China	Beijing, Guangzhou, Hong Kong, Kunming, Lanzhou, Sanya, Shanghai, Shenyang, Urumqi, Wuhan, Taibei	PfA 20/12-ATM (Hong Kong) and PfA 20/13-ATM (Sanya) approved by HQ. Circulated to States on 12 March 2020 PfA 20/14 (Wuhan) approved by HQ. Circulated to States on 6 Mar 2020. *Hong Kong FIR PfA is in midst of discussion between Hong Kong CAD and China and is subject to change. PfA 20/15-ATM (Beijing) and PfA 20/16-ATM (Lanzhou) circulated to HQ on 11 March 2020.
06	DPR Korea	Pyongyang	No response.
07	French Polynesia	Tahiti	PfA 19/10-ATM circulated to HQ on 10 Jun 2019. PfA on hold due to possible extension of FIR.
08	India	Chennai, Delhi, Mumbai Kolkata	PfA 19/33-ATM (Chennai) and PfA 19/34-ATM (Delhi) approved by HQ. Circulated to States on 12 March 2020. PfA 19/32-ATM (Mumbai) approved by HQ. Circulated to States on 01 May 2020. Kolkata PfA submitted to APRO. In coordination with Bangladesh and Bhutan.
09	Indonesia	Jakarta Ujung Pandang	PfA submitted to APRO on 26 March 2020. PfA forwarded to Australia, Malaysia and Singapore for comments.
10	Fiji	Nadi	PfA 19/11-ATM approved by HQ. Circulated to States on 12 March 2020
11	Japan	Fukuoka	PfA 19/35-ATM circulated to HQ. To be on hold due to discrepancies with Russia/Khabarovsk FIR.
12	Lao PDR	Vientiane	Responded. Coordination with Viet Nam required.

S/No.	STATE	FIR	Remarks
13	Malaysia	Kuala Lumpur Kota Kinabalu	Responded. Coordination with Indonesia required.
14	Maldives	Male	PfA 19/09-ATM approved by HQ. Circulated to States on 17 March 2020.
15	Mongolia	Ulaanbaatar	PfA 19/21-ATM approved by HQ. Circulated to States on 17 March 2020.
16	Myanmar	Yangon	PfA submitted to APRO. Consultation with Thailand and Bangladesh required.
17	Nauru	Nauru	Responded. Coordination in progress.
18	Nepal	Kathmandu	PfA submitted to APRO. Consultation with China required.
19	New Zealand	New Zealand Auckland Oceanic	PfA 19/26-ATM (New Zealand), 19/27-ATM (Auckland Oceanic) approved by HQ. Circulated to APAC States on 29 Aug 2019.
20	Pakistan	Karachi Lahore	PfA 19/15-ATM (Lahore FIR) and 19/17-ATM (Karachi FIR) approved by HQ. Circulated to States on 12 March 2020
21	Papua New Guinea	Port Moresby	PfA submitted to APRO on 31 March 2020. Pending upload to HQ.
22	Philippines	Manila	PfA 19/12-ATM approved by HQ. Circulated to States on 12 March 2020.
23	Republic of Korea	Incheon	PfA 19/07-ATM circulated to HQ on 19 Apr 2019.
24	Singapore	Singapore	Responded. Awaiting PfA for center of Singapore.
25	Solomon Islands	Honiara	Data submitted to APRO on 27 March 2020. Pending upload to HQ.
26	Sri Lanka	Colombo	PfA 19/31 ATM approved by HQ. Circulated to States on 12 March 2020.
27	Thailand	Bangkok	Draft PfA submitted to APRO on 24 March 2020. Coordination with Cambodia and Viet Nam required.
28	USA	Oakland Oceanic Anchorage Oceanic	PfA 19/29-ATM (Anchorage Oceanic) and 19/30-ATM (Oakland Oceanic) approved HQ. Circulated to States on 12 March 2020.
29	Viet Nam	Ha Noi Ho Chi Minh	PfA submitted to APRO. Pending review of coordinates.

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

SRR	Lateral limits coordinates	Remarks
1	2	3
Kabul SRR (Kabul FIR)	N 30 00 00, E 066 19 00 N 37 12, E 67 47 00; following the national boundary to N 30 00 00, E 066 19 00 N 37 12, E 67 47 00.	

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Australia SRR (Brisbane and Melbourne FIRs)	S 06 00 00, E 075 00 00; S 02 00 00, E 078 00 00; S 02 00 00, E 092 00 00; S 12 00 00, E 107 00 00; S 12 00 00, E 123 20 00; S 09 20 00, E 126 50 00; S 07 00 00, E 135 00 00; S 09 50 00, E 139 40 00; S 09 50 00, E 141 00 00; S 09 37 00, E 141 01 00; S 09 16 00, E 142 03 00; then along the Australian EEA boundary clarify? S 09 19 00, E 142 48 00; S 09 08 00, E 143 53 00; S 09 24 00, E 144 14 00; S 09 57 00, E 144 05 00; S 10 05 00, E 143 59 00; S 10 09 00, E 143 57 00; S 10 18 00, E 143 55 00; S 10 23 00, E 143 55 00; S 10 27 00, E 143 54 00; S 10 31 00, E 143 55 00; S 10 35 00, E 143 56 00; S 10 47 00, E 144 00 00; S 11 02 00, E 144 03 00; S 11 07 00, E 144 04 00; S 11 11 00, E 144 04 00; S 11 14 00, E 144 04 00; S 11 15 00, E 144 03 00; S 11 30 00, E 144 02 00; S 11 43 00, E 144 04 00; S 12 00 00, E 144 00 00; S 12 00 00, E 155 00 00; S 14 00 00, E 155 00 00; S 14 00 00, E 161 15 00; S 17 40 00, E 163 00 00; S 90 00 00, E 163 00 00; S 90 00 00, E 075 00 00; S 06 00 00, E 075 00 00.	

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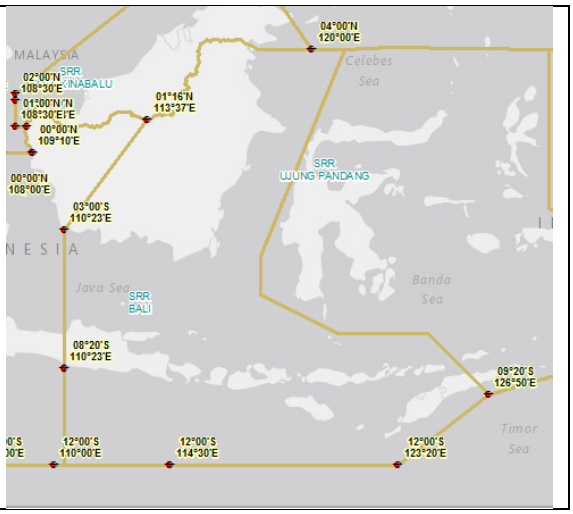
Bali SRR (Ujung Pandang FIR – Bali SRR data not aligned)	No information on record, not all coordinates available on GIS	

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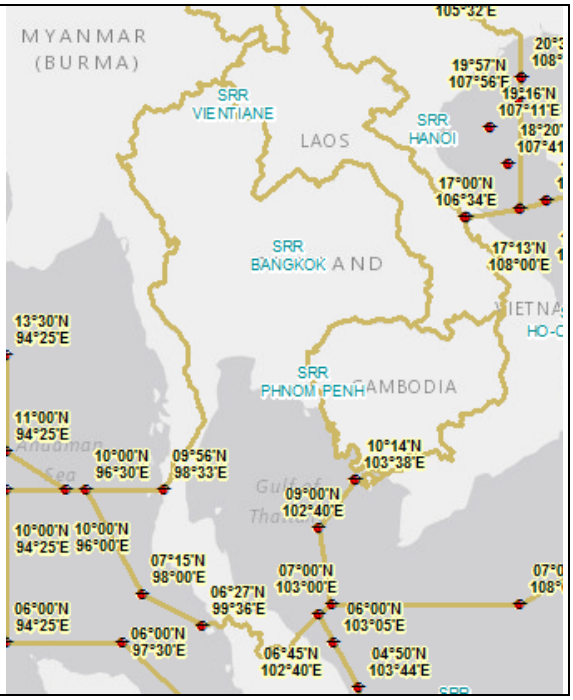
Bangkok SRR (Bangkok FIR-SRR data not aligned)	N 11 37 00, E 102 55 00; N 10 00 00, E 102 15 00; N 09 30 00, E 103 45 00; N 07 00 00, E 103 00 00; N 06 15 00, E 102 15 00; N 10 00 00, E 096 30 00; N 07 15 00, E 098 00 00; N 06 30 00, E 099 30 00; N 11 37 00, E 102 55 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

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Beijing SRR (Beijing FIR-SRR data not aligned)	N 45 25 00, E 115 19 00; N 43 15 00, E 117 31 00; N 39 54 00, E 119 21 00; N 39 30 00, E 119 52 00; N 38 15 00, E 120 00 00; N 37 29 00, E 117 30 00; N 36 32 00, E 115 18 00; N 36 21 00, E 114 55 00; N 36 06 00, E 114 21 00; N 34 54 00, E 112 47 00; N 34 00 00, E 110 29 00; N 34 32 00, E 110 15 00; N 35 32 00, E 110 18 00; N 37 28 00, E 110 44 00; N 38 22 00, E 110 36 00; N 38 44 00, E 109 41 00; N 40 20 00, E 107 01 00; N 40 43 00, E 105 55 00; N 41 44 00, E 105 13 00; N 45 25 00, E 115 19 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

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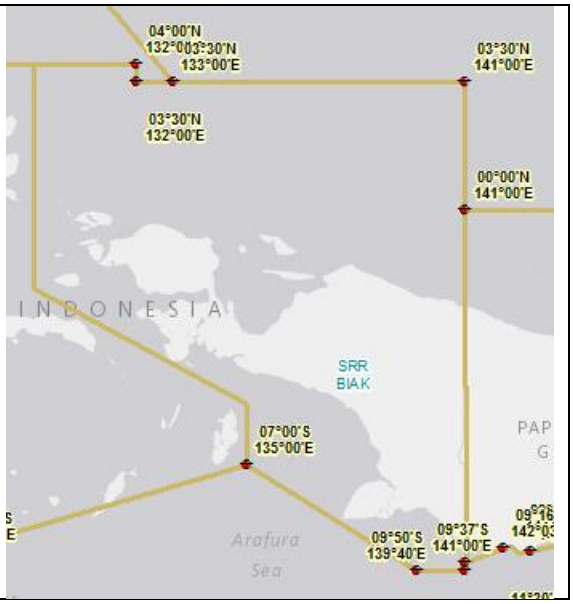
Biak SRR (Ujung Pandang FIR-SRR data not aligned)	No information on record, not all coordinates available on GIS	

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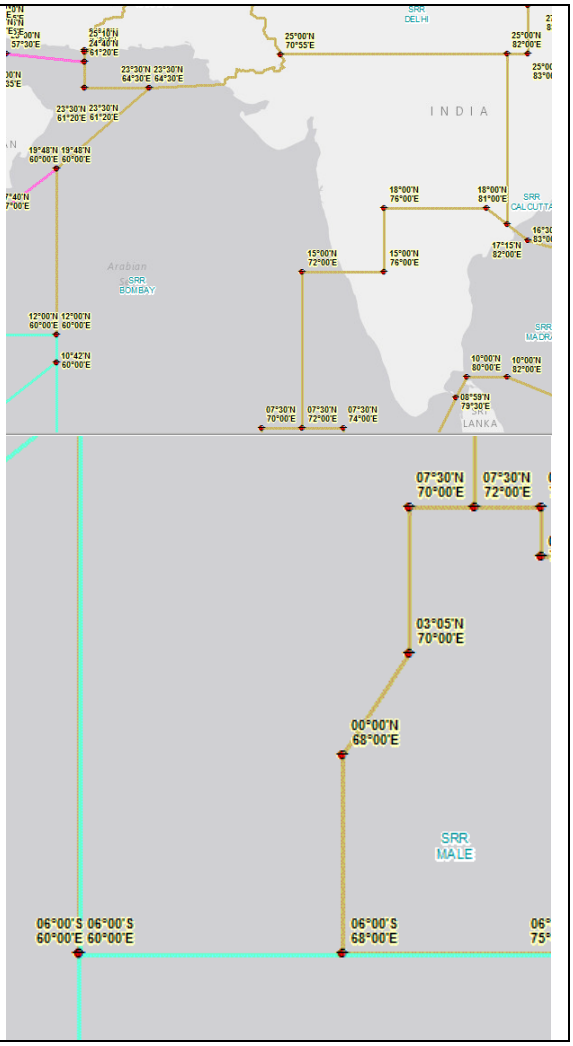
Bombay SRR (Mumbai FIR-Bombay SRR data not aligned)	S 06 00 00, E 060 00 00; N 10 42 00, E 060 00 00; N 12 00 00, E 060 00 00; N 19 48 00, E 060 00 00; N 23 30 00, E 064 30 00; N 25 00 00, E 070 55 00; N 25 00 00, E 082 00 00; N 17 15 00, E 082 00 00; N 18 00 00, E 081 00 00; N 18 00 00, E 076 00 00; N 15 00 00, E 076 00 00; N 15 00 00, E 072 00 00; N 07 30 00, E 072 00 00; N 07 30 00, E 070 00 00; N 03 05 00, E 070 00 00; S 06 00 00, E 068 00 00; S 06 00 00, E 060 00 00.	

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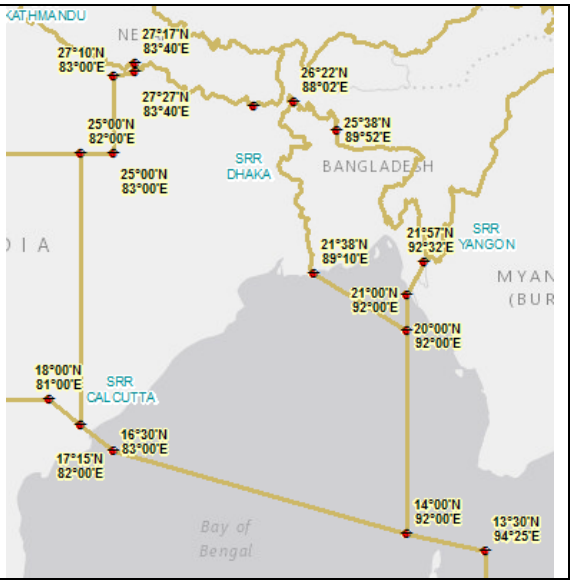
Calcutta SRR (Kolkata FIR-Calcutta SRR data not aligned)	N 25 38 00, E 089 52 00; N 26 22 00, E 088 02 00; N 21 38 00, E 089 10 00; N 20 00 00, E 092 00 00; N 14 00 00, E 092 00 00; N 16 30 00, E 083 00 00; N 17 15 00, E 082 00 00; N 25 00 00, E 082 00 00; N 25 00 00, E 083 00 00; N 27 10 00, E 083 00 00; N 27 27 00, E 083 40 00; N 27 17 00, E 083 40 00; N 25 38 00, E 089 52 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

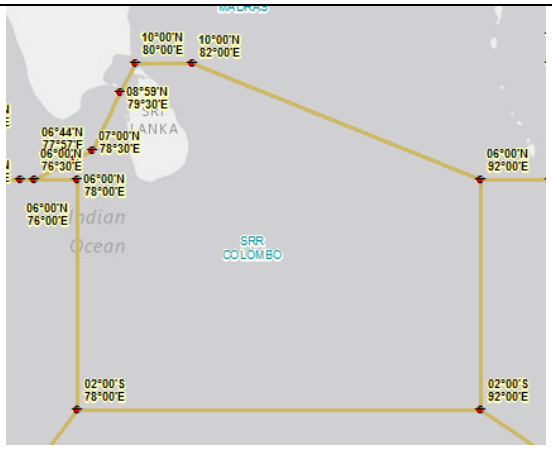
Colombo SRR (Colombo FIR-SRR data not aligned)	N 10 00 00, E 080 00 00; N 10 00 00, E 082 00 00; N 06 00 00, E 092 00 00; S 02 00 00, E 092 00 00; S 02 00 00, E 078 00 00; N 06 00 00, E 078 00 00; N 06 00 00 E 076 30 00; N 07 00 00 E 078 30 00; N 10 00 00, E 080 00 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

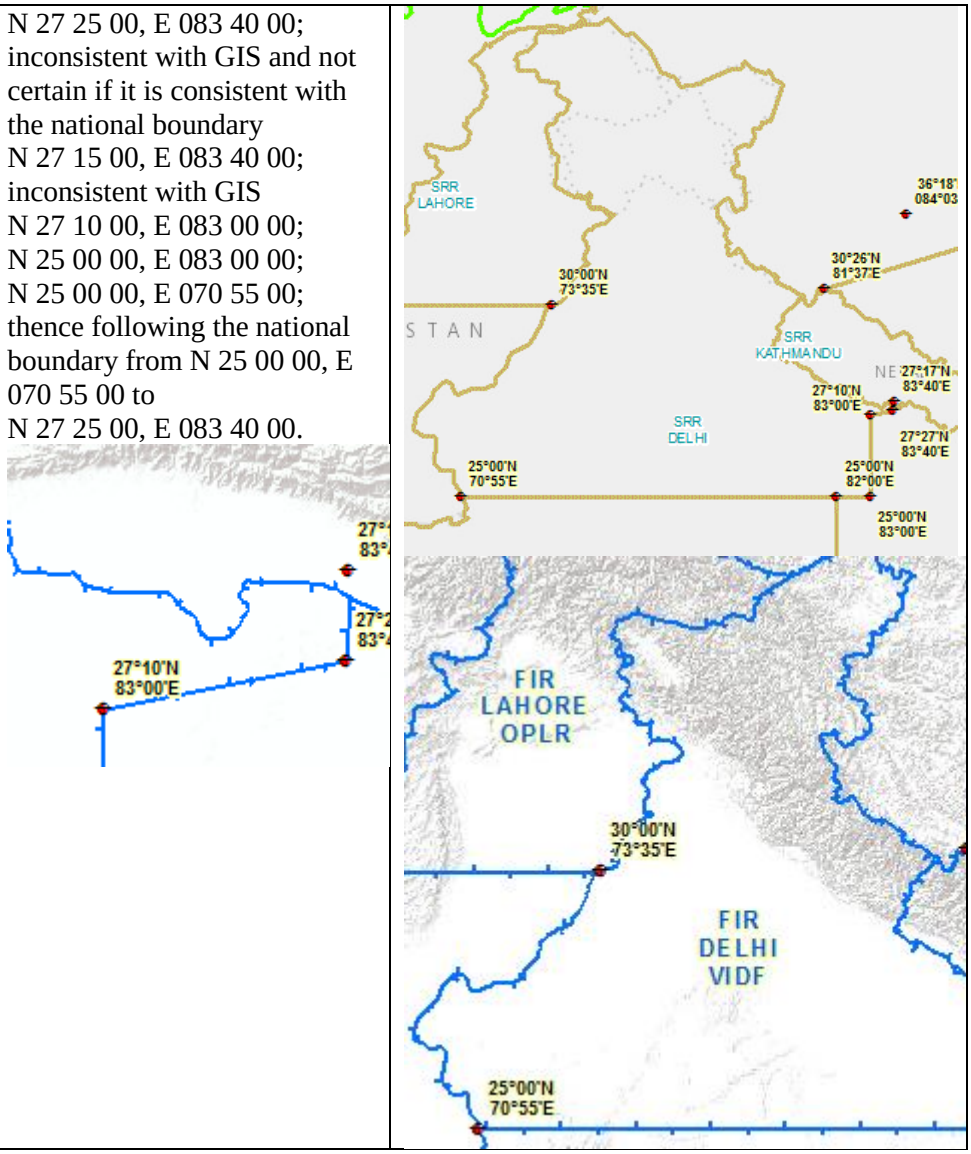
Delhi SRR (Delhi FIR)	N 27 25 00, E 083 40 00; inconsistent with GIS and not certain if it is consistent with the national boundary N 27 15 00, E 083 40 00; inconsistent with GIS N 27 10 00, E 083 00 00; N 25 00 00, E 083 00 00; N 25 00 00, E 070 55 00; thence following the national boundary from N 25 00 00, E 070 55 00 to N 27 25 00, E 083 40 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

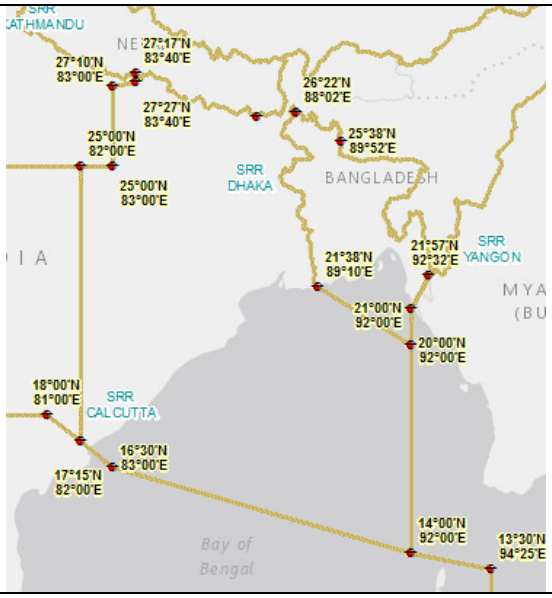
Dhaka SRR (Dhaka FIR-SRR data not aligned)	N 21 00 00, E 092 00 00; N 21 38 00, E 089 10 00; thence following the national boundary from N 21 38 00, E 089 10 00 to N 22 09 00, E 092 37 00; thence from N 22 09 00, E 092 37 00 to N 21 00 00, E 092 00 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

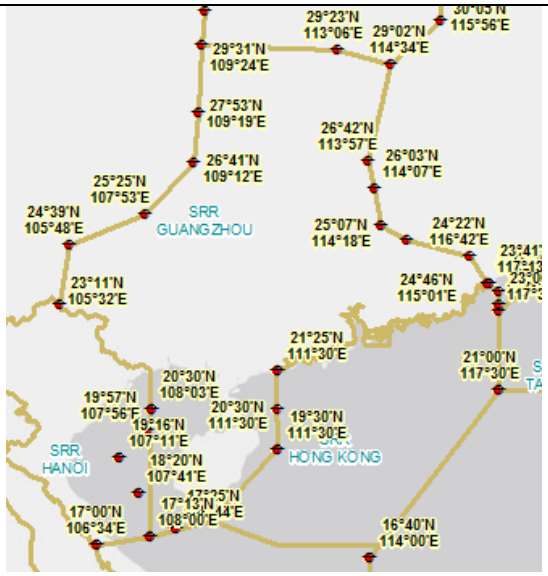
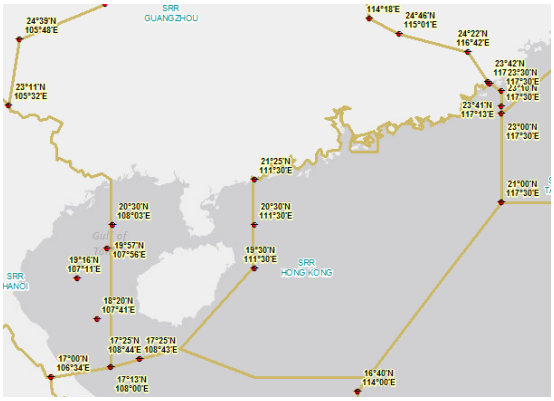
Guangzhou SRR (Guangzhou FIR-SRR data not aligned)	N 21 25 00, E 111 30 00; N 20 30 00, E 111 30 00; N 20 30 00, E 108 03 00; thence following the national boundary to N 23 11 00, E 105 32 00; N 24 39 00, E 105 48 00; N 25 25 00, E 107 53 00; N 26 41 00, E 109 12 00; N 27 53 00, E 109 19 00; N 29 31 00, E 109 24 00; N 29 23 00, E 113 06 00; N 29 02 00, E 114 34 00; N 26 42 00, E 113 57 00; N 26 03 00, E 114 07 00; N 25 07 00, E 114 18 00; N 24 46 00, E 115 01 00; N 24 22 00, E 116 42 00; N 23 42 00, E 117 11 00; N 23 41 00, E 117 13 00; thence following the national boundary to N 20 30 00, E 108 03 00; N 20 30 00, E 111 30 00; N 19 30 00, E 111 30 00; N 16 40 00, E 114 00 00; N 14 30 00, E 114 00 00; N 14 30 00, E 112 00 00; N 17 25 00, E 108 43 00; N 18 20 00, E 107 41 00; N 19 16 00, E 107 11 00; N 19 57 00, E 107 56 00; N 21 25 00, E 111 30 00.	 

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

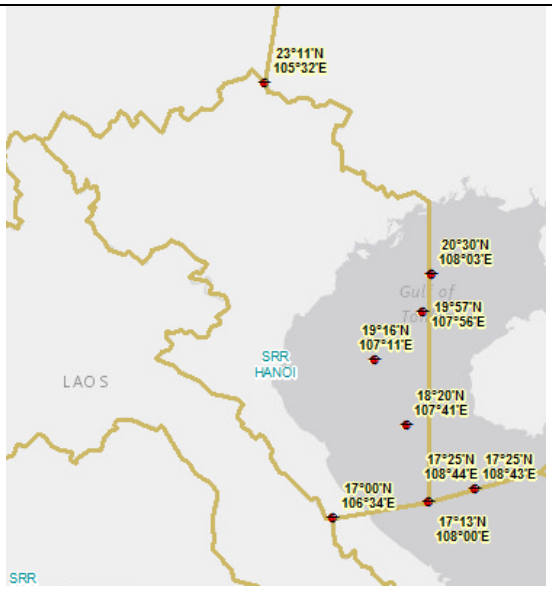
Hanoi SRR (Hanoi FIR-SRR data not aligned)	N 20 30 00, E 108 03 00; N 19 57 00, E 107 56 00; N 19 16 00, E 107 11 00; N 18 20 00, E 107 41 00; N 17 25 00, E 108 43 00; N 17 13 00, E 108 00 00; N 17 00 00, E 106 34 00; thence following the national boundary to N 23 11 00, E 105 32 00; thence following the national boundary to N 20 30 00, E 108 03 00.	 

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

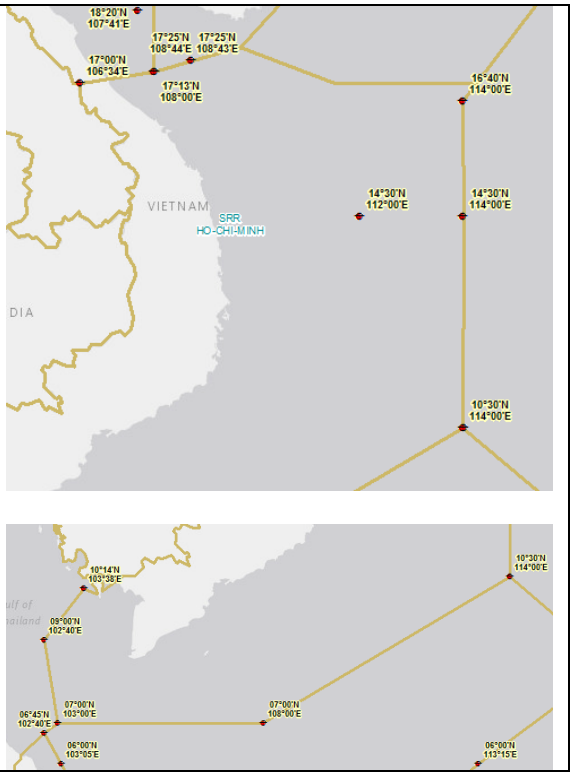
Ho Chi Minh SRR (Ho Chi Minh FIR-SRR data not aligned)	N 09 00 00, E 102 40 00; N 10 14 00, E 103 38 00; thence following the national boundary to N 17 00 00, E 106 34 00; N 17 13 00, E 108 00 00; N 17 25 00, E 108 43 00; N 14 30 00, E 112 00 00; N 14 30 00, E 114 00 00; N 10 30 00, E 114 00 00; N 07 00 00, E 108 00 00; N 07 00 00, E 103 00 00; N 09 00 00, E 102 40 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

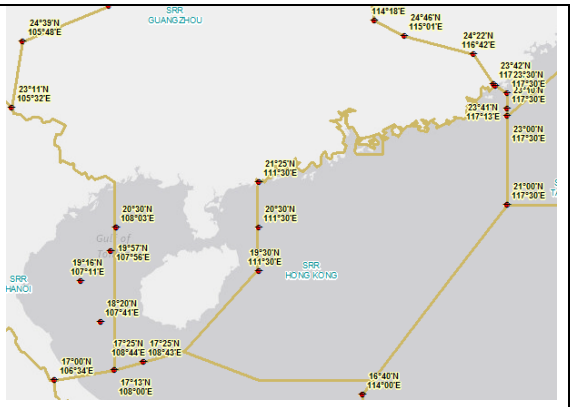
Hong Kong SRR (Hong Kong FIR-SRR data not aligned)	N 23 40 00, E 117 30 00; N 21 00 00, E 117 30 00; N 16 40 00, E 114 00 00; N 19 30 00, E 111 30 00; N 21 25 00, E 111 30 00; thence following the Special Administrative Region boundary to 3NM off-shore and the northern boundary of Macao and the Hong Kong Special Administrative Region to N 23 40 00, E 117 30 00	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

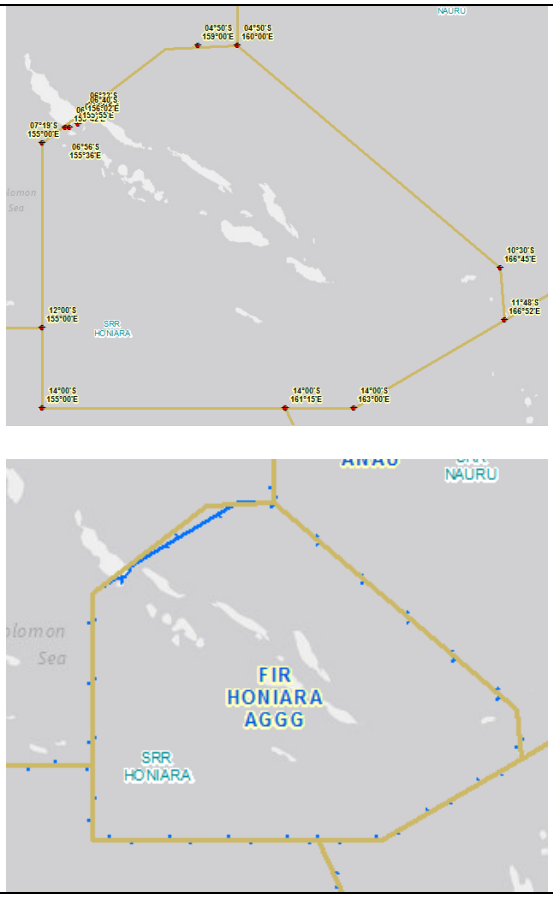
Honiara SRR (Honiara FIR-SRR not aligned)	S 10 30 00, E 166 45 00; S 11 48 00, E 166 52 00; S 14 00 00, E 163 00 00; S 14 00 00, E 161 15 00; S 14 00 00, E 155 00 00; S 12 00 00, E 155 00 00; S 07 19 00, E 155 00 00; S 06 56 00, E 155 36 00; S 06 56 00, E 155 42 00; S 06 51 00, E 155 55 00; S 06 40 00, E 156 02 00; E 06 33 00, E 156 02 00; S 10 30 00, E 166 45 00; S 10 30 00, E 166 45 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

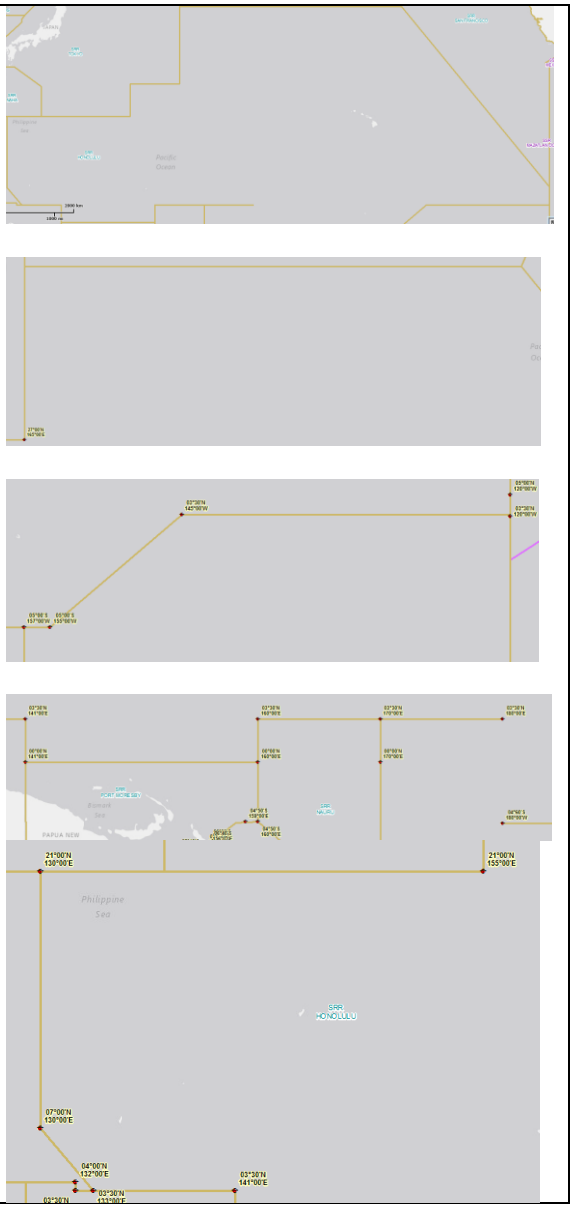
Honolulu SRR (Oakland Oceanic FIR – Honolulu SRR not aligned)	N 40 00 00, E 165 00 00; N 27 00 00, E 165 00 00; N 27 00 00, E 155 00 00; N 21 00 00, E 155 00 00; N 21 00 00, E 137 00 00; N 21 00 00, E 130 00 00; N 07 00 00, E 130 00 00; N 04 01 24, E 132 32 58; N 04 01 24, E 132 32 58; N 03 30 00, E 133 00 00; N 03 30 00, E 141 00 00; N/S 00 00 00, E 141 00 00; N/S 00 00 00, E 160 00 00; ~~N 03 30 00, E 160 00 00;~~ N 03 30 00, E 170 00 00; N 03 30 00, W/E 180 00 00; S 05 00 00, W/E 180 00 00; S 05 00 00, W 157 00 00; S 05 00 00, W 155 00 00; N 03 30 00, W 145 00 00; N 03 30 00, W 120 00 00; N 40 00 00, E 165 00 00. N 21 00 00; E 137 00 00 N 21 00 00; E 130 00 00 N/S 00 00 00; E 141 00 00 N/S 00 00 00; E 160 00 00 N 03 30 00; E 170 00 00 S 05 00 00; W/E 180 00 00 S 05 00 00; W 157 00 00 Green based on latest info provided but does not align with the previous information.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

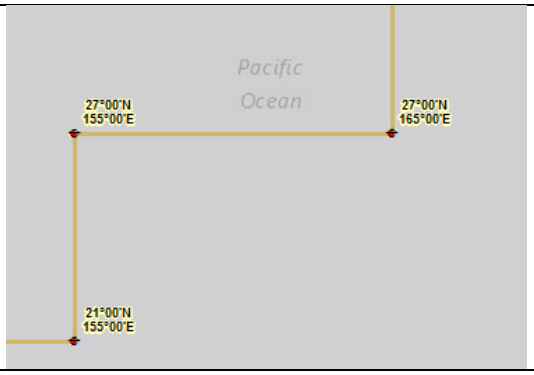
		

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

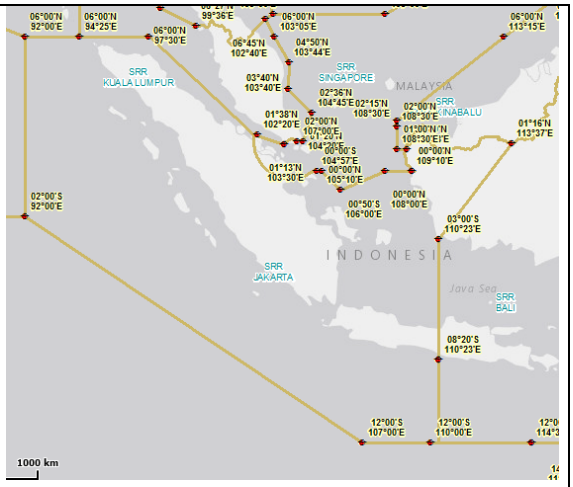
Jakarta SRR (Jakarta FIR)	N 01 16 00, E 113 37 00; S 03 00 00, E 110 23 00; S 08 20 00, E 110 23 00; S 12 00 00, E 114 30 00; ~~S 12 00 00, E 110 00 00~~; superfluous S 12 00 00, E 107 00 00; S 02 00 00, E 092 00 00; N 06 00 00, E 092 00 00; ~~N 06 00 00, E 094 25 00;~~ superfluous N 06 00 00, E 097 30 00; ~~N 01 38 00, E 102 20 00;~~ coordinate is inaccurate, should be approx N 01 38 49, E 102 09 54; the arc of a circle of 100 NM centred on Singapore (coordinates?), anti-clockwise from approx N 01 38 49, E 102 09 54 to approx N/S 00 00 00, E 104 46; N/S 00 00 00, E 105 10 00; S 00 50 00, E 106 00 00; N/S 00 00 00, E 108 00 00; missing coordinate N/S 00 00 00, E 109 10 00; missing coordinate (need to check if it is on the coast); following the coast and the national boundary from N/S 00 00 00, E 109 10 00 to ~~N 01 00 00, E 108 58 00;~~ superfluous N 01 16 00, E 113 37 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

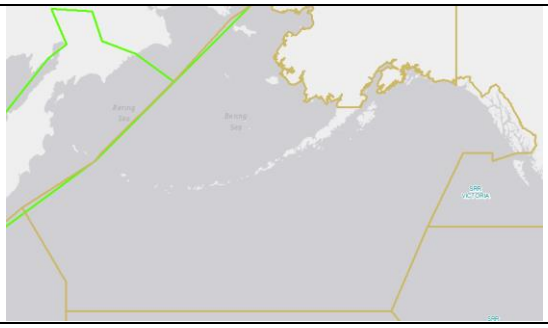
Juneau SRR Anchorage Oceanic FIR-Juneau SRR not aligned	N 50 05 00, E 159 00 00; N 43 00 00, E 165 00 00; N 40 00 00, E 165 00 00; N 50 05 00, E 159 00 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

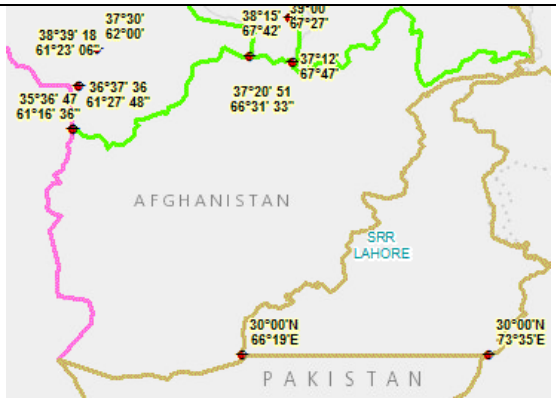
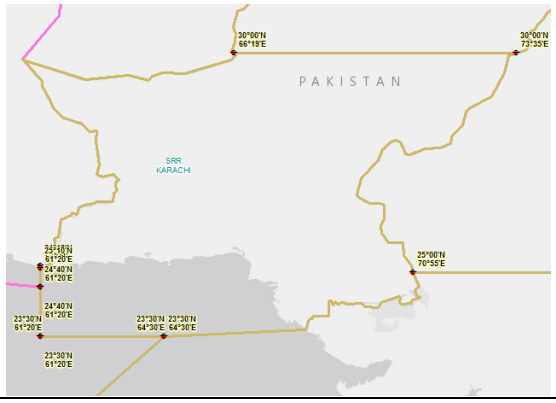
Kabul SRR (Kabul FIR)	~~N 30 00 00, E 066 19 00~~ N 37 12, E 67 47 00; following the national boundary to ~~N 30 00 00, E 066 19 00~~ N 37 12, E 67 47 00.	 

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

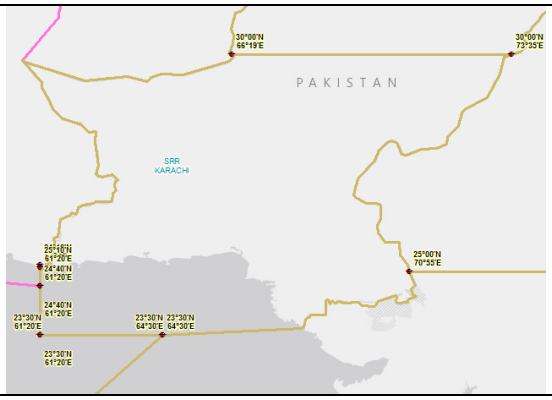
Karachi SRR (Karachi FIR-SRR data not aligned)	N 23 30 00, E 061 20 00; N 24 40 00, E 061 20 00; N 25 10 00, E 061 20 00; N 30 00 00, E 066 19 00; N 30 00 00, E 073 35 00; N 25 00 00, E 070 55 00; N 23 30 00, E 064 30 00; N 23 30 00, E 061 20 00. Check this – there should be mention of a national boundary	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

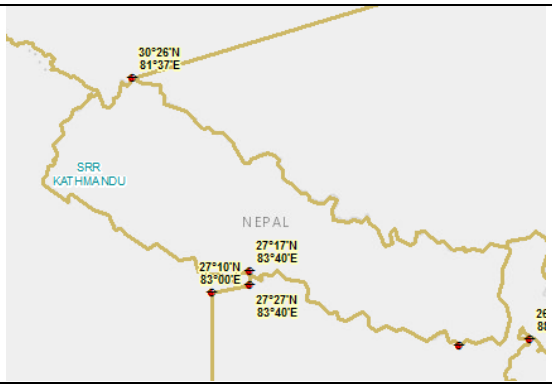
Kathmandu SRR (Kathmandu FIR)	N 30 26 00, E 081 37 00; following the national boundary from N 30 26 00, E 081 37 00 to ~~N 27 17 00, E 083 40 00; N 30 26 00, E 081 37 00~~ N 30 26 00, E 081 37 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

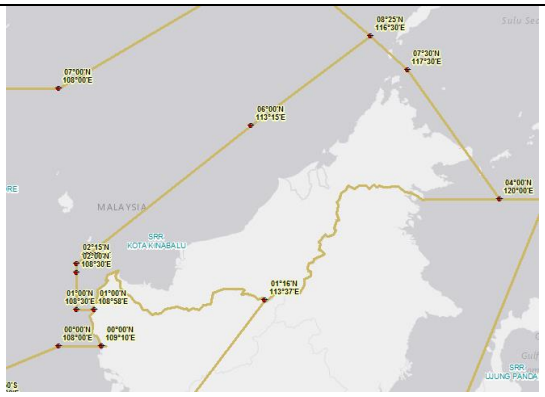
Kota Kinabalu SRR (Kota Kinabalu FIR)	N 04 00 00, E 120 00 00; N 03 59 12, E 117 54 33; (approx GIS for missing coordinate) thence following the national boundary from N 03 59 12, E 117 54 33 (approx) to ~~N 01 16 00, E 113 37 00;~~ superfluous coordinate ~~thence following the national boundary to~~ N 01 00 00, E 108 58 00; N 01 00 00, E 108 30 00; ~~N 02 00 00, E 108 30 00;~~ superfluous coordinate N 02 15 00, E 108 30 00; N 06 00 00, E 113 15 00; E 113 19 29 according to GIS measurement-check N 08 25 00, E 116 30 00; N 07 30 00, E 117 30 00; N 07 30 00, E 117 30 00; N 04 00 00, E 120 00 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

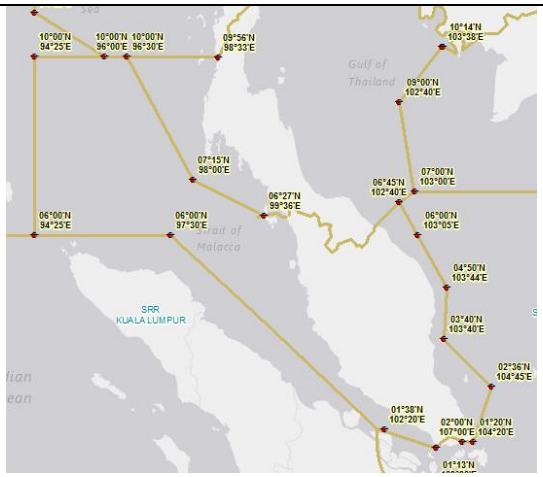
Kuala Lumpur SRR (Kuala Lumpur FIR)	N 06 45 00, E 102 40 00; N 06 00 00, E 103 05 00; N 04 50 00, E 103 44 00; N 03 40 00, E 103 40 00; N 02 36 00, E 104 45 00; N 01 20 00, E 104 20 00; thence following the national boundary from N 01 20 00, E 104 20 00 to N 01 13 00, E 103 30 00; ~~N 01 38 00, E 102 20 00;~~ this coordinate appears to be inaccurate should be N 01 38 49, E 102 09 54 (approx); N 06 00 00, E 097 30 00; N 06 00 00, E 094 25 00; N 10 00 00, E 094 25 00; ~~N 10 00 00, E 096 00 00;~~ superfluous N 10 00 00, E 096 30 00; N 07 15 00, E 098 00 00; ~~N 06 27 00, E 099 36 00~~; N 06 30 08, E 099 29 49; according to Thailand-check thence following the national boundary from N 06 30 08, E 099 29 49 to N 06 15 00, E 102 05 30; approx –check; N 06 45 00, E 102 40 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

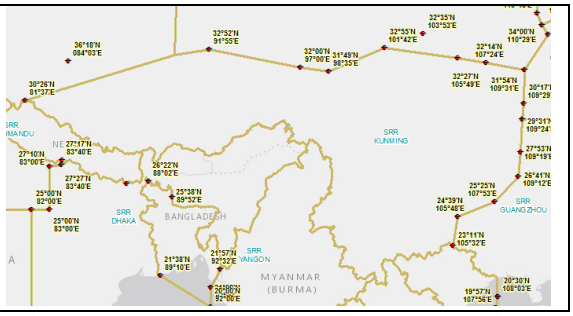
Kunming SRR (Kunming FIR-SRR data not aligned)	N 31 54 00, E 109 31 00; N 30 17 00, E 109 29 00; N 29 31 00, E 109 24 00; N 27 53 00, E 109 19 00; N 26 41 00, E 109 12 00; N 25 25 00, E 107 53 00; N 24 39 00, E 105 48 00; N 23 11 00, E 105 32 00; N 31 54 00, E 109 31 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

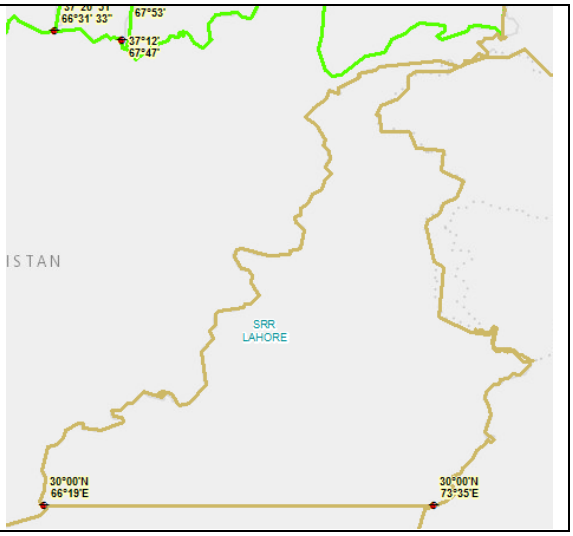
Lahore SRR (Lahore FIR)	N 30 00 00, E 073 35 00; N 30 00 00, E 066 19 00; thence following the national boundary to N 30 00 00, E 073 35 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

Lazhou SRR (Lazhou FIR-SRR data not aligned)	N 41 44 00, E 105 13 00; N 40 43 00, E 105 55 00; N 40 20 00, E 107 01 00; N 38 44 00, E 109 41 00; N 38 22 00, E 110 36 00; N 37 28 00, E 110 44 00; N 35 32 00, E 110 18 00; N 34 32 00, E 110 15 00; N 34 00 00, E 110 29 00; N 33 32 00, E 110 52 00; N 31 54 00, E 109 31 00; N 32 14 00, E 107 24 00; N 32 27 00, E 105 49 00; N 32 55 00, E 101 42 00; N 31 49 00, E 098 35 00; N 32 00 00, E 097 00 00; N 32 52 00, E 091 55 00; N 36 02 00, E 089 01 00; N 36 25 00, E 087 23 00; N 38 21 00, E 090 13 00; N 41 48 00, E 095 08 00; N 42 55 00, E 096 20 00; N 32 32 00, E 103 53 00; N 41 44 00, E 105 13 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

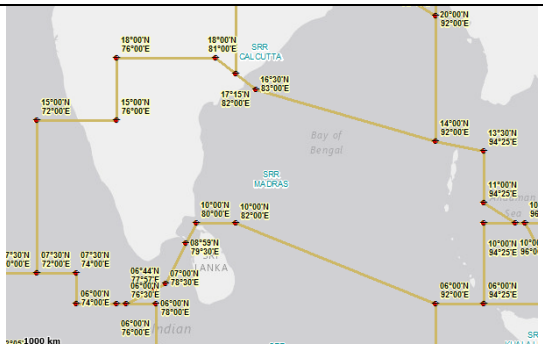
Madras SRR (Chennai FIR-SRR data not aligned)	N 17 15 00, E 082 00 00; N 16 30 00, E 083 00 00; N 14 00 00, E 092 00 00; N 13 30 00, E 094 25 00; N 11 00 00, E 094 25 00; N 10 00 00, E 096 00 00; N 10 00 00, E 094 25 00; N 06 00 00, E 094 25 00; N 06 00 00, E 092 00 00; N 10 00 00, E 082 00 00; N 10 00 00, E 080 00 00; N 07 00 00, E 078 30 00; N 06 44 00, E 077 57 00; N 06 00 00, E 076 30 00; N 06 00 00, E 076 00 00; N 06 00 00, E 074 00 00; N 07 30 00, E 074 00 00; N 07 30 00, E 072 00 00; N 15 00 00, E 072 00 00; N 15 00 00, E 076 00 00; N 18 00 00, E 076 00 00; N 18 00 00, E 081 00 00; N 17 15 00, E 082 00 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

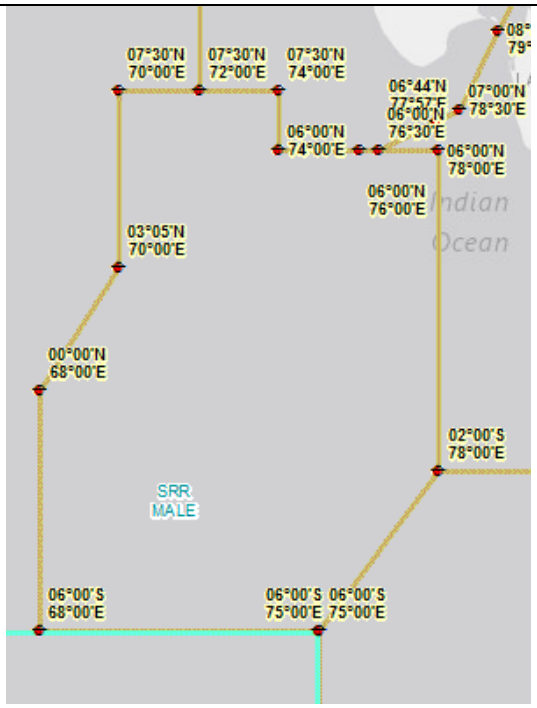
Male SRR (Male FIR-SRR not aligned)	N 06 00 00, E 076 30 00; N 06 00 00, E 078 00 00; S 02 00 00, E 078 00 00; S 06 00 00, E 075 00 00; S 06 00 00, E 068 00 00; N 03 05 00, E 070 00 00; N 07 30 00, E 070 00 00; N 07 30 00, E 072 00 00; N 07 30 00, E 074 00 00; N 06 00 00, E 074 00 00; N 06 00 00, E 076 00 00; N 06 00 00, E 076 30 00. Second set of data from State inconsistent with GIS: N 08 00 00, E 073 00 00; N 06 00 00, E 078 00 00; S 02 00 00, E 078 00 00; S 06 00 00, E 075 00 00; S 06 00 00, E 068 00 00; S 00 00 00, E 068 00 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

Manila SRR (Manila FIR-SRR data not aligned)	N 21 00 00, E 117 30 00; N 21 00 00, E 121 30 00; N 21 00 00, E 130 00 00; N 07 00 00, E 130 00 00; N 03 30 00, E 133 00 00; N 03 30 00, E 132 00 00; N 04 00 00, E 132 00 00; N 04 00 00, E 120 00 00; N 07 30 00, E 117 30 00; N 08 25 00, E 116 30 00; N 10 30 00, E 114 00 00; N 14 30 00, E 114 00 00; N 16 40 00, E 114 00 00; N 21 00 00, E 117 30 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

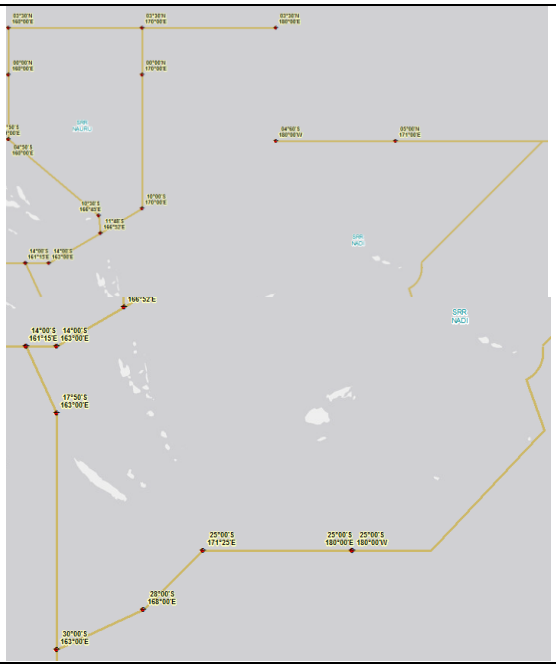
Nadi SRR (Nadi FIR-SRR data not aligned)	N 03 30 00, W/E 180 00 00; S 25 00 00, W/E 180 00 00; S 25 00 00, E 171 25 00; S 28 00 00, E 168 00 00; S 30 00 00, E 163 00 00; S 17 50 00, E 163 00 00; S 14 00 00, E 161 15 00; S 14 00 00, E 163 00 00; S 11 48 00, E 166 52 00; S 10 00 00, E 170 00 00; N 03 30 00, E 170 00 00; N 03 30 00, W/E 180 00 00; S 05 00 00, W/E 180 00 00; S 05 00 00, W 172 00 00; S 25 00 00, W/E 180 00 00; N 03 30 00, W/E 180 00 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

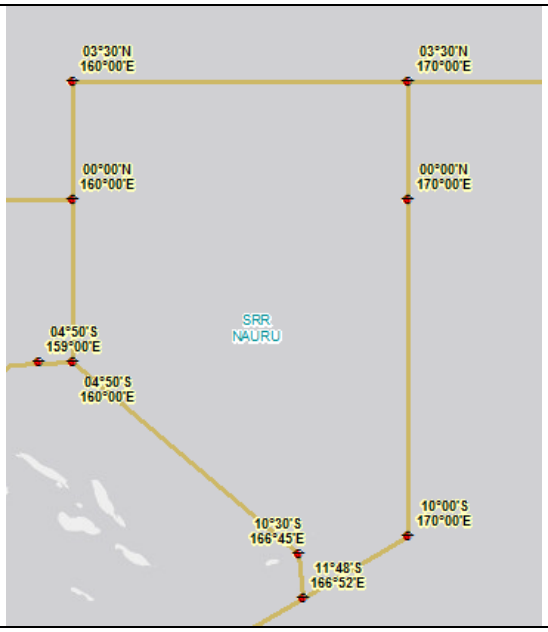
Nauru SRR (Nauru FIR)	N 03 30 00, E 170 00 00; ~~N/S 00 00 00, E 170 00 00;~~ superfluous S 10 00 00, E 170 00 00; S 11 48 00, E 166 52 00; S 10 30 00, E 166 45 00; S 04 50 00, E 160 00 00; ~~N/S 00 00 00, E 160 00 00;~~ superfluous N 03 30 00, E 160 00 00; N 03 30 00, E 170 00 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

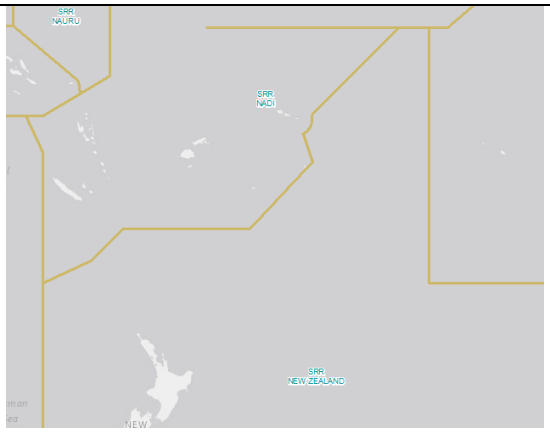
New Zealand SRR (Auckland Oceanic FIR-New Zealand SRR data not aligned)	S 90 00 00, E 163 00 00; S 25 00 00, E 163 00 00; S 25 00 00, E 180 00 00; S 05 00 00, ~~E~~ W 171 00 00; (longitude is W, not east as in Table SAR I-1); S 05 00 00, W 157 00 00; S 30 00 00, W 157 00 00; S 30 00 00, W 131 00 00; S 90 00 00, W 131 00 00; ~~S 90 00 00, W 180 00 00;~~ (line is superfluous); S 90 00 00, E 163 00 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

Phnom Penh SRR (Phnom Penh FIR-SRR data not aligned)	No information on record	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

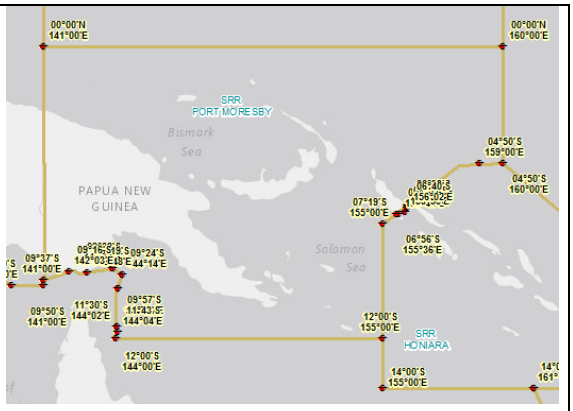
Port Moresby SRR (Port Moresby FIR-SRR data not aligned)	S 04 50 00, E 160 00 00; S 04 50 00, E 159 00 00; S 06 33 00, E 156 02 00; S 06 40 00, E 156 02 00; S 06 51 00, E 155 55 00; S 06 56 00, E 155 42 00; S 06 56 00, E 155 36 00; S 07 19 00, E 155 00 00; S 12 00 00, E 155 00 00; S 12 00 00, E 144 00 00; S 11 43 00, E 144 04 00; S 11 30 00, E 144 02 00; S 09 57 00, E 144 05 00; S 09 24 00, E 144 14 00; S 09 08 00, E 143 52 00; S 09 19 00, E 142 48 00; S 09 16 00, E 142 03 00; S 09 37 00, E 141 00 00; N 00 00 00, E 141 00 00; N/S 00 00 00, E 160 00 00; S 04 50 00, E 160 00 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

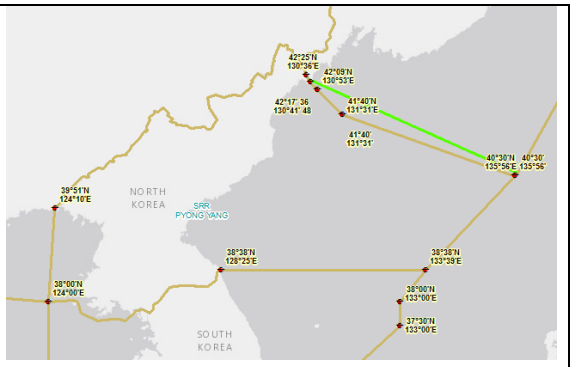
Pyongyang SRR (Pyongyang FIR)	N 40 30 00, E 135 56 00; N 38 38 00, E 133 39 00; N 38 38 00, E 128 ~~25~~ 22 00; GIS inconsistency thence following the national boundary from N 38 38 00, E 128 22 00 to N 38 00 00, E 124 51 00; ROK data N 38 00 00, E 124 00 00; N 39 51 00, E 124 10 00; thence following the national boundary from N 39 51 00, E 124 10 00 to N 42 25 00, E 130 36 00; N 42 09 00, E 130 53 00; N 41 40 00, E 131 31 00; N 40 30 00, E 135 56 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

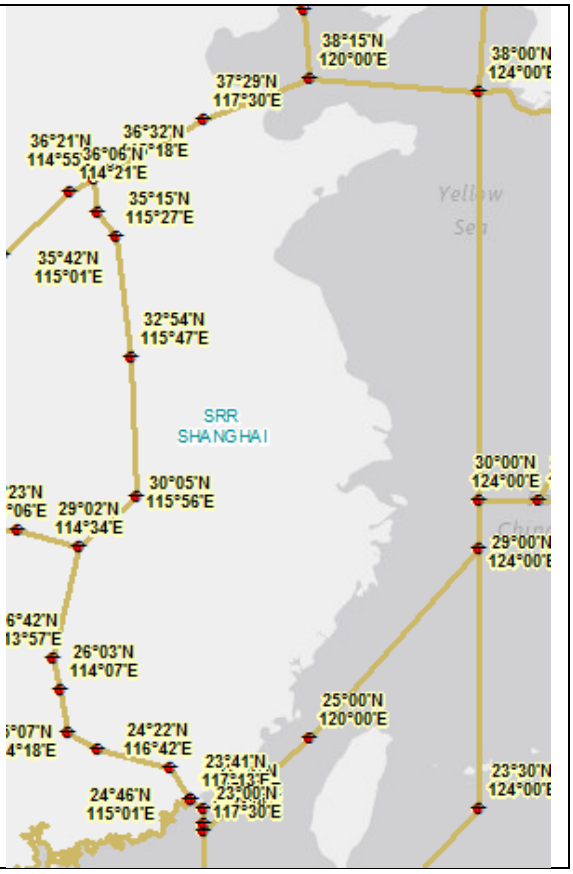
Shanghai SRR (Shanghai FIR-SRR data not aligned)	N 36 32 00, E 115 18 00; N 37 29 00, E 117 30 00; N 38 15 00, E 120 00 00; N 38 00 00, E 124 00 00; N 30 00 00, E 124 00 00; N 29 00 00, E 124 00 00; N 25 00 00, E 120 00 00; N 23 00 00, E 117 30 00; N 23 10 00, E 117 30 00; N 23 30 00, E 117 30 00; N 23 41 00, E 117 13 00; N 23 42 00, E 117 11 00; N 24 22 00, E 116 42 00; N 24 46 00, E 115 01 00; N 25 07 00, E 114 18 00; N 26 03 00, E 114 07 00; N 26 42 00, E 113 57 00; N 29 02 00, E 114 34 00; N 30 05 00, E 115 56 00; N 32 54 00, E 115 47 00; N 35 15 00, E 115 27 00; N 35 42 00, E 115 01 00; N 36 21 00, E 114 55 00; N 36 32 00, E 115 18 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

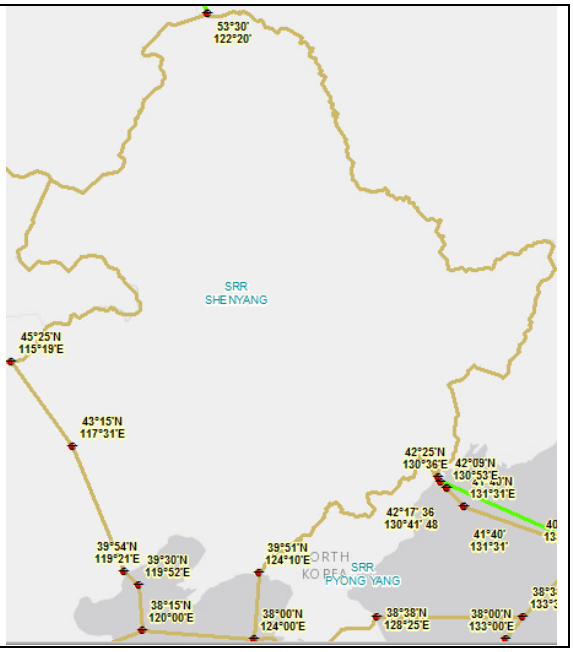
Shenyang SRR (Shenyang FIR-SRR data not aligned)	No information on record	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

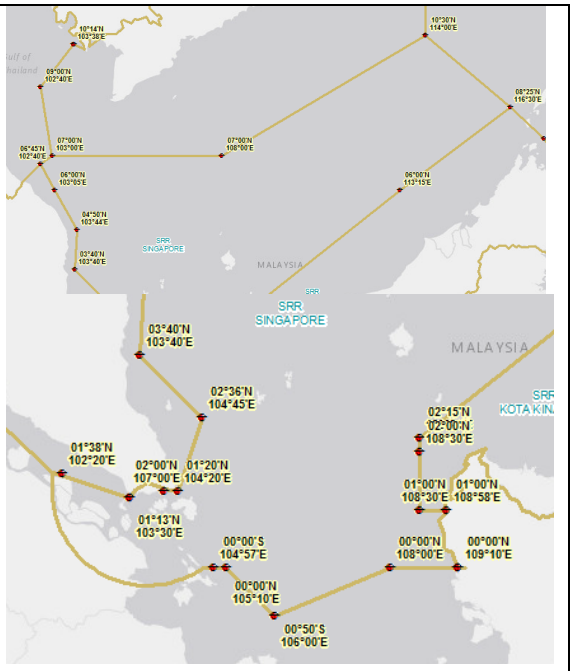
Singapore SRR (Singapore FIR)	N 08 25 00, E 116 30 00; N 02 15 00, E 108 30 00; N 01 00 00, E 108 30 00; ~~N 01 00 00, E 108 58 00;~~ GIS inconsistent N 01 00 00, E 108 54 00; thence following the coastline of Borneo from N 01 00 00, E 108 54 00 to N 00 15 00, E 109 00 00; GIS inconsistent ~~N 00 00 00, E 109 10 00;~~ N 00 00 00, E 109 00 00; GIS inconsistent N 00 00 00, E 108 00 00; S 00 50 00, E 106 00 00; N 00 00 00, E 105 10 00; S 00 00 00, E 104 46 00; GIS inconsistent the arc of a circle radius 100NM centered on Singapore Island coordinates? clockwise from S 00 00 00, E 104 46 00 to N 10 39 00, E 102 10 00; GIS inconsistent ~~N 01 38 00, E 102 20 00;~~ N 01 13 00, E 103 30 00; N 01 17 00, E 103 36 00; GIS inconsistent ~~shows N 01 13 E 103 30~~ thence following the national boundary from N 01 17 00, E 103 36 00 to N 01 20 00, E 104 11 20 (approx) GIS? N 01 20 00, E 104 20 00; N 02 36 00, E 104 45 00; N 03 40 00, E 103 40 00; N 04 50 00, E 103 44 00; N 06 45 00, E 102 40 00; N 07 00 00, E 103 00 00; N 07 00 00, E 108 00 00; N 10 30 00, E 114 00 00; N 08 25 00, E 116 30 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

Taegu SRR (Incheon FIR)	N 38 38 00, E 133 39 00; N 38 00 00, E 133 00 00; N 37 30 00, E 133 00 00; N 34 40 00, E 129 10 00; N 32 30 00, E 127 30 00; N 32 30 00, E 126 50 00; N 30 00 00, E 125 25 00; N 30 00 00, E 124 00 00; N 38 00 00, E 124 00 00; N 38 00 00, E 124 51 00; following the national boundary from N 38 00 00, E 124 51 00 to N 38 38 00, E 128 22 00; ~~N 38 38 00, E 128 25 00;~~ GIS inconsistent N 38 38 00, E 133 39 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

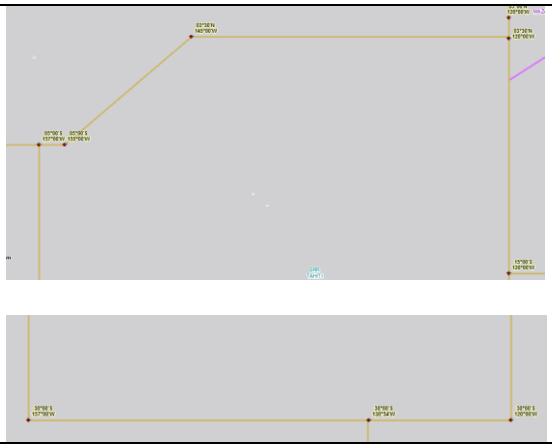
Tahiti SRR (Tahiti FIR)	N 03 30 00, W 120 00 00; S 30 00 00, W 120 00 00; S 30 00 00, W 157 00 00; S 05 00 00, W 157 00 00; S 05 00 00, W 155 00 00; N 03 30 00, W 145 00 00; N 03 30 00, W 120 00 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

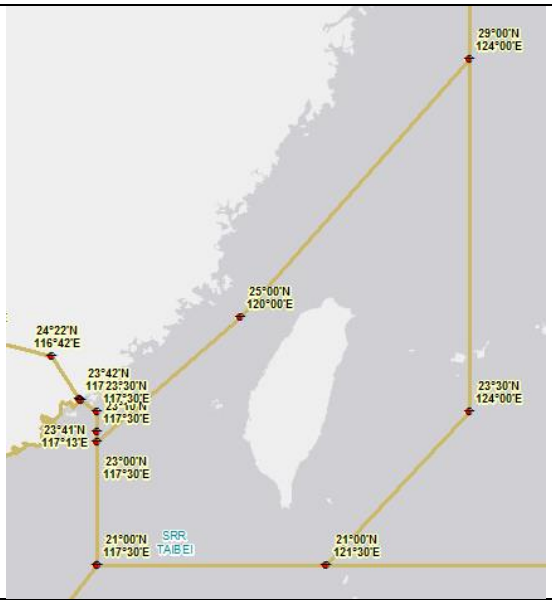
Taibei SRR (Taibei SRR)	N 29 00 00, E 124 00 00; N 23 30 00, E 124 00 00; N 21 00 00, E 121 30 00; N 21 00 00, E 117 30 00; N 23 00 00, E 117 30 00; N 25 00 00, E 120 00 00; N 29 00 00, E 124 00 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

Tokyo SRR (Fukuoka FIR)	N 50 05 00, E 159 00 00; N 43 00 00, E 165 00 00; N 27 00 00, E 165 00 00; N 27 00 00, E 155 00 00; N 21 00 00, E 155 00 00; N 21 00 00, E 121 30 00; N 23 30 00, E 124 00 00; N 30 00 00, E 124 00 00; N 30 00 00, E 125 25 00; N 32 30 00, E 126 50 00; N 32 30 00, E 127 30 00; N 34 40 00, E 129 10 00; N 37 30 00, E 133 00 00; N 38 00 00, E 133 00 00; N 38 38 00, E 133 39 00; N 40 30 00, E 135 56 00; N 45 45 00, E 140 00 00; N 45 45 00, E 142 00 00; N 44 30 00, E 145 40 00; then between Hokkaido and Kunashiri Islands from N 44 30 00, E 145 40 00 to N 43 20 00, E 145 50 00; N 43 00 00, E 146 50 00; N 45 00 00, E 150 00 00; N 50 05 00, E 159 00 00.	 Charts are not to scale and not aligned 

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

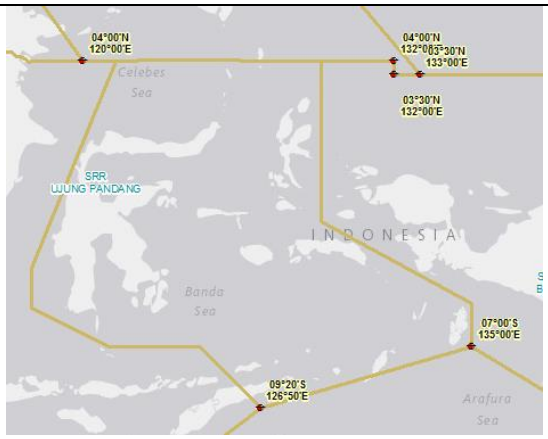
Ujung Pandang SRR (Ujung Pandang FIR-SRR data not aligned)	N 03 30 00, E 133 00 00; N 03 30 00, E 141 00 00; S 09 50 00, E 141 00 00; S 09 50 00, E 139 40 00; S 07 00 00, E 135 00 00; S 09 20 00, E 126 50 00; S 12 00 00, E 123 20 00; S 12 00 00, E 114 30 00; S 08 20 00, E 110 23 00; S 03 00 00, E 110 23 00; N 01 16 00, E 113 37 00; thence following the national boundary to N 04 00 00, E 120 00 00; N 04 00 00, E 132 00 00; N 03 30 00, E 132 00 00; N 03 30 00, E 133 00 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

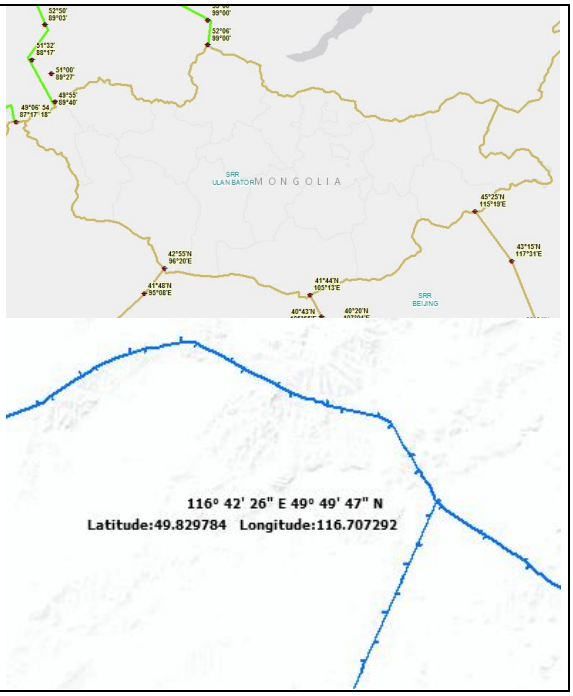
~~**Ulan Bator**~~ **Ulaanbaatar SRR** (Ulaanbaatar FIR)	N 49 49 47, E 116 42 26 (GIS approx); thence following the national boundary to N 49 49 47, E 116 42 26.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

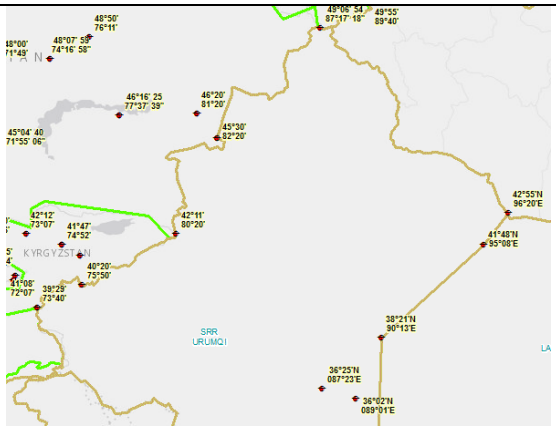
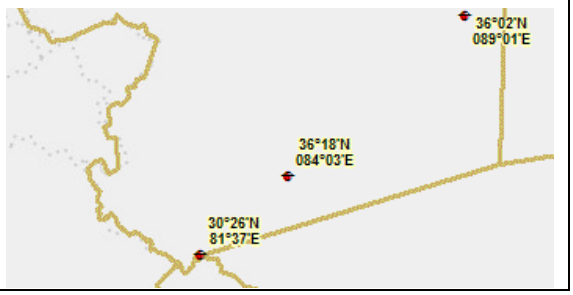
Urumqi SRR (Urumqi FIR-SRR data not aligned) Charts shown are not to scale and not aligned	N 42 55 00, E 096 20 00; N 41 48 00, E 095 08 00; N 38 21 00, E 090 13 00; N 30 26 00, E 081 37 00; thence following the national boundary to N 39 29 00, E 073 40 00; thence following the national boundary to N 40 20 00, E 075 50 00; thence following the national boundary to N 42 11 00, E 080 20 00; N 42 55 00, E 096 20 00.	 

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

Vientiane SRR (Vientiane FIR)	N 17 00 00, E 106 34 00; thence following the national boundary to N 17 00 00, E 106 34 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

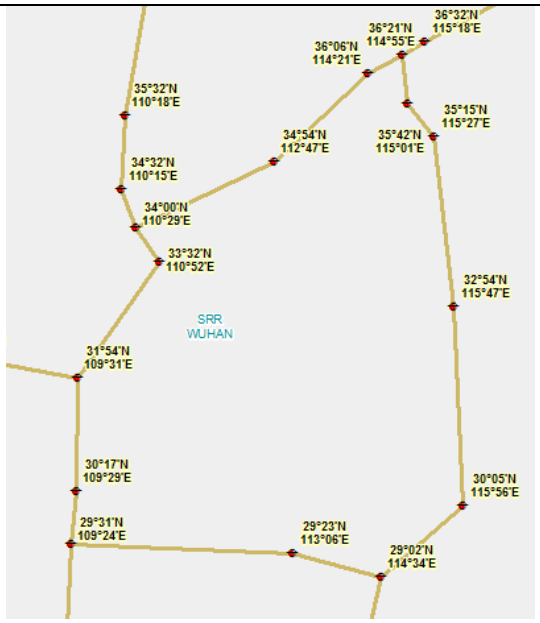
Wuhan SRR (Wuhan FIR-SRR data not aligned)	N 33 32 00, E 110 52 00; N 34 00 00, E 110 29 00; N 34 54 00, E 112 47 00; N 36 06 00, E 114 21 00; N 36 21 00, E 114 55 00; N 35 42 00, E 115 01 00; N 35 15 00, E 115 27 00; N 32 54 00, E 115 47 00; N 30 05 00, E 115 56 00; N 29 02 00, E 114 34 00; N 29 23 00, E 113 06 00; N 29 31 00, E 109 24 00; N 30 17 00, E 109 29 00; N 31 54 00, E 109 31 00; N 33 32 00, E 110 52 00.	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER

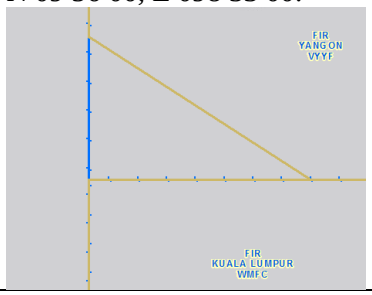
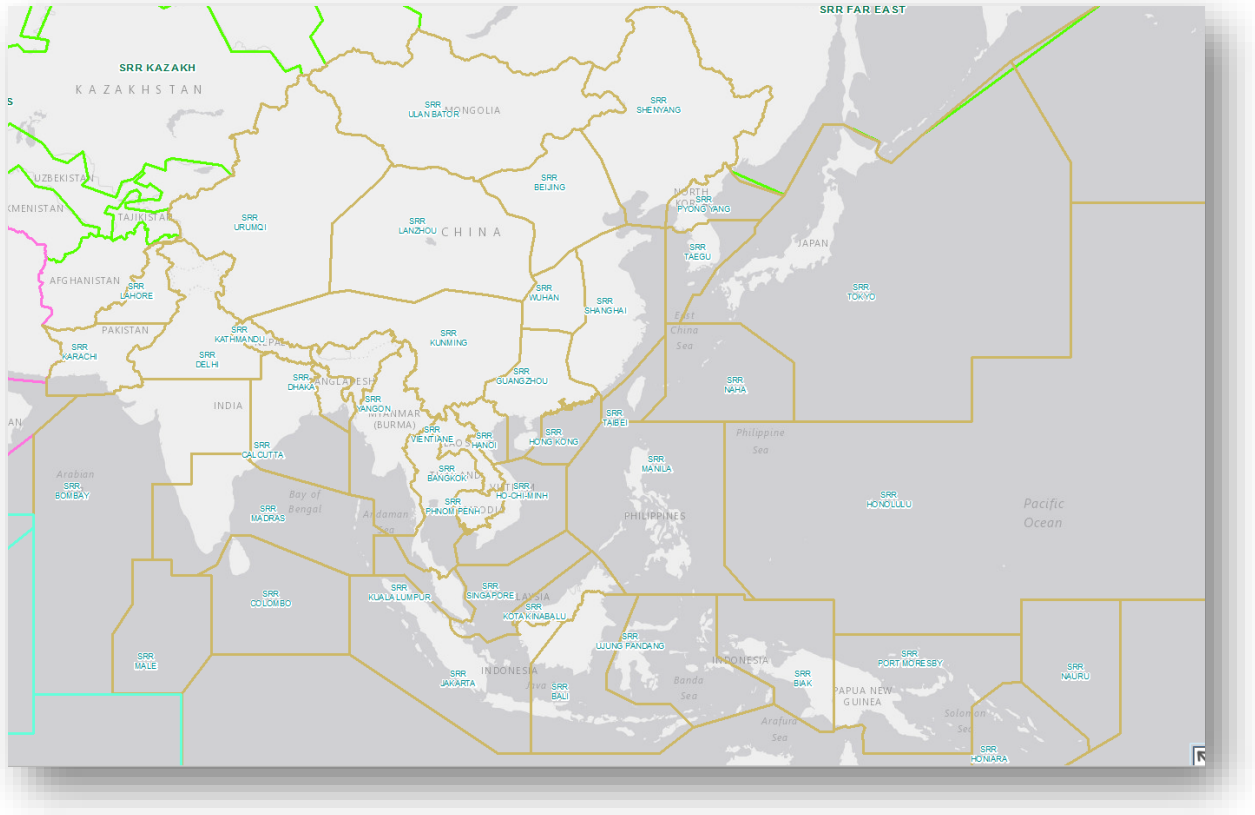
Yangon SRR Yangon FIR-SRR data not aligned	N 09 56 00, E 098 33 00; coordinate needs to be checked N 10 00 00, E 096 30 00; ~~N 10 00 00, E 094 25 00;~~ there are two different GIS descriptions – one does not have this coordinate – if this coordinate is not part of the description then the Chennai FIR needs to be fixed N 1100 00, E 094 25 00; this coordinate may not be necessary if the corner is at ~~N 10 00 00, E 094 25 00~~ N 13 30 00, E 094 25 00; N 14 00 00, E 092 00 00; ~~N 20 00 00, E 092 00 00;~~ superfluous N 21 00 00, E 092 00 00; N 21 57 00, E 092 32 00; thence following the national boundary from N 21 57 00, E 092 32 00 to N 09 56 00, E 098 33 00. 	

TABLE SAR I-1 – AERONAUTICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS

NOTE: THESE SRR DESCRIPTIONS WILL NOT BE APPROVED UNTIL VERIFICATION AND ENDORSEMENT BY APANPIRG/31 OR LATER



THIS IMAGE NOT TO BE USED FOR THE PURPOSES OF SRR DESCRIPTIONS AS IT IS INDICATIVE ONLY OF THE DATA THAT ICAO HAS BEFORE VERIFICATION

AERONATICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS HISTORY DATA RECORDS

State	SRR	Lastest RAN Meeting or PfA Number	Lateral limits coordinates in record	Remarks
Afghanistan	Kabul SRR	No record		
Australia	Australia SRR	APAC 97/07	Cannot open file	
Bangladesh	Dhaka SRR	RAN/3	Amend the southern boundary of Dhaka SRR as follows: 2138N 08910E to 2000N 09200E to 2100N 09200E to 2157N 09232E.	
Cambodia	Phnom Penh SRR	No record		
China	Beijing SRR	RAN/2	Amend the boundaries of Beijing FIR as follows: From N3815 E12000, N3930 E11952, N3954 E11921, N4315 E11731, a point on Sino-Mongoliian border, N452317 E1152112, along Sino-Mogolian border line, N414451 E1051345, N4043 E10555, N4020 E10701, N3906 E10759, N3844 E10941, N3822 E11036, N3728 E11044, N3532 E11018, N3432 E11015, N3405 E11029, N3454 E11247, N3606 E11421, N3621 E11455, N3632 E11518, N3729 E11730, N3815 E12000.	
China	Guangzhou SRR	RAN/2	Amend the boundaries of Guangzhou FIR as follows: From N2310 E11730, N2330 E11730, N2342 E11711, N2422 E11642, N2446 E11501, N2507 E11418, N2603 E11407, N2642 E11357, N2902 E11434, N2923 E11306, N2931 E10924, N2753 E10919, N2641 E10912, N2525 E10753, N2439 E10548,	Canton SRR From the point where 10500E intersects the northern national border of the Democratic

AERONATICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS HISTORY DATA RECORDS

			a point over sino-VietNamese border N231145 E1053230, along Sino-VietNamese border line, N213252 E10800, N1713 E10800, N1740 E10940, N1930 E11130, N2125 E11130, along the territorial limits of China to N2310 E11730.	Republic of Viet Nam along that border to 10800E, then to 1800N 10800E, 1713N 10800E, 1740N 10940E, 1930N 11130E, 2125N 11130E then along the northern boundary of the Hong Kong FIR to 2340N 11730E, 3500N 11730E, 3500N 10500E, then southwards along the 10500E meridian to the point where it intersects the northern national border of the Democratic Republic ofViet Nam.
China	Hong Kong SRR	No record		
China	Kunming SRR	RAN/2	Amend the boundaries of Kunming FIR as follows: From a point on Sino-Nepalese border,	

AERONATICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS HISTORY DATA RECORDS

			N302630 E813730, alog Sino-Nepalese, Sino-Sikkim, Sino-Bhutan, Sino-Indian, Sino-Burmese, Sino-Laos and Sino-VietNam border lines, N231145 E1053230, N2439 E10548 N2525 E10753, N2641 E10912, N2753 E10919, N2931 E10924, N3017 E10929, N3154 E10931, N3214 E10724, N3227 E10549, N3255 E10142, N3149 E9835, N3200 E9700, N3252 E9155, N3236 E9000, N302630 E813730	
China	Lazhou SRR	RAN/2	Amend the boundaries of Lanzhou FIR as follows: From a point on Sino-Mongolian border, N414451 E1053145 along Sino-Mongolia border line N4255 E962014, N4145 E9508, N3821 E9013, N3236 E9000, N3252 E9155, N3200 E9700, N3149 E9835, N3255 E10142, N3227 E10549, N3214 E10724, N3154 E10931, N3332 E11052, N3405 E11029, N3424 E11015, N3532 E11018, N3728 E11044, N3822 E11036, N3844 E10941, N3906 E10759, N4020 E10701, N4043 E10555, N414451 E1051345	
China	Shanghai SRR	RAN/2	From N3800 E12400, N3815 E12000, N3729 E11730, N3632 E11518, N3621 E11455, N3542 E11501, N3515 E11527, N3431 E11555, N3254 E11547, N3005 E11556, N2902 E11434, N2642 E11357, N2603 E11407, N2507 E11418, N2446 E11501, N2422 E11642, N2342 E11711, N2330 E11730, N2300 E11730, N2500 E12000, N2900 E12400, N3800 E12400.	
China	Shenyang SRR	RAN/2	From N3800 E12400, N3815 E12000, N3729 E11730,	

AERONATICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS HISTORY DATA RECORDS

			N3632 E11518, N3621 E11455, N3542 E11501, N3515 E11527, N3431 E11555, N3254 E11547, N3005 E11556, N2902 E11434, N2642 E11357, N2603 E11407, N2507 E11418, N2446 E11501, N2422 E11642, N2342 E11711, N2330 E11730, N2300 E11730, N2500 E12000, N2900 E12400, N3800 E12400.	
China	Taibei SRR	RAN/2	Amend the boundaries of Taibei FIR as follow; From N2100 E12130, N2100 E11730, N2300 E11730, N2500 E12000, N2900 E12400, N2330 E12400, N2100 E12130.	
China	Urumqi SRR	RAN/2	Amend the boundaries of SRR Urumqi as follow: From a point on Sino-Mongolian border N4255 E962014, along Sino-Mongolia, Sino-Soviet, Sino-Afghanistan, Sino-Pakistani, Sino-Indian and Sino-Nepalese border lines, N302630 E813730, N3236 E9000, N3821 E9013, N4148 E95085, N4255 E962014.	
China	Wuhan SRR	RAN/2	Amend the boundaries of SRR Wuhan as follow; From N3621 E14455, N3606 E11421, N3454 E12247, N3405 E11029, N3332 E11052, N3154 E10931, N3017 E10929, N2931 E10924, N2923 E11306, N2902 E11434, N3005 E11556, N3254 E11547, N3431 E11555, N3515 E11527, N3542 E11501, N3621 E11455	

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Democratic People's Republic of Korea	Pyongyang SRR	RAN/1	From 3800N 12400E northwards to the continental China coast; along the northern boundary of the Democratic People's Republic of Korea to the USSR's national border to 4220N 13040E; then to 4033N 13600E, 3838N 13339E, 3838N 12822E then along the armistice line to 3800N 12450E; then to 3800N 12400E	
French Polynesia (France)	Tahiti SRR	RAN/1	Amend the western boundary of the SRR Tahiti as follows: 0500S 15500W, 0500S 17500W, 3000S 15700W, 03000S 14200W.	
India	Bombay SRR	RAN/1 RAN/2	Amend the southern and eastern boundaries of the SRR Bombay as follows: 1200N 0600E, 0500N 6000E, 500N 7120E, 0600N 7200E, 1500N 7200E, 1500N 7600E, 1800N 7600E, 1800N 8100E 1715N 8200E, 2500N 8200E. Amend the southern boundary of the SRR Bombay so as to include the airspace between: N0500 E6000, S0600 E6000, S0600 E6800, Equator E6800, N0500 E7120.	
India	Calcutta	RAN/3	Amend the Calcutta SRR boundary as follows: Beginning of the intersection of the E08340 meridian with the common border of India/Nepal, then East along the border of India/Nepal to the point on common border of Nepal/China/India, then along the border of India/China to the point on common border of India/China/Myanmar, then	

AERONATICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS HISTORY DATA RECORDS

			along the border of India/Myanmar to 2157N 09232E, then North along the common border of India/Bangadesh to 2138N 08910E to 2000N 09200E then South along 09200E meridian to 1400N 09200E to 1630N 08300E to 1715N 08200E to 2500N 08200E to 2500N 08300E to 2710N 08300E to 2715N 08340E, then along the 08340E meridian to its intersection with the common border of India/Nepal.	
India	Delhi SRR	No record		
India	Madras SRR	RAN/1 RAN/2 RAN/3	Eastern boundary: 1630N 8300E, 1400N 9200E, 1330N 9425E, 0600N 9425E, 0600N 9200E, 1000N 9200E. Amend the common boundary between Madras FIR and Colombo FIR as follows: N1000 E8200, N0600 E9200 Amend the eastern boundary of Madras SRR as follows: From 0600N 09425E to 1000N 09425E to 1000N 09600E to 1100N 09425E to 1330N 09425E.	
Indonesia	Bali SRR	No record		
Indonesia	Biak SRR	RAN/1	Amend te eastern boundary of the Biak SRR as follows: 0330N 14100E, Equator 14100E, along the territorial border of Indonesia/Papua New Guinea to 0937S 14102E, 0950S 14100E, 0950S 14000E.	

AERONATICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS HISTORY DATA RECORDS

Indonesia	Jakarta SRR	RAN/1	Amend the boundaries of the Jakarta SRR as follows: 0600N 9200E, 0600N 9730E, 0200N 10215E, then anti clockwise along a circle of 100NM radius centered at Singapore to 0000 10446E, 0000 10510E, 0050S 10600E, 0000 10800E, 0000 10900E, then north along the coast line of West Kalimantan to its intersection with the border line between Indonesia and Sarawak then along the Indonesian national boundaries until 0113N 11335E then to 0300S 11023E, 1200S 11023E, 1200S 10700E, 0200S 9200E to 0600N 9200E.	
Indonesia	Ujung Pandang SRR	RAN/1	Rename the Makassar SRR as the Ujung Pandang SRR and amend the boundaries as follows: 0400N 12115E, 0400N 12910E, 0200S 12910E, 0520S 13500E, 0700S 13500E, 0920S 12650E, 0700S 12430E, 0700S 12100E, 0530S 11800E, 0400S 11800E then to 0400N 12115E.	
Fiji	Nadi SRR	RAN/1	Amend the Fiji SRR as the Nandi SRR and amend the lateral limits of the **Nandi** and Auckland SRRs as follows: Equator 16000E, Equator 17000E, 0330N 17000E, 0330N 18000E, 0500S 18000E, 0500S 15700W, 2000S 15700W, 2000S 16700E, 2500S 17500W, 2500S 17730E, 3100S 16940E, 3200S 16300E, 1400S 16300E, 1400S 15500E, 1200S 15500E, along the amended eastern boundary of Port Moresby FIR to Equator 16000E.	

AERONATICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS HISTORY DATA RECORDS

Japan	Tokyo SRR	RAN/1	Amend the northern boundary of the Tokyo SRR as follows: 4300N 14650E, 4500N 15000E, 5005N 15900E, 4300N 16500E. Amend the south western boundary of the Tokyo SRR to include the Okinawa SRR in its entirety.	
Lao PDR	Vientiane SRR	No record		
Malaysia	Kota Kinabalu SRR	RAN/1	0825N 11630E, 0730N 11730E, 0400N 12000E, 0400N 11800E, then aling the national boundary of East Malaysia and Indonesia to a point 0100N 10854E then 0100N 10830E, 0215N 10830E, 0825N 11630E.	
Malaysia	Kuala Lumpur SRR	RAN/1	0645N 10240E, 0450N 10344E, 0340N 10340E, 0236N 10445E, 0120N 10420E, along 0120N to the Malaysia national boundary, then along the Malaysia nation boundary to 0117N 10336E, 0113N 10330E, 0200N 10215E, 0600N 9730E, 1000N 9425E, 1000N 9630E, 0715N 9800E, 0630N 9930E, then along the northern border of West Malaysia to 0615N 10215E, 0645N 10240E.	
Maldives	Male SRR	RAN/2	Insert a new SRR Male with boundaries as follows: N0600 E7800, N0600 E7200, Equator E6800, S0600 E6800, S0600 E7500, S0200 E7800, N0600 E7800.	
Mongolia	Ulaanbaatar SRR (former name Ulan Nator)	RAN/1	national borders of Mongolia	

AERONATICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS HISTORY DATA RECORDS

Myanmar	Yangon SRR (Rangoon)	RAN/1	Amend the Yangon SRR boundary as follows: Straight lines joining 2100N 09200E, 2157N 09232E, thence North along the border of India/Myanmar to the point on common border of China/India/Myanmar, then along the border of China/Myanmar to the point of common border of China/India/Myanmar, then along border of China/Myanmar to the point of common border of China/Laos PDR/Myanmar, then along the border of Laos PDR/Myanmar to the point of common border of Laos PDR/Myanmar/Thailand, then along the border of Myanmar/Thailand to 1000N 09830E to 1000N 09600E to 1100N 09425E to 1330N 09425E to 1400N 09200E to 2100N 09200E.	
Nauru	Nauru SRR	No record		
Nepal	Kathmandu SRR	No record		
New Zealand	New Zealand SRR	No record		
Pakistan	Karachi SRR	No record		
Pakiatan	Lahore SRR	No record		
Papua New Guinea	Port Moresby SRR	RAN/1	Amend the boundaries of the Port Moresby SRR as follows: Equator 14100E, Equator 16000E, 0450S 16000E, 0450S 15900E along the Papua New Guinea territorial border to 0800S 15400E, 0800S 15500E, 1200S 15500E	

AERONATICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS HISTORY DATA RECORDS

			1200S 14400E along the Papua New Guinea territorial border to 0937S 14102E then along the territorial border to Equator 14100E.	
Philippines	Manila SRR	RAN/1	Amend the western boundary of the Manila SRR as follows: 1030N 11400E, 1000N 11430E, 0730N 11520E, 0825N 11630E, 0730N 11730E, 0400N 12000E.	
		RAN/2	Amend the common boundary between Manila and Singapore FIR as follows: 1030N 11400E to 0825N 11630E	
		RAN/3	Amend the eastern boundary of Manila SRR as follows: 2100N 13000E – 0700N 13000E – 0330N 13300E – 0330N 13200E – 0400N 13200E Amend the boundary between Manila SRR and Oakland Oceanic SRR as follows: 2100N 13000E – 0700N 13000E – 0330N 13300E.	
Republic of Korea	Taegu SRR	RAN/1	Amend the Taegu SRR as the Osan SRR and amend the northern boundary as follows: 3800N 12400E, 3800N 12405E, then along the armistice line to 3838N 12822E, then to 3838N 13339E.	
Singapore	Singapore SRR	RAN/1	Amend the boundaries of the Singapore SRR as follows:	

AERONATICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS HISTORY DATA RECORDS

			0645N 10240E, 0700N 10300E, 0700N 10800E, 1030N 11400E, 1000N 11430E, 0730N 11520E, 0215N 10830E, 0100N 10830E, 0100N 10854E, then along the national boundary of Indonesia to 0015N 10900E, then to Equaor 10900E, Equator 10800E, 0050S 10600E, Equator 10510E, Equator 10446E, then around an arc 100 NM radius from Singapore International Airport to 0200N 10215E, 0113N 10330E, 0117N 10336E, then along the Singapore national boundary to 0120N 10406E, 0120N 10420E, 0236N 10445E, 0340N 10340E, 0450N 10344E, 0645N 10240E.	
Solomon Islands	Honiara SRR	No record		
Sri Lanka	Colombo SRR	RAN/1 RAN/2 RAN/3	Amend the western boundary of the Colombo SRR as follows: 1000N 8000E, 0600N 7800E, 0600N 7200E, 0500N 7120E, 0500N 6000E, 0600S 6000E, Amend the western boundary of the Colombo FIR as follows: N0600 E7800, S0200 E7800. Amend the common boundary between Colombo and Madras SRR as follows: From N0900 E07930 to N0700 E07830 to N0600 E07630.	
Thailand	Bangkok SRR	No record		

AERONATICAL SEARCH AND RESCUE REGIONS (SRR) OF THE ASIA AND PACIFIC REGIONS HISTORY DATA RECORDS

United States	Juneau SRR	RAN/1	Amend the boundaries of Juneau SRR as follows: North Pole, 6500N 16900W, 6000N 18000, 5400N 16900E, 5120N 16200E, 5005N 15900E, 4300N 16500E, 4000N 16500E, 4000N 15000W, 5440N 14000W, 5440N 13600W, 5400N 13600W, thence along the nortern boundary of the Vancouver FIR to 5413N 13457W, 543945N 1324100W to the coast at 5442.5N 13036.5W thence along the U.S./Canadian border to its intersection with 141W, thence westward along such coastline to its intersection with 58N, thence due west to the coastline, thence northerly to 141W, thence north to the point of origin.	
United States	Honolulu SRR	No record		
Viet Nam	Hanoi SRR	RAN/1	Lateral limits delineated by the Kunming, Canton, Saigon and Vietntiane FIRs.	
Viet Nam	Ho Chi Minh SRR	No record		

ASIA AND PACIFIC REGIONS (APAC) AIR NAVIGATION PLAN

VOLUME II

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APAC ANP, VOLUME II

PART 0 – INTRODUCTION

1. GENERAL

1.1 The background to the publication of ANPs in three volumes is explained in the Introduction in Volume I. The procedure for amendment of Volume II is also described in Volume I.

1.2 Volume II contains dynamic plan elements related to:

a) the assignment of responsibilities to States for the provision of aerodrome and air navigation facilities and services; and

b) the mandatory requirements related to aerodrome and air navigation facilities and services to be implemented by States in accordance with regional air navigation agreements.

1.3 Volume II does not list all facilities in the regions but only those required for international civil aviation operations in accordance with regional air navigation agreements. A regional air navigation agreement indicates a commitment on the part of the State(s) concerned to implement the requirement(s) specified. Documents from the Integrated Aeronautical Information Package and other publications should be consulted for information on additional facilities and for operational information in general. Detailed guidance material or concepts, complementary to the material in Volumes I, II and III are contained in documents that are referenced as APAC Documents.

2. MANAGEMENT OF REGIONAL AIR NAVIGATION PLANS

2.1 The elements in Volume II are reviewed by the APANPIRG in accordance with its schedule of meetings, in consultation with provider and user States, and with the assistance of the ICAO APAC Regional Office.

2.2 The information on States' facilities and services included in Volume II should be updated following the process of regional air navigation agreements.

2.3 The development and maintenance of region-specific documents that provide detailed guidance material or concepts that are complementary to the material in Volumes I, II and III is the responsibility of the APANPIRG.

APAC ANP, VOLUME II

PART I – GENERAL PLANNING ASPECTS (GEN)

1. INTRODUCTION

1.1. The material in this part of Volume II of ANP is applicable to one or more parts of the ANP. It should be taken into consideration in the overall planning process for the Asia and Pacific Regions.

2. GENERAL REGIONAL REQUIREMENTS

2.1. To facilitate air navigation systems planning and implementation, homogenous ATM areas and/or major traffic flows/routing areas have been defined for the Regions. While these areas of routing do not encompass all movements in the Regions, they include the major routes. This includes the domestic flights in that particular area of routing.

Homogeneous ATM area

2.2. A homogeneous ATM area is an airspace with a common ATM interest, based on similar characteristics of traffic density, complexity, air navigation system infrastructure requirements or other specified considerations. In such an ATM area a common detailed plan will foster the implementation of interoperable ATM systems. Homogeneous ATM areas may extend over States, specific portions of States, or groupings of States. They may also extend over large oceanic and continental areas. They are considered areas of shared interest and requirements.

2.3. The method of identifying homogeneous ATM areas involves consideration of the varying degrees of complexity and diversity of the worldwide air navigation infrastructure. Based on these considerations, planning could best be achieved at the global level if it was organized based on ATM areas of common requirements and interest, taking into account traffic density and the level of sophistication required.

Major traffic flows/routing areas

2.4. A major traffic flow refers to a concentration of significant volumes of air traffic on the same or proximate flight trajectories. Major traffic flows may cross several homogeneous ATM areas with different characteristics.

2.5. A routing area encompasses one or more major traffic flows, defined for the purpose of developing a detailed plan for the implementation of ATM systems and procedures. A routing area may cross several homogeneous ATM areas with different characteristics. A routing area specifies common interests and requirements of underlying homogeneous areas, for which a detailed plan for the implementation of ATM systems and procedures either for airspace or aircraft will be specified.

2.6. The homogeneous ATM areas and major traffic flows/routing areas identified are given in **Table GEN II-1**.

3. SPECIFIC REGIONAL REQUIREMENTS

3.1. States shall establish and maintain a National Air Navigation Plan (NANP) that supports implementation of the Global Air Navigation Plan and regional air navigation planning. The NANP shall be accessible to key stakeholders, including ICAO; however, specific details related to national security may be withheld from public release.

The NANP should detail the State's assessment of its requirements and the implementation process for applicable global and regional air navigation planning elements.

States shall report their implementation progress and status of the applicable global and regional air navigation planning elements at least once each year (preferably prior to 01 April) to support:

- global and regional plans (including the Seamless Air Traffic Management Plan and the Regional Air Navigation Plan Volume III); and
- specific plans for aerodromes, Aeronautical Information Management (AIM), Air Traffic Flow Management (ATFM), Air Traffic Management (ATM) contingency and Search and Rescue (SAR).

Note: a 'robust' status plan that is not subject to consideration as an APANPIRG Deficiency is one that is evaluated as achieving 90% or more implementation of the planning elements.

The NANP should include the following Basic Planning Elements:

Background – a brief introduction aimed at high level decision-makers that describes the need for the plan with benefits and costs, including the necessity for global and regional harmonization and interoperability:

a) general (not necessarily quantitative) description of the Plan's benefits;

b) general description of the costs*; and

c) details of how the State Plan connects to the global and regional planning hierarchy.

**Note 1: this is a matter for the State to determine, and could be in terms of quantitative, qualitative, cost of implementation or cost of not implementing.*

**Note 2: ICAO do not require details of costs from States, as this is for the State's benefit.*

Stakeholder Consultation – high level descriptions and statements:

a) of the process used to consult with stakeholders, including the military; and

b) from key stakeholders (such as Heads of CAAs, ANSPs, military organisations, etc.) endorsing the State Plan.

Analysis – Information on the State's analysis of:

a) all applicable ASBU and regional elements deemed to be applicable, including a statement of the State's priorities* for implementation; and

b) elements that are deemed to be not applicable, and how these were determined.

**Note: this assessment should be guided by the priorities determined by APANPIRG*

Planning – descriptions of:

a) the implementation process, such as how the different stakeholders will work together, design systems and provide feedback on implementation; and
b) each applicable global and regional element's implementation managers (those responsible for execution of the implementation) and timelines.

Progress – details in the State Plan as to the progress of implementation against the planning timelines.

Note 1: this also provides an indication that the Plan is a 'living document' subject to periodic review and update.

Note 2: ICAO would not normally be interested in the details of the Plan (except where specific need is identified at APANPIRG Contributory bodies). The NANP will need to address the BPEs at a high level and States should send detailed information only when requested by ICAO.

3.2. The homogeneous ATM areas and major traffic flows/routing areas identified in the Asia and Pacific Regions are shown in **Chart GEN II APAC-1**.

TABLE GEN II-1 - HOMOGENEOUS ATM AREAS AND MAJOR TRAFFIC FLOWS IDENTIFIED IN THE ASIA AND PACIFIC REGIONS

EXPLANATION OF TABLE

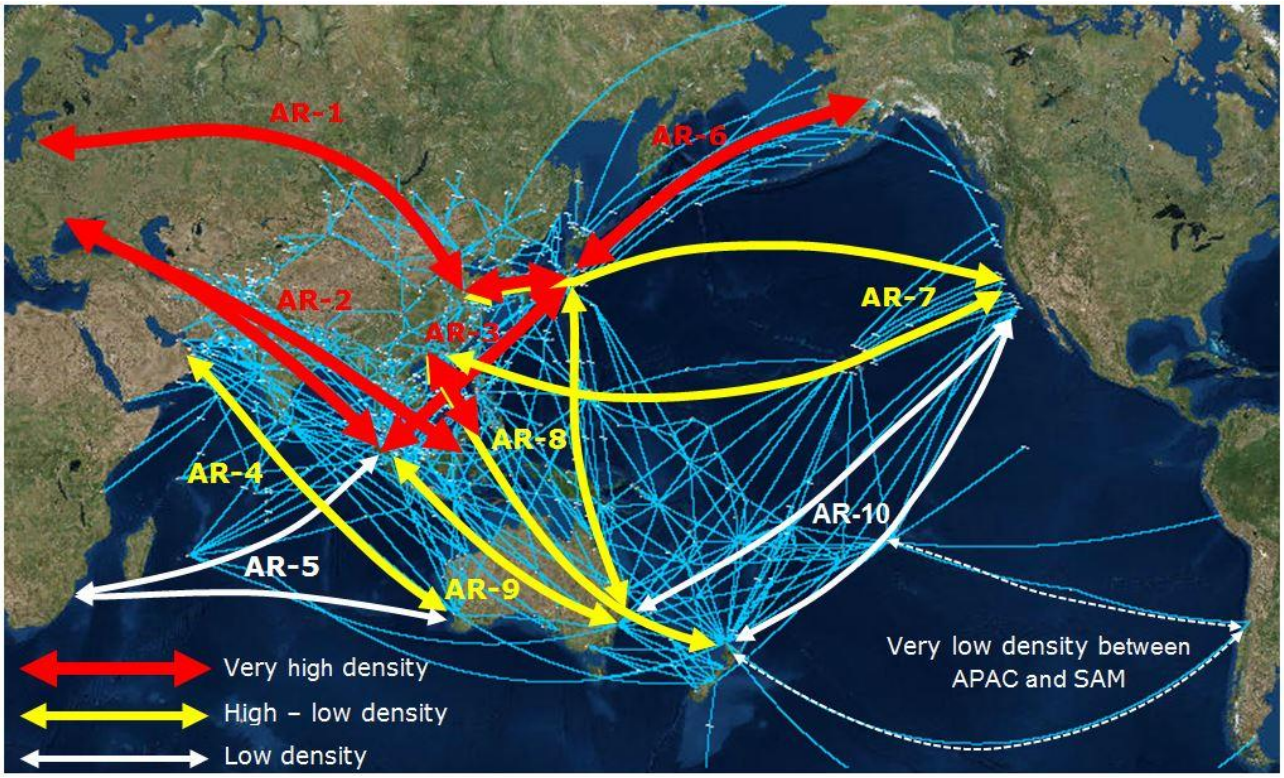
Column		
1	Area of Routing (AR)	Sequential number of area of routing
2	Homogeneous Areas and/or Traffic flows	Brief description and/or name
3	FIRs involved	List of FIRs concerned
4	Type of area covered	Brief description of type of area, examples: Oceanic or Continental High or low density Oceanic en-route or Continental en-route
5	Remarks	Homogeneous ATM Area and/or Major Traffic Flow and Region(s) concerned

Area of routing (AR)	Homogeneous Areas and/or Traffic flows	FIRs involved	Type of area covered	Remarks
1	2	3	4	5
AR1	Between Europe and East Asia – north of the Himalayan Mountains	Ulan Bator Urumqi FIR Lanzhou FIR Kunming FIR Shenyang FIR Beijing FIR Guangzhou FIR Shanghai FIR Pyongyang FIR Incheon FIR Fukuoka FIR Hong Kong FIR	Category S airspace (Asia/Pacific Seamless ATM Plan) high density	EUR/NAT-APAC, previously AR-3, Trans-Asia
AR2	Between Europe and South/Southeast Asia – south of the Himalayan Mountains (includes Inter-Asian flow from India to Southeast Asia)	Kabul FIR Lahore FIR Karachi FIR Delhi FIR Kolkata FIR Chennai FIR Mumbai FIR Yangon FIR Bangkok FIR Ha Noi FIR Vientiane FIR Phnom Penh FIR Kuala Lumpur FIR Singapore FIR Jakarta FIR	Category S airspace, high density	EUR/NAT-APAC, previously AR-4, Trans-Asia

AR3	Between Southeast Asia and East Asia	Singapore FIR Jakarta FIR Kuala Lumpur FIR Ho Chi Minh FIR Ha Noi FIR Phnom Penh FIR Vientiane FIR Manila FIR Sanya FIR Hong Kong FIR Taibei FIR Guangzhou FIR Shanghai FIR Fukuoka FIR Incheon FIR	Category S airspace, high density	APAC, previously AR-9, Inter-Asia
AR4	Between West Asia (Middle East) and Australia	Mumbai FIR Male FIR Colombo FIR Melbourne FIR	Category R airspace, low density	MID – APAC, previously AR-10, Trans-Indian Ocean
AR5	Between Southern Africa and Southeast Asia/Australia	Mumbai FIR Male FIR Colombo FIR Jakarta FIR Kuala Lumpur FIR Singapore FIR Melbourne FIR	Category R airspace, low density	AFI – APAC, previously AR-1, Trans-Indian Ocean
AR6	Between East Asia and North America – North Pacific	Incheon FIR Fukuoka FIR Anchorage Oceanic FIR Oakland Oceanic FIR	Category R and S airspace, high density	APAC – NAM, previously AR-5, Trans-Pacific
AR7	Between East Asia and North America – Central Pacific	Hong Kong FIR Fukuoka FIR Taibei FIR Oakland Oceanic FIR	Category R airspace, low density (except for the portions between China and Republic of Korea/Japan and between Hawaii and the US mainland)	APAC – NAM, previously AR-6, Trans-Pacific
AR8	Between East Asia and Australasia	Fukuoka FIR Hong Kong FIR Taibei FIR Manila FIR Ujung Pandang FIR Port Moresby FIR Brisbane FIR Auckland Oceanic FIR	Category R and S airspace, low density (except for high density flow between China and Philippines	APAC, previously AR-2, Trans-Pacific
AR9	Between Southeast Asia and Australia	Bangkok FIR Ho Chi Minh FIR Ha Noi FIR Jakarta FIR Kuala Lumpur FIR	Category R and S airspace, low density	APAC, Trans-Pacific

		Kota Kinabalu FIR Ujung Pandang FIR Brisbane FIR Melbourne FIR		
AR10	Between Australasia and North America	Brisbane FIR Auckland Oceanic FIR Nadi FIR Tahiti FIR Oakland Oceanic FIR	Category R airspace, low density	APAC – NAM, previously AR-8; note: the Low density between South Pacific and South America previously AR-7 is not considered to be a Major Traffic Flow

CHART GEN II-APAC-1 - HOMOGENEOUS ATM AREAS AND MAJOR TRAFFIC FLOWS IDENTIFIED IN THE ASIA AND PACIFIC REGIONS



APAC ANP, VOLUME II

PART II – AERODROMES / AERODROME OPERATIONS (AOP)

1. INTRODUCTION

1.1 This part of the APAC ANP, Volume II, complements the provisions in ICAO SARPs and PANS related to aerodrome design and operations (AOP). It contains dynamic plan elements related to the assignment of responsibilities to States for the provision of AOP facilities and services within a specified area in accordance with Article 28 of the *Convention on International Civil Aviation* (Doc 7300); and mandatory requirements related to AOP facilities and services to be implemented by States in accordance with regional air navigation agreements. Such agreement indicates a commitment on the part of the State(s) concerned to implement the requirement(s) specified.

2. GENERAL REGIONAL REQUIREMENTS

2.1 **Table AOP II-1** contains the list of facilities and services to be provided by the State concerned at each aerodrome that is listed in **Table AOP I-1** in Volume I. Table AOP II-1 shows the operational requirements at each aerodrome to be considered in planning the facilities and services for safe and efficient aircraft operations.

Visual aids for low visibility aerodrome operations

2.2 At aerodromes where there is a requirement to conduct low visibility operations, the appropriate visual and non-visual aids should be provided.

Non-precision approach aids

2.3 Where required by the topographic and/or environmental situation of an aerodrome, improved track guidance during departure and/or approach by specific non-visual and/or visual aids should be provided even if such aids would not normally be required in accordance with the SARPs.

Reduced runway declared distances for take-off

Note. — In the following operational requirements the term "intersection" is used to cover both intersection and junction concepts.

2.4 The reduced runway declared distances for take-off, as for those used for full runway declared distances, should consist of Take-Off Run Available (TORA), Take-Off Distance Available (TODA) and Accelerate-Stop Distance Available (ASDA).

2.5 The datum-line from which the reduced runway declared distances for take-off should be determined is defined by the intersection of the downwind edge of the specific taxiway with the runway edge. The loss, if any, of runway length due to alignment of the aircraft prior to take-off should be taken into account by the operators for the calculation of the aircraft's take-off weight.

2.6 Intersections used as intermediate take-off positions should be identified by the "taxiway designator" to which the datum-line of the associated reduced runway declared distance for take-off refers.

2.7 At each international aerodrome, specific minima visibility for take-off should be established, regulating the use of intersection take-off positions. These minima should permit the appropriate ATC unit to maintain a permanent surveillance of the ground movement operations, and the flight crews to constantly secure their position on the manoeuvring area, so as to exclude any potential risk of confusion as to the identification of the aircraft and intersections used for take-off. The minima should be consistent with the Surface Movement Guidance and Control System (SMGCS) provided at the aerodrome concerned.

2.8 The provision of marking and lighting aids together with signs should ensure the safe control and guidance of aircraft towards and at take-off intersections appropriate to the minima visibility criteria retained. At the runway holding position of the associated intersection take-off position, such signs should indicate the runway heading and the remaining TORA in metres.

2.9 At aerodromes regularly used by international commercial air transport, take-offs from runway/taxiway intersections may be justified for the following reasons:

a) runway capacity improvement;
b) taxi routes distances reduction;
c) noise alleviation; and
d) air pollution reduction.

2.10 The appropriate authorities should, upon prior consultation with aircraft operators, agree on the selection of suitable intermediate intersection take-off positions along the runway(s). Accordingly, authorities should determine the reduced runway declared distances for take-off associated with each selected intersection take-off position and establish the specific ATC rules and operational procedures/limitations. Such provisions should be published in the State Aeronautical Information Publications (AIP).

Aerodrome capacity management

2.11 As an integral part of the air navigation system, the aerodrome should provide the needed ground infrastructure including, *inter alia*, lighting; taxiways; runway, including exits; aprons and precise surface guidance to improve safety and to maximize aerodrome capacity in all weather conditions. An efficient aerodrome capacity planning and management should include:

a) reduction of runway occupancy time;
b) the capability to safely manoeuvre in all weather conditions whilst maintaining capacity;
c) precise surface guidance to and from a runway required in all conditions; and
d) availability of information on the position (to an appropriate level of accuracy) and intent of all vehicles and aircraft operating on the movement area for the appropriate ATM community members.

2.12 States should ensure that adequate consultation and, where appropriate, cooperation between airport authorities and users/other involved parties are implemented at all international aerodromes to satisfy the provisions of aerodrome capacity assessment and requirement.

2.13 When international aerodromes are reaching designed operational capacity, a better and more efficient utilization of existing runways, taxiways and aprons is required. Runway selection procedures and standard taxi routes at aerodromes should ensure an optimum flow of air traffic with a minimum of delay and a maximum use of available capacity. They should also, if possible, take account of the need to keep taxiing times for arriving and departing aircraft as well as apron occupancy time to a minimum. The Airport Collaborative Decision Making (A-CDM) concept should be implemented to improve airport capacity as early as possible.

Aerodrome capacity assessment and requirement

2.14 The declared capacity/demand condition at aerodromes should be periodically reviewed in terms of a qualitative analysis for each system component and, when applicable, the result of the qualitative assessment upon mutual agreement be used for information.

2.15 The future capacity/demand, based on a forecast for the next five years, should be agreed upon after close cooperation between aerodrome authorities and affected users.

2.16 Operators should consult with aerodrome authorities when future plans indicate a significant increased requirement for capacity resulting in one of the elements reaching a limiting condition.

2.17 Aerodrome capacity should be assessed by aerodrome authorities in consultation with the parties involved for each component (terminal/apron/aircraft operations) using agreed methods and criteria for level of delays.

2.18 Where restrictions in aerodrome capacity are identified, a full range of options for their reduction or removal should be evaluated by the aerodrome authority, in close cooperation with the operators and other involved parties. Such options should include technical/operational/procedural and environmental improvements and facility expansion.

2.19 At many aerodromes, airspace capacity has influence on the aerodrome capacity. If the declared capacity of a specified airspace has influence on aerodrome operations, this should be indicated and action undertaken to reach a capacity in this airspace corresponding to the aerodrome capacity.

2.20 The possibility of overcoming capacity limitations should also take the use of other aerodromes in the vicinity into consideration.

Closure of regular aerodromes

2.21 When a regular aerodrome is to be closed, States should ensure that sufficient alternate aerodromes remain open to provide for the safety and efficiency of aircraft approaching the regular aerodrome that may be required to divert to an alternate.

Scheduling aerodrome maintenance

2.22 States, when planning major aerodrome maintenance work that would affect the regularity of international aircraft operations, should consider the need to notify aircraft operators sufficiently in advance prior to undertaking the scheduled work.

3. SPECIFIC REGIONAL REQUIREMENTS

3.1 None.

Table AOP II-1 – REQUIREMENTS AND CAPACITY ASSESSMENT IN INTERNATIONAL AERODROMES IN THE ASIA AND PACIFIC REGIONS

EXPLANATION OF THE TABLE

Note: Columns 3 to 5 for physical characteristics relate to runways and taxiways. The physical characteristics of taxiways and aprons should be compatible with the aerodrome reference code (Column 3) and appropriate for the runways with which they are related.

Column

1 Name of the city and aerodrome, preceded by the location indicator.

Note 1— When the aerodrome is located on an island and no particular city or town is served by the aerodrome, the name of the island is included instead of a city.

Designation of the aerodrome as:
RS — international scheduled air transport, regular use;
RNS — international non-scheduled air transport, regular use;
AS — international scheduled air transport, alternate use; and
ANS — international non-scheduled air transport, alternate use.

2 Required rescue and firefighting service (RFF). The required level of protection expressed by means of an aerodrome RFF category number, in accordance with Annex 14, Volume I, 9.2.

3 Aerodrome reference code (RC). The aerodrome reference code for aerodrome characteristics expressed in accordance with Annex 14, Volume I, chapter 1. The code letter or number within an element selected for design purposes is related to the critical aeroplane characteristics for which the facilities are provided.

4 Runway Designation numbers

5 Type of each of the runways to be provided. The types of runways, as defined in Annex 14, Volume I, Chapter 1, are:
NINST — non-instrument runway;
NPA — non-precision approach runway;
PA1 — precision approach runway, Category I;
PA2 — precision approach runway, Category II;
PA3 — precision approach runway, Category III.

6 Remarks. Additional information including critical design aircraft selected for determining RC, critical aircraft selected for determining the RFF category and critical aircraft for pavement strength. Only one critical aircraft type is shown if it is used to determine all the above three elements: otherwise different critical aircraft types need to be shown for different elements.

City/Aerodrome/Designation		RFF category	Physical characteristics			Remarks
			RC	RWY No.	RWY type	
1		2	3	4	5	6
AFGHANISTAN						
OAKB	KABUL/Kabul Intl	8	4D	11	NPA	DC 10-30
	RS			29	PAI	
OAKN	KANDAHAR/Kandahar Intl	8	4D	05	NPA	DC10-30
	AS			23	NPA	
AMERICAN SAMOA (United States)						
NSTU	PAGO PAGO/Pago Pago Intl	7	4D	05	PA1	DC8
	RS			23	NINST	
AUSTRALIA						
YPAD	ADELAIDE/Adelaide	8	4E	05	NPA	B747
	RS			23	PA1	
YBAS	ALICE SPRINGS/Alice Springs	7	4E	12	PA1	B747
	AS			30	NPA	
YBBN	BRISBANE/Brisbane	9	4E	01	PA1	B747
	RS			19	PA1	
YBCS	CAIRNS/Cairns	9	4E	15	PA1	B747
	RS			33	NPA	
YPXM	CHRISTMAS I./Christmas I.	4	4C	18	NPA	B727
	RS			36	NPA	
YPCC	COCOS I./Cocos I.	4	4C	15	NPA	B727
	RS			33	NPA	
YPDN	DARWIN/Darwin	8	4E	11	NPA	B747
	RS			29	PA1	
YMHB	HOBART/Hobart	7	4C	12	PA1	B727-200
	RNS			30	NPA	
YMML	MELBOURNE/Melbourne Intl	9	4E	16	PA1	B 747
	RS			34	NPA	
				09	NPA	B747
				27	PA1	
YSNF	NORFOLK I./Norfolk I.	4	4C	11	NPA	B737
	RS			29	NPA	
YPPH	PERTH/Perth Intl	9	4E	06	NPA	B747
	RS			24	PA1	
			4E	03	PA1	B747
				21	PA1	

City/Aerodrome/Designation		RFF category	Physical characteristics			Remarks
			RC	RWY No.	RWY type	
1		2	3	4	5	6
YPPD	PORT HEDLAND/Port Hedland	5	4C	14	NPA	B737
	RNS			32	NPA	
YBRK	ROCKHAMPTON/Rockhampton	6	4C	15	NPA	B737
	AS			33	NPA	
YSSY	SYDNEY/Kingsford Smith Intl	9	4E	16	PA1	B747
	RS			34	PA1	
			4E	07	PA1	B747
				25	PA1	
YPTN	TINDAL/Tindal	7	4E	14	PA1	B747
	AS			32	NPA	
YBTL	TOWNSVILLE/Townsville	7	4E	01	PA1	B747-SP
	RNS			19	NPA	
BANGLADESH						
VGEG	CHITTAGONG/Shah Amanat Intl	6	4C	05	NPA	B737-200
	RS			23	NPA	
VGHS	DHAKA/Hazrat Shahjalal Intl	8	4E	14	PA1	B747
	RS			32	NPA	
BHUTAN						
VQPR	PARO/Paro Intl		3C	15	NPA	A319-115
	RS	6		33	NPA	
BRUNEI DARUSSALAM						
WBSB	BRUNEI/Brunei Intl	9	4E	03	NPA	B747
	RS			21	PA1	
CAMBODIA						
VDPP	PHNOM PENH/Phnom Penh	8	4D	05	NPA	DC-10
	RS			23	PA1	
VDSR	SIEM REAP/Siem Reap	8	4D	05	NPA	IL 62
	AS			23	NPA	
CANADA[1]						
CYXX	ABBOTSFORD/Abbotsford	7	4E	07	PA1	B747
	AS			25	NINSX	
CYYC	CALGARY/Calgary Intl	8	4E	16	PA1	B747
	AS			34	PA1	
			4E	10	NPA	
				28	PA1	B747

City/Aerodrome/Designation		RFF category	Physical characteristics			Remarks
			RC	RWY No.	RWY type	
1		2	3	4	5	6
CYQQ	COMOX/Comox	8	4E	11	NPA	B747
	AS			29	NINSX	
CYEG	EDMONTON/Edmonton Intl	8	4E	02	PA1	B747
	RS			20	NPA	
			4E	12	PA1	B747
				30	PA1	
CYVR	VANCOUVER/Vancouver Intl	9	4E	08R	PA2	B747
	RS			26L	PA1	
			4E	08L	PA3	B747
				26R	PA3	
CYYJ	VICTORIA/Victoria Intl	6	4D	09	PA1	DC-68
	RNS			27	PA1	
CHINA						
ZBAA	BEIJING/Capital	9	4E	18R	PA1	B747
	RS			36L	PA1	
			4E	18L	PA1	B747
				36R	PA2	
ZGHA	CHANGSHA/Huanghua	7	4D	18	NPA	MD82
	RS			36	PA1	
ZUUU	CHENGDU/Shuangliu	7	4E	02	PA1	B747
	AS			20	PA1	
ZUCK	CHONGQING/Jiangbei	7	4E	02	PA1	DC10
	RS			20	PA1	
ZYTL	DALIAN/Zhoushuizi	8	4E	10	PA1	B747
	RS			28	PA1	
ZSFZ	FUZHOU/Changle	8	4E	03	PA1	B747
	RS			21	PA1	
RCKH	GAOXIONG/Gaoxiong	9	4E	09L	PA1	B747
	RS			27R	PA1	
ZGGG	GUANGZHOU/Baiyun	9	4E	02R	PA1	B747-400
	RS			20L	PA1	
				02L	PA1	B747-400
				20R	PA1	
ZGKL	GUILIN/Liangjiang	8	4D	01	PA1	B747
	RS			19	PA1	
ZSHC	HANGZHOU/Xiaoshen	7	4D	07	PA1	A300
	RS			25	NPA	

City/Aerodrome/Designation		RFF category	Physical characteristics			Remarks
			RC	RWY No.	RWY type	
1		2	3	4	5	6
ZYHB	HARBIN/Taiping	6	4D	05	PA1	A300
	RS			23	PA1	
ZSOF	HEFEI/Luogang	5	4D	14	PA1	B767
	AS			32	NPA	
ZBHH	HOHHOT/Baita	5	4D	08	PA1	B737
	RS			26	NPA	
ZSJN	JINAN/Yaoqiang	6	4D	01	PA1	A300
	RS			19	NPA	
ZWSH	KASHI/Kashi	6	4D	08	NPA	A300
	AS			26	PA1	
ZPPP	KUNMING/Wujiaba	7	4E	03	PA1	B747
	RS			21	PA1	
ZLLL	LANZHOU/Zhongchuan	7	4D	18	NPA	B747
	AS			36	PA1	
ZSNJ	NANJING/Lukou	8	4E	06	PA1	B747
	RS			24	PA1	
ZGNN	NANNING/Wuxu	5	4D	05	PA1	A300
	AS			23	NPA	
ZSQD	QINGDAO/Liuting	5	4D	17	PA1	A300
	RS			35	PA1	
ZJSY	SANYA/Phoenix	8	4E	08	PA1	B747
	RS			26	NPA	
ZSSS	SHANGHAI/Hongqiao	9	4E	18	PA1	B747
	RS			36	PA1	
ZSPD	SHANGHAI/Pudong	9	4E	17	PA1	B747
	RS			35	PA1	
ZYTX	SHENYANG/Taoxian	7	4E	06	PA1	B747
	RS			24	PA1	
ZGSZ	SHENZHEN/Bao'an	7	4E	15	PA1	B747
	RS			33	PA1	
RCSS	TAIBEI/Songshan	9	4E	10	PA1	B747
	AS			28	PA1	
RCTP	TAIBEI CITY/Taibei Intl	9	4E	05L	PA2	B747
	RS			23R	PA2	

City/Aerodrome/Designation		RFF category	Physical characteristics			Remarks
			RC	RWY No.	RWY type	
1		2	3	4	5	6
				05R	PA1	B747
				23L	PA1	
				06	PA1	B747
				24	PA1	
ZBYN	TAIYUAN/Wusu	7	4D	13	PA1	A300
	AS			31	PA1	
ZBTJ	TIANJIN/Binhai	7	4D	16	PA1	A300
	RS			34	PA1	
ZWWW	URUMQI/Diwopu	7	4D	07	PA1	A300
	RS			25	PA1	
ZHHH	WUHAN/Tianhe	7	4E	04	PA1	B747
	RNS			22	PA1	
ZSAM	XIAMEN/Gaoqi	7	4E	05	PA1	B767
	RS			23	NPA	
ZLXY	XI'AN/Xianyang	6	4E	05	PA1	A300
	RS			23	PA1	
ZUXC	XICHANG/Qingshan	6	4D	18	NPA	B767
	RNS			36	PA1	
COOK IS.						
NCRG	RAROTONGA/Rarotonga Intl	7	4D	08	NPA	DC 10-30
	RS			26	NPA	
DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA						
ZKWS	KALMA/Kalma	8	4E	15	NPA	B747-400
	RNS			33	NPA	
ZKPY	PYONGYANG/Sunan	9	4D	17	PA1	B747-400
	RS			35	PA1	
FIJI						
NFFN	NADI/Nadi Intl	8	4E	03	PA1	B747
	RS			21	NINST	
				09	NINST	B737-200
				27	NINST	
NFSU	SUVA/Nausori	5	4C	10	NPA	B737-200
	RS			28	NPA	
FRENCH POLYNESIA (France)						
NTAA	TAHITI/Faaa	9	4E	04	PA1	B747
	RS			22	NPA	

City/Aerodrome/Designation		RFF category	Physical characteristics			Remarks
			RC	RWY No.	RWY type	
1		2	3	4	5	6
GUAM (United States)						
PGUA	GUAM I./Andersen AFB	8	4E	06R	PA1	B747
	AS			24L	NPA	
PGUM	GUAM I./Guam Intl	8	4E	06L	PA1	B747
	RS			24R	NPA	
HONG KONG, China						
VHHH	HONG KONG/Hong Kong Intl	10	4F	07R	PA2	A380
	RS			25L	PA2	
				07L	PA2	A380
				25R	PA3	
INDIA						
VAAH	AHMEDABAD/Sardar VallabhBhai Patel International Airport	9	4E	05	NPA	B747-400
	RS			23	PA1	
VIAR	AMRITSAR/Amritsar Airport	9	4E	16	NPA	B747-400
	RS			34	PA1	
VOBL	BANGALORE/Bangalore International Airport	9	4E	09	PAI	B747-400
	RS			27	PAI	
VOCL	CALICUT/Calicut Airport		4D	10	NPA	A300-600
	RS	8		28	PAI	
VOMM	CHENNAI/Chennai Airport		4E	07	PA1	B747-400
	RS	9		25	PAI	
			4C	12	NPA	A320-200
				30	NPA	
VOCI	COCHIN/Cochin Airport	9	4E	09	NPA	B747-400
	RS			27	PAI	
VOCB	COIMBATORE/Coimbatore Airport	7	4C	05	NPA	A321
	RS			23	PAI	
VIDP	DELHI/Indira Gandhi Intl Airport	9	4E	10	PAI	B747-400
	RS			28	PA3	
			4E	09	NPA	B747-400
				27	PAI	
			4E	11	PA3	B747-400
				29	PA3	
VEGY	GAYA/Gaya Airport	6	4C	10	NPA	A320-200
	RS			28	PAI	
VEGT	GUWAHATI/Lokpriya Gopinath Bordolai International Airport	7	4D	02	PAI	A300-600
	RS			20	NPA	

City/Aerodrome/Designation		RFF category	Physical characteristics			Remarks
			RC	RWY No.	RWY type	
1		2	3	4	5	6
VOHS	HYDERABAD/Rajiv Gandhi International Airport	9	4F	09	PAI	B747-400
	RS			27	PAI	
VIJP	JAIPUR/Jaipur Airport	7	4D	09	NPA	A300-600
	RS			27	PAI	
VECC	KOLKATA/Netaji Subhash Chandra Bose International Airport	9	4E	01R	PAI	B747-400
	RS			19L	PA2	
			4E	01L	NPA	B747-400
				19R	NPA	
VILK	LUCKNOW/ Chaudhry Charan singh Airport	7	4D	09	NPA	B767-400
	RS			27	PAI	
VOML	MANGALORE/ Mangalore Airport	7	4D	06	NPA	A310-300
	RS			24	PAI	
VABB	MUMBAI/Chatrapati Shivaji International Airport	9	4E	09	PAI	B747-400
	RS			27	PA1	
			4E	14	PAI	B747-400
				32	NPA	
VANP	NAGPUR/Dr Ambedkar Airport	8	4E	14	NPA	B747-400
	RS			32	PA1	
VEPT	PATNA/Patna Airport	7	4C	07	NPA	A320-200
	RS			25	PAI	
VOTV	THIRUVANANTHAPURAM/ Thiruvananthapuram Airport	9	4E	14	NPA	B747-400
	RS			32	PA1	
VOTR	TIRUCHCHIRAPPALLI/Tiruchchirappalli Airport	7	4C	09	NPA	A320-200
	RS			27	PAI	
VIBN	VARANASI/Lal Bahadur Shastri Airport	6	4C	09	NPA	A320-200
	RS			27	PAI	
INDONESIA						
WAPP	AMBON/Pattimura	7	4C	04	PA1	B737
	RNS			22	NINST	
WADD	BALI/Ngurah Rai	9	4E	09	NPA	B747
	RS			27	PA1	
WALL	BALIKPAPAN/Sepinggan	7	4D	07	NPA	B767
	RS			25	PA1	
WAOO	BANJARMASIN/Syamsudin Noor	7	4C	10	PA1	B737
	AS			28	NINST	

City/Aerodrome/Designation		RFF category	Physical characteristics			Remarks
			RC	RWY No.	RWY type	
1		2	3	4	5	6
WIDD	BATAM/Hang Nadim	9	4E	04	PA1	B747
	RS			22	NPA	
WABB	BIAK/Frans Kaisiepo	7	4E	11	PA1	B747
	RS			29	NINST	
WIHH	JAKARTA/HalimPerdana Kusuma	9	4E	06	NPA	B747
	RNS			24	PA1	
WIII	JAKARTA/Soekarno Hatta	9	4E	07L	PA1	B747
	RS			25R	PA1	
			4E	07R	PA1	B747
				25L	PA1	
WAJJ	JAYAPURA/Sentani	7	4C	12	NINST	B737
	RS			30	PA1	
WATT	KUPANG/El Tari	6	4D	07	NPA	B767
	RS			25	NPA	
WAAA	MAKASSAR/Sultan Hasanuddin	8	4E	13	PA1	B777
	RS			31	NPA	
				03	PA1	B777
				21	PA1	
WAMM	MANADO/Sam Ratulangi	7	4E	18	PA1	A330
	RS			36	PA1	
WIMM	MEDAN/Kualanamu	9	4F	05	PA1	A380
	RS			23	PA1	
WAKK	MERAUKE/Mopah	6	4C	16	NPA	B737
	RNS			34	NINST	
WIPT	PADANG/Minangkabau	9	4E	15	NPA	A330
	RS			33	PA1	
WIPP	PALEMBANG/Sultan Mahmud Badaruddin II	7	4D	11	NPA	B767
	RS			29	PA1	
WIBB	PEKANBARU/Sultan Syarif Kasim II	7	4C	18	NPA	B737
	RS			36	PA1	
WIOO	PONTIANAK/Supadio	7	4C	15	PA1	B737
	RS			33	NPA	
WARR	SURABAYA/Juanda	8	4E	10	PA1	B747
	RS			28	NPA	

City/Aerodrome/Designation		RFF category	Physical characteristics			Remarks
			RC	RWY No.	RWY type	
1		2	3	4	5	6
WIDN	TANJUNG PINANG/Raja Haji Fisabilillah	6	4C	04	NPA	B737
	RNS			22	NINST	
WALR	TARAKAN/Juwata	7	4C	06	PA1	B737
	RNS			24	NINST	
JAPAN						
RJFF	FUKUOKA/Fukuoka	9	4E	16	PA1	B747-200
	RS			34	PA1	
RJCH	HAKODATE/Hakodate	9	4E	12	PA1	B747-400
	RS			30	NPA	
RJOA	HIROSHIMA/Hiroshima	9	4E	10	PA3	B747-400
	RS			28	NPA	
RJFK	KAGOSHIMA/Kagoshima	9	4E	16	NPA	B747-400
	RS			34	PA1	
RJBB	KANSAI/Kansai Intl	10	4E	06R	PA2	B747-400
	RS			24L	PA2	
			4F	06L	PA2	A380
				24R	PA2	
RJFT	KUMAMOTO/Kumamoto	9	4E	07	PA3	B747-200
	RS			25	NPA	
RJFU	NAGASAKI/Nagasaki	9	4E	14	NPA	B747-400
	RS			32	PA1	
RJGG	NAGOYA/Chubu Centrair Intl.	9	4F	18	PA2	A380
	RS			36	PA2	
ROAH	NAHA/Naha	9	4E	18	NPA	B747-400
	RS			36	PA1	
RJSN	NIIGATA/Niigata	9	4E	10	NPA	B747-200
	RS			28	PA1	
RJFO	OITA/Oita	8	4E	01	PA1	B747-400
	RS			19	NPA	
RJOB	OKAYAMA/Okayama	9	4E	07	PA1	B747-400
	RS			25	NPA	
RJOO	OSAKA/Osaka Intl	9	4E	14R	NPA	B747-400
	AS			32L	PA1	
RJCC	SAPPORO/New Chitose	9	4E	01L	PA1	B747-400
	RS			19R	PA3	

City/Aerodrome/Designation		RFF category	Physical characteristics			Remarks
			RC	RWY No.	RWY type	
1		2	3	4	5	6
				01R	PA1	B747-400
				19L	NPA	
RJSS	SENDAI/Sendai	9	4E	09	NPA	B747-400
	RS			27	PA1	
RJOT	TAKAMATSU/Takamatsu	9	4E	08	NPA	B747-400
	RS			26	PA1	
RJAA	TOKYO/Narita Intl	10	4E	16R	PA3	A380
	RS		4F	34L	PA1	
			4E	16L	PA1	B777-300
				34R	PA1	
RJTT	TOKYO/Tokyo Intl	10	4E	16L	NPA	B747-400
	RS			34R	PA2	
			4E	04	NPA	B747-400
				22	PA1	
			4E	16R	NPA	B747-400
				34L	PA1	
			4E	05	NPA	B777-300
				23	PA1	
JOHNSTON I. (United States)						
PJON	JOHNSTON ATOLL/Johnston I	7	4C	05	NPA	B727
	RS			23	NPA	
KIRIBATI						
PLCH	KIRITIMATI I./Christmas I.	6	4C	08	NPA	B727
	RS			26	NPA	
NGTA	TARAWA/Bonriki Intl	6	4C	09	NPA	B727-100
	RS			27	NPA	
LAO PEOPLE'S DEMOCRATIC REPUBLIC						
VLVT	VIENTIANE/Wattay	8	4D	14	PA1	EA 30
	RS			32	NPA	
MACAO, CHINA						
VMMC	MACAO/Macao Intl	9	4E	16	NPA	B747-400
	RS			34	PA2	
MALAYSIA						
WMKJ	JOHOR BAHRU/Sultan Ismail International	9	4E	16	PA1	B747
	RS			34	NPA	
WBKK	KOTA KINABALU/Kota Kinabalu Intl	9	4E	02	PA1	B747
	RS			20	PA1	

City/Aerodrome/Designation		RFF category	Physical characteristics			Remarks
			RC	RWY No.	RWY type	
1		2	3	4	5	6
WBGG	KUCHING/Kuching International	9	4E	07	NPA	B747
	RS			25	PA1	
WMKP	PENANG/Penang Intl	9	4E	04	PA1	B747
	RS			22	NPA	
WMKL	PULAU LANGKAWI/Pulau Langkawi	8	4E	03	PA1	B747
	RS			21		
WMKK	SEPANG/KL Intl	10	4F	14L	PA1	A380
	RS			32R	PA1	
				14R	PA1	A380
				32L	PA1	
MALDIVES						
VRMG	GAN/Gan Intl Airport	8	4E	10	NPA	B777
	RS			28	NPA	
VRMH	HANIMAADHOO/Hanimaadhoo Intl Airport	4	2C	03	NPA	DHC-8 (Dash8)
	RS			21	NPA	
VRMM	MALE/Velana Intl Airport	9	4E	18	NPA	B777
	RS			36	PA1	
MARSHALL IS.						
PKMJ	MAJURO ATOLL/Marshall I. Intl	6	4C	07	NPA	B727-100
	RS			25	NPA	
MICRONESIA (FEDERATED STATES OF)						
PTPN	POHNPEI I./Pohnpei Intl	6	4C	09	NPA	B727-100
	RS			27	NPA	
PTKK	WENO I./FM Chuuk Intl	6	4C	04	NINST	B727-100
	RS			22	NINST	
PTYA	YAP I./Yap Intl	6	4C	07	NPA	B727-100
	RS			25	NPA	
MONGOLIA						
ZMUB	ULAANBAATAR/Ulaanbaatar	7	4D	14	PA1	B767-300
	RS			32	NPA	
MYANMAR						
VYMD	Mandalay/Mandalay Intl	9	4E	17	PA1	B 747-400
	RS			35	NPA	

City/Aerodrome/Designation		RFF category	Physical characteristics			Remarks
			RC	RWY No.	RWY type	
1		2	3	4	5	6
VYNT	Naypyitaw/Naypyitaw Intl	7	4E	16	PA1	B 747-400 for RC and Pavement Strength, B 737-800 / A 320 for RFF
	RS			34	NPA	
VYYY	YANGON/Yangon Intl	9	4E	03	NPA	B 747-200
	RS			21	PA1	
NAURU						
AUUU	NAURU I./Nauru I.	6	4C	12	NPA	B727-100
	RS			30	NPA	
NEPAL						
VNKT	KATHMANDU/Kathmandu	7	4D	02	NPA	EA30
	RS			20	NINST	
NEW CALEDONIA (France)						
NWWW	NOUMEA/La Tontouta	8	4E	11	PA1	A330-200
	RS			29	NPA	
NEW ZEALAND						
NZAA	AUCKLAND/Auckland Intl	9	4E	05	PA1	B747
	RS			23	PA1	
NZCH	CHRISTCHURCH/Christchurch Intl	9	4E	02	PA1	B747
	RS			20	PA1	
NZWN	WELLINGTON/Wellington Intl	9	4E	16	NPA	B747 SP
	RS			34	NPA	
NIUE (New Zealand)						
NIUE	NIUE/ Hanan Intl	6	4C	10	NPA	B737-200
	RS			28	NINST	
NORTHERN MARIANA IS. (United States)						
PGSN	OBYAN/Saipan Intl	8	4E	07	PA1	B747
	RS			25	NPA	
PGRO	ROTA I/Rota Intl	5	4C	09	NPA	B737
	RS			27	NPA	
PAKISTAN						
OPFA	FAISALABAD/Faisalabad Intl	8	4D	03	PAI	A310
	RS			21	NPA	
OPGD	GWADAR/Gwadar Intl	4	3C	06	NPA	ATR72
	RS			24	NPA	

City/Aerodrome/Designation		RFF category	Physical characteristics			Remarks
			RC	RWY No.	RWY type	
1		2	3	4	5	6
OPRN	ISLAMABAD/Benazir Bhutto intl	9	4E	12	NPA	B747
	RS			30	PA1	
OPIS	ISLAMABAD/Islamabad Intl	10	4E	10L	NPA	B747
	RS			28R	PA1	
			4F	10R	PA1	A380
				28L	PA2	
OPKC	KARACHI/Jinnah Intl	9	4E	07L	NPA	A310
	RS			25R	PA1	
			4E	07R	NPA	B747
				25L	PA1	
OPLA	LAHORE/Allama Iqbal Intl	9	4E	18L	NPA	B747
	RS			36R	PA3B	
			4E	18R	NPA	EA 30
				36L	PA1	
OPMT	MULTAN/Multan Intl	9	4E	36	PAI	B747
	RS			18	NPA	
OPNH	NAWABSHAH/Nawabshah	9	4E	02	NPA	B747
	AS			20	NPA	
OPPS	PESHAWAR/Bacha Khan Intl	9	4D	17	NPA	B777
	RS			35	PA1	
OPQT	QUETTA/Quetta Intl	9	4D	13L	PAI	A310
	RS			31R	NINST	
PALAU						
PTRO	BABELTHAUP I./Koror	6	4C		NPA	B727
	RS				NINST	
PAPUA NEW GUINEA						
AYPY	PORT MORESBY/Port Moresby	7	4E	14L	PA1	B747
	RS			32R	PA1	
AYVN	VANIMO/Vanimo	5	3C	13	NINST	FK27
	RS			31	NINST	
PHILIPPINES						
RPMD	DAVAO/Francisco Bangoy Intl	9	4E	05	PA1	B747-400
	RNS			23	PA1	
RPVI	ILOILO/Iloilo Intl	8	4C	02	NPA	A321
	RS			20	PA1	
RPVK	KALIBO, AKLAN/Kalibo Intl	7	4C	05	NPA	A320
	RS			23	NPA	

City/Aerodrome/Designation		RFF category	Physical characteristics			Remarks
			RC	RWY No.	RWY type	
1		2	3	4	5	6
RPLI	LAOAG/Laoag Intl	7	4C	01	NPA	A320
	AS			19	NPA	
RPVM	LAPU-LAPU/Mactan Cebu	9	4E	04	PA1	B747-400
	RS			22	PA1	
RPLL	MANILA/Ninoy Aquino Intl	9	4F	06	PA1	B747-400
	RS			24	PA1	
RPLC	PAMPANGA/Diosdado Macapagal Intl	9	4E	02	PA1	B747-400
	RS			20	PA1	
RPVP	PUERTO PRINCESA CITY/Puerto Princesa Intl	9	4E	09	NINST	A330
	RS			27	NPA	
REPUBLIC OF KOREA						
RKTU	CHEONGJU/Cheongju intl	8	4E	06L	PA1	B747-400
	RS			24R	PA1	
RKTN	DAEGU/Daegu Intl	7	4D	31R	PA1	A300-600
	RS			13L	NPA	
RKPK	GIMHAE/Gimhae Intl	9	4E	18L	NPA	B747-400
	RS			36R	PA1	
			4E	18R	NPA	
				36L	PA1	
RKSS	GIMPO/Gimpo Intl	10	4E	14L	PA1	B747-400
	ANS			32R	PA1	
			4E	14R	PA3	B747-400
				32L	PA1	
RKSI	INCHEON/Incheon Intl	10	4F	15R	PA3	A380
	RS			33L	PA3	
			4F	15L	PA3	A380
				33R	PA3	
			4F	16	PA3	A380
				34	PA3	
RKPC	JEJU/Jeju Intl	9	4E	07	PA2	B747-400
	RS			25	PA1	
				13	NPA	B737
			4C	31	NPA	
RKJB	MUAN/Muan Intl	9	4E	01	PA1	B747-400
	RS			19	PA1	
RKNY	YANGYANG/Yangyang Intl	7	4D	33	PA1	A300-600
	RS			15	NPA	

City/Aerodrome/Designation		RFF category	Physical characteristics			Remarks
			RC	RWY No.	RWY type	
1		2	3	4	5	6
SAMOA						
NSFA	Faleolo/Faleolo Intl	8	4D	08	NPA	B767
	RS			26	NINST	
SINGAPORE						
WSAP	PAYA LEBAR/Paya Lebar (RSAF)	9	4E	02	PA1	B747
	AS			20	PA1	
WSSL	SELETAR/Seletar	7	3C	03	NINST	B737
	RS			21	NINST	
WSSS	SINGAPORE/Changi	10	4F	02L	PA2	A380
	RS			20R	PA1	B777-300ER
			4F	02C	PA1	A380
				20C	PA2	B777-300ER
SOLOMON IS.						
AGGH	HONIARA/Henderson	6	4C	06	NINST	B737-200
	RS			24	NPA	
SRI LANKA						
VCBI	COLOMBO/Bandaranaike Intl	9	4E	04	PA1	B747
	RS			22	PA1	
VCRI	MATTALA/ Mattala Rajapaksa Intl	10	4F	05	NPA	A380
	RS			23	PAI	
THAILAND						
VTBD	BANGKOK/Don Mueang Intl	9	4E	03L	NPA	B747
	RS			21R	PA2	
			4E	03R	NPA	B747
				21L	PA1	
VTBS	BANGKOK/ Suvarnabhumi Intl	10	4F	01L	PA2	A380
	RS			19R	PA2	
			4F	01R	PA2	A380
				19L	PA2	
VTCC	CHIANG MAI/Chiang Mai Intl	9	4E	18	NPA	B747
	RS			36	PA1	
VTCT	CHIANG RAI/Mae Fah Luang-Chiang Rai Intl	8	4E	03	PA1	B747
	RS			21	NPA	
VTSG	KRABI/Krabi	7	4E	32	PA1	B747
	RS			14	NPA	
VTSP	PHUKET/Phuket Intl	9	4E	09	NPA	B747
	RS			27	PA1	

City/Aerodrome/Designation		RFF category	Physical characteristics			Remarks
			RC	RWY No.	RWY type	
1		2	3	4	5	6
VTPH	PRACHUAP KHIRI KHAN/Hua Hin	6	4C	16	NPA	A320
	RS			34	NPA	
VTBU	RAYONG/U-Tapao Rayong Pattaya Intl	8	4E	18	PA1	B747
	RS			36	NPA	
VTSS	SONGKHLA/Hat Yai Intl	7	4E	08	NPA	B747
	RS			26	PA1	
VTSM	SURAT THANI/Samui	6	4C	17	NPA	A319
	RS			35	NPA	
VTSB	SURAT THANI/Surat Thani	7	4D	04	NPA	A300
	RS			22	PA1	
TONGA						
NFTF	FUA'AMOTU/Fua'amotu Intl	6	4C	11	NPA	B737-200
	RS			29	NPA	
NFTV	VAVA'U/Vava'u	4	2B	08	NINST	CS12
	RS			26	NINST	
TUVALU						
NGFU	FUNAFUTI/Funafuti Intl	4	3C	03	NINST	HS74
	RS			21	NINST	
UNITED STATES[1]						
PANC	ANCHORAGE/Anchorage Intl	9	4E	06R	PA3	B747
	RS			24L	NPA	
			4E	14	NINST	B747
				32	NINST	
PAED	ANCHORAGE/Elemendorf AFB	9	4E	05	PA1	B747
	AS			23	NINST	
PACD	COLD BAY/Cold Bay	7	4D	14	PA1	B757
	AS			32	NPA	
KPAE	EVERETT/Snohomish County-Paine Field	8	4E	16R	PA1	B747
	AS			34L	NINST	
PAEI	FAIRBANKS/Eielson AFB	9	4E	13	PA1	B747
	AS			31	PA1	
PAFA	FAIRBANKS/Fairbanks Intl	8	4E	01L	PA3	B747
	RS			19R	PA1	
KFAT	FRESNO/Fresno Air Terminal	7	4D	11L	NPA	B757
	AS			29R	PA1	

City/Aerodrome/Designation		RFF category	Physical characteristics			Remarks
			RC	RWY No.	RWY type	
1		2	3	4	5	6
PHTO	HILO/Hilo Intl	8	4E	08	NPA	B747
	AS			26	PA1	
PHNL	HONOLULU/Oahu Intl	9	4E	08L	PA1	B747
	RS			26R	NINST	
			4E	04R	PA1	B747
				22L	NINST	
			4E	08R	NINST	B747
				26L	NPA	
PHOG	KAHULUI/Kahului	8	4D	02	PA1	DC10
	AS			20	NPA	
PAKN	KING SALMON/King Salmon	8	4E	11	PA1	B747
	AS			29	NPA	
KLAX	LOS ANGELES/Los Angeles Intl	9	4E	07R	PA1	B747
	RS			25L	PA2	
			4E	07L	PA1	B747
				25R	PA2	
			4E	06L	PA1	B747
				24R	PA3	
				06R	PA1	B747
				24L	PA1	
KOAK	OAKLAND/Metropolitan Oakland	9	4E	11	PA1	B747
	AS			29	PA2	
KONT	ONTARIO/Ontario Intl	8	4E	08L	PA1	B747
	AS			26R	PA1	
KPMD	PALMDALE/Palmdale P.F.T.I.	8	4E	07	NINST	B747
	AS			25	PA1	
KPDX	PORTLAND/Portland Intl	9	4E	10R	PA3	B747
	AS			28L	NPA	
			4E	10L	NPA	B747
				28R	PA1	
KSMF	SACRAMENTO/Metropolitan	7	4D	16R	PA2	DC10
	AS			34L	NPA	
KSAN	SAN DIEGO/San Diego (AFSS)	8	4E	09	PA1	B747
	AS			27	NPA	
KSFO	SAN FRANCISCO/San Francisco Intl	9	4E	10R	NINST	B747
	RS			28L	PA1	
			4D	01R	NINST	B747
				19L	PA1	
			4E	10L	NINST	B747

City/Aerodrome/Designation		RFF category	Physical characteristics			Remarks
			RC	RWY No.	RWY type	
1		2	3	4	5	6
				28R	PA3	
			4E	01L	NINST	B747
				19R	NINST	
KSJC	SAN JOSE/San Jose Intl	7	4D	12R	PA1	DC10
	RS			30L	PA1	
KBFI	SEATTLE BOEING FIELD/King County Intl	8	4E	13R	PA1	B747
	AS			31L	NPA	
KSEA	SEATTLE/Seattle-Tacoma Intl	9	4E	16R	PA3	B747
	RS			34L	PA1	
			4E	16L	NPA	B747
				34R	PA1	
KGEG	SPOKANE/Spokane Intl	7	4E	03	PA1	B747
	AS			21	PA2	
KSCK	STOCKTON/Metropolitan	8	4E	11L	NINST	B747
	AS			29R	PA1	
KIAD	WASHINGTON/Dulles Intl	9	4E	01L	NPA	B747
	RS			19R	PA1	
			4D	01R	PA2	B707-300B
				19L	NPA	
VANUATU						
NVVV	PORT-VILA/Bauerfield	6	4C	11	NPA	B737-200
	RS			29	NINST	
NVSS	SANTO/Pekoa	3	2B	12	NPA	SW4
	RS			30	NINST	
VIET NAM						
VVCT	CAN THO/Can Tho	8	4E	06	PA1	B777-200
	RS			24	NPA	
VVDN	DA NANG/Da Nang	9	4E	17L	NPA	B777-200
	RS			35R	PA1	
				17R	NPA	B747-400
				35L	PA1	
VVNB	HA NOI/Noi Bai	9	4E	11L	PA1	B747-400
	RS			29 R	NPA	
			4E	11R	PA2	B747-400 B787-9 A350-900
				29L	PA1	
VVCI	HAI PHONG/Cat Bi	8	4E	07	PA1	B777-200
	RS			25	NPA	

City/Aerodrome/Designation		RFF category	Physical characteristics			Remarks
			RC	RWY No.	RWY type	
1		2	3	4	5	6
VVTS	HO CHI MINH/Tan Son Nhat	9	4E	07R	PA1	B747-400
	RS			25L	PA1	A350-900, B787-9
			4E	07L	NPA	B747-400
				25R	PA1	
VVPB	HUE/Phu Bai	7	4C	09	NINST	B737-300
	RS			27	PA1	
VVCR	KHANH HOA/Cam Ranh	8	4E	02L	PA1	B777-200
	RS			20R	NPA	
				02R	PA1	B777-200
				20L	PA1	
VVPQ	KIEN GIANG/Phu Quoc	9	4E	10	PA1	B747-400
	RS			28	PA1	
VVVD	QUANG NINH/Van Don	9	4E	03	PA1	B787/A350
	RS			21	NPA	
WALLIS and FUTUNA IS. (France)						
NLWW	WALLIS/Hihifo	6	4C	08	NPA	B737
	RS			26	NPA	

Note 1 — Outside ASIA/PAC Indicated for coordination

APAC ANP, VOLUME II

PART III – COMMUNICATIONS, NAVIGATION AND SURVEILLANCE (CNS)

1. INTRODUCTION

1.1 This part of the APAC ANP, Volume II, complements the provisions in ICAO SARPs and PANS related to Communication, Navigation and Surveillance (CNS). It contains dynamic plan elements related to the assignment of responsibilities to States for the provision of CNS facilities and services within a specified area in accordance with Article 28 of the *Convention on International Civil Aviation* (Doc 7300) and mandatory requirements related to CNS facilities and services to be implemented by States in accordance with regional air navigation agreements. Such agreement indicates a commitment on the part of the State(s) concerned to implement the requirement(s) specified.

2. GENERAL REGIONAL REQUIREMENTS

Communications

Aeronautical Fixed Service (AFS)

2.1 The aeronautical fixed service should comprise the following systems and applications that are used for ground-ground (i.e. point-to-point and/or point-to-multipoint) communications in the international aeronautical telecommunication service:

a) ATS direct speech circuits and networks;
b) meteorological operational circuits, networks and broadcast systems, including World Area Forecast System – Internet File Service (WIFS) and/or Satellite Distribution System for Information Relating to Air Navigation (SADIS);
c) the Aeronautical Fixed Telecommunications Network (AFTN);
d) the Common ICAO Data Interchange Network (CIDIN);
e) the Air Traffic Services (ATS) Message Handling Services (AMHS); and
f) the Inter-Centre Communications (ICC).

2.2 To meet the data communication requirements, a uniform high-grade aeronautical network should be provided, based on the Aeronautical Telecommunication Network (ATN), taking into account the existence and continuation of current networks.

2.3 Contingency procedures should be in place to ensure that, in case of a communication centre breakdown, all the parties concerned are promptly informed of the prevailing situation. All possible arrangements should be made to ensure that, in case of breakdown of a communications centre or circuit, at least high-priority traffic continues to be handled by appropriate means.

2.4 AFS planning should permit flexibility in detailed development and implementation. The required AFTN Stations and Centres are listed in the AFTN Plan in **Table CNS II-1**.

The Aeronautical Telecommunication Network (ATN)

2.5 The ATN should be able to:

a) support applications carried by the existing networks;
b) support gateways enabling inter-operation with existing networks; and
c) support ground-ground communications traffic associated with air-ground data link applications.

2.6 The ATN should make optimum use of dedicated bilateral/multilateral aeronautical links and other communication means commensurate with the operational Quality of Service (QoS) requirements.

2.7 The implementation of the ATN should take into account the need for cost-effective evolution in terms of network capacity, requirements and time-frame and allow for a progressive transition from existing communication networks and services to a uniform, harmonised and integrated communications infrastructure, capable of supporting the implementation of future aeronautical services such as Flight and Flow Information in a Collaborative Environment (F-FICE), System-Wide Information Management (SWIM) applications, etc.

2.8 In case means other than dedicated bilateral links are used by the ATN, States should ensure that Service Level Agreements (SLA) are met in terms of implementation priority, high availability, priority in restoration of service and appropriate levels of security.

2.9 The ATN should provide for interregional connections to support data exchange and mobile routing within the global ATN.

2.10 In planning the ATN, provisions should be made, where required, for interfacing with other international networks. The required ATN Infrastructure Routing Plan is described under **Table CNS II-2**.

Network services

2.11 The Internet Society (ISOC) communications standards for the Internet Protocol Suite (IPS) should be used for the implementation of AMHS.

2.12 The migration from legacy bit-oriented protocols such as X.25 Protocol suite to IPS should be planned.

2.13 The migration of international or sub-regional ground networks to the ATN based on Internet Protocol (IP) to support AFS communication requirements, while reducing costs, should be planned.

2.14 States should ensure that the solutions provided for the implementation of the ATN meet the air traffic management and aeronautical fixed service requirements. Such requirements should consist of:

a) Performance requirements: availability, continuity, integrity, monitoring and alerting criteria per data flow. In the case where a Required Communication Performance (RCP) is globally prescribed, requirements derived from RCP should be stated;
b) Interoperability requirements;
c) Safety and security requirements, duly derived after the identification of operational hazards and threats, and allocation of objectives; and
d) Implementation process requirements (creation, test, migration, upgrades, priority in restoration of service, termination).

Network management

2.15 An ICAO centralised off-line network management service is provided to participating AFTN/AMHS centres in the Asia and Pacific Regions under the ATS Messaging Centre (AMC).

2.16 In the case of integrated communications services procured and shared by several States, organizational provisions should allow for the planning and performing of the management of technical performance, network configuration, fault, security, cost division/allocation, contract, orders and payment.

Specific Air Traffic Management (ATM) requirements

2.17 Where ATS speech and data communication links between any two points are provided, the engineering arrangements should be such as to avoid the simultaneous loss of both circuits. The required ATS direct speech circuits plan is detailed under **Table CNS II-3**.

2.18 Special provisions should be made to ensure a rapid restoration of ATS speech circuits in case of outage, as derived from the performance and safety requirements.

2.19 Data circuits between ATS systems should provide for both high capacity and message integrity.

2.20 The Inter-Centre Communication (ICC), consisting of ATS Inter-facility Data Communication (AIDC) application and the Online Data Interchange (OLDI) application, should be used for automated exchange of flight data between ATS units to enhance the overall safety of the ATM operation and increase airspace capacity.

2.21 Where Voice over IP is planned or implemented between ATS units for voice communications, it should meet the ATS requirements. When data and voice are multiplexed, particular attention should be paid to the achievement of the ATM performance and safety requirements.

Specific Meteorological (MET) requirements

2.22 The increasing use of the GRIB (Gridded Binary or General Regularly-distributed Information in Binary form) and BUFR (Binary Universal Form for the Representation of meteorological data) code forms for the dissemination of the upper wind and temperature and significant weather forecasts and the planned transition to digital form using Extensible Mark-Up Language (XML)/Geography Mark-Up Language (GML) for the dissemination of OPMET data should be taken into account in the planning process of the ATN.

2.23 In planning the ATN, account should be taken of changes in the current pattern of distribution of meteorological information resulting from the increasing number of long-range direct flights and the trend towards centralized flight planning.

Specific Aeronautical Information Management (AIM) requirements

2.24 The aeronautical fixed service should meet the requirements to support efficient provision of aeronautical information services through appropriate connections to Area Control Centres (ACCs), Flight Information Centres (FICs), aerodromes and heliports at which an information service is established.

Aeronautical Mobile Service (AMS)

2.25 To meet the air-ground data communication requirements, a high-grade aeronautical network should be provided based on the ATN, recognising that other technologies may be used as part of the transition. The network needs to integrate the various data links in a seamless fashion and provide for end-to-end communications between airborne and ground-based facilities.

2.26 Whenever required, use of suitable techniques on VHF or higher frequencies should be made. The required HF Network designators applicable for the Asia and Pacific Regions are listed in **Table CNS II-4**.

2.27 Aerodromes having a significant volume of International General Aviation (IGA) traffic should also be provided with appropriate air-ground communication channels.

Air-Ground Data Link Communications

2.28 A Strategy for the harmonised implementation of the data link communications in the Asia and Pacific Regions should be developed based on the Global Operational Data Link Document (GOLD) adopted by ICAO Regions and the Aviation System Block Upgrade (ASBU) methodology.

2.29 Where applicable, Controller-Pilot Data Link Communications (CPDLC), based on ATN VDL data link Mode 2 (VDL2) and/or FANS-1/A, should be implemented for air-ground data link communications.

2.30 Partial or divergent aircraft data link evolutions that result in excluding messages from aircraft systems should not be pursued. Interim steps or phases toward full implementation of the common technical

definition in ground systems should only be pursued on a regional basis, after coordination between all States concerned.

2.31 Harmonization of operational procedures for implementation of the above packages is essential. States, Planning and Implementation Regional Groups (PIRGs) and air navigation services providers should adopt common procedures to support seamless ATS provision across FIR boundaries, rather than each State or Region developing and promulgating unique procedures for common functions.

Required Communication Performance (RCP)

2.32 The Required Communication Performance (RCP) concept characterizing the performance required for communication capabilities that support ATM functions without reference to any specific technology should be applied wherever possible.

2.33 States should determine, prescribe and monitor the implementation of the RCP in line with the provisions laid down in the *ICAO Manual on Required Communication Performance* (Doc 9869).

Navigation

Navigation Infrastructure

2.34 The navigation infrastructure should meet the requirements for all phases of flight from take-off to final approach and landing.

Note: Annex 10 to the Convention on International Civil Aviation—Aeronautical Telecommunications, Volume I— Radio Navigation Aids, Attachment B, provides the strategy for introduction and application of non-visual aids to approach and landing.

2.35 The ASIA/PAC Regional Performance-Based Navigation (PBN) Implementation Plan provides guidance to air navigation service providers, airspace operators and users, regulators, and international organizations, on the expected evolution of the regional air navigation system in order to allow planning of airspace changes, enabling ATM systems and aircraft equipage. It takes due account of the operational environment of the Asia and Pacific Regions.

PBN Transition Strategy

2.36 During transition to performance-based navigation (PBN), sufficient ground infrastructure for conventional navigation systems should remain available. Before existing ground infrastructure is considered for removal, users should be given reasonable transition time to allow them to equip appropriately to attain a performance level equivalent to PBN.. States should approach removal of existing ground infrastructure with caution to ensure that safety is not compromised. This should be guaranteed by conducting safety assessments and consultations with the users.

Use of specific navigation aids

2.37 Where, within a given airspace, specific groups of users have been authorized by the competent authorities to use special aids for navigation. The respective ground facilities should be located and aligned so as to provide for full compatibility of navigational guidance with that derived from the SARPs.

2.38 States should ensure and oversee that service providers take appropriate corrective measures promptly whenever required by a significant degradation in the accuracy of navigation aids (either space based or ground based or both) is detected.

Surveillance

2.39 An important element of modern air navigation infrastructure required to manage safely increasing levels and complexity of air traffic is aeronautical surveillance systems.

2.40 When operating Mode S radars, States should coordinate with their corresponding ICAO Regional Office the assignment of their corresponding interrogator identifier (II) codes and surveillance identifier (SI) codes, particularly where areas of overlapping coverage will occur.

Frequency Management

Aeronautical Mobile Service (AMS)

2.41 Frequencies should be assigned to all VHF Aeronautical Mobile Service (AMS) facilities in accordance with the principles laid out in Annex 10, Volume V and *ICAO Handbook on Radio Frequency Spectrum Requirements for Civil Aviation* (Doc 9718) Volumes I and II, and take into account:

a) agreed geographical separation criteria based on 25 kHz or 8.33 kHz interleaving between channels;
b) agreed geographical separation criteria for the implementation of VDL services;
c) the need for maximum economy in frequency demands and in radio spectrum utilization; and
d) a deployment of frequencies which ensures that international services are planned to be free of interference from other services using the same band.

2.42 The priority order to be followed in the assignment of frequencies to service is:

a) ATS channels serving international services (ACC, APP, TWR, FIS);
b) ATS channels serving national purposes;
c) channels serving international VOLMET services;
d) channels serving ATIS and PAR; and
e) channels used for other than ATS purposes.

2.43 The criteria used for frequency assignment planning for VHF AMS facilities serving international requirements should, to the extent practicable, also be used to satisfy the need for national VHF AMS facilities.

2.44 Special provisions should be made, by agreement between the States concerned, for the sharing and the application of reduced protection of non-ATS frequencies in the national sub-bands, so as to obtain a more economical use of the available frequency spectrum consistent with operational requirements.

2.45 States should ensure that no air/ground frequency is utilized outside its designated operational coverage and that the stated operational requirements for coverage of a given frequency can be met for the transmission sites concerned, taking into account terrain configuration.

Radio navigation aids for Aeronautical Radio Navigation Services (ARNS)

2.46 Frequencies should be assigned to all radio navigation facilities taking into account greed geographical separation criteria to ILS localizer, VOR and GBAS, X and Y channels to DME, in accordance with the principles laid out in Annex 10, Volume V and *ICAO Handbook on Radio Frequency Spectrum Requirements for Civil Aviation* (Doc 9718) Volumes I and II. Also, the need for maximum economy in frequency demands and in radio spectrum utilization and a deployment of frequencies which ensures that international services are planned to be free of interference from other services using the same band, need to be considered.

2.47 The principles used for frequency assignment planning for radio navigation aids serving international requirements should, to the extent possible, also be used to satisfy the needs for national radio aids to navigation.

Support to ICAO Positions for ITU World Radiocommunication Conferences (WRCs)

2.48 Considering the importance and continuous demand of the radio frequency spectrum and for the protection of the current aeronautical spectrum and the allocation of new spectrum for the new services and system to be implemented in civil air navigation, States and international organizations are to support ICAO's position at ITU World Radiocommunication Conferences (WRCs) and in regional and other international activities conducted in preparation for ITU WRCs.

Note: The Handbook on Radio Frequency Spectrum Requirements for Civil Aviation (Doc 9718) Volume I, contains ICAO policy statements relevant to the aviation requirements for radio frequency spectrum. The handbook is intended to assist States and ICAO in preparing for ITU WRCs.

3. SPECIFIC REGIONAL REQUIREMENTS

Communications

Aeronautical Fixed Telecommunication Network (AFTN)

3.1 States operating AFTN circuits which do not function satisfactorily 97 per cent of the time during which the circuit is scheduled to be in operation, should exchange monthly circuit performance data. Where a circuit consistently achieves 97 per cent reliability, the exchange of performance data may cease. The circuit performance data should be exchanged directly between the correspondent stations, with copies to the administrations concerned and to the ICAO APAC Regional Office. States should also identify the causes for inadequate circuit performance and take necessary remedial measures.
[ASIA/PAC/3, Conc. 10/2]

3.2 States responsible for the operation of AFTN circuits, which do not adequately meet transit time requirements should record transit time statistics on the twenty-third day of each third month (January, April, July and October) of each year, in accordance with the existing practices, for the AFTN circuits and terminals under their jurisdiction which do not meet the specified transit time criteria. The data recorded should be exchanged directly between the correspondent stations, with copies to administrations concerned and to the ICAO APAC Regional Office.
[ASIA/PAC/3, Conc. 10/3]

Specific ATM requirements

3.3 The AIDC implementation requirements are detailed under **Table CNS II-APAC-1, ATS Inter-facility Data Communication (AIDC) Implementation Plan** Columns 1 to 4.

Common regional network services

3.4 States should consider implementing digital communication networks or circuits in a coordinated manner in order to meet current and future AFS communication requirements for data/voice communications and to facilitate the introduction of ATN.
[APANPIRG/11, Conc. 11/14]

Navigation

3.5 The navigation system to be used in the Asia and Pacific Regions is documented in the Navigation strategy and periodically reviewed by APANPIRG. The latest version of the ASIA/PAC navigation strategy can be found at http://www.icao.int/APAC/Pages/edocs.aspx. The required conventional navigation infrastructure is detailed under **Table CNS II-APAC-2, Radio Navigation Aids**, Columns 3 to 6.

3.6 States should continue to provide ICAO with information on their flight inspection activities for inclusion in the ASIA/PAC Catalogue of Flight Inspection Units and circulation to States in the ASIA/PAC Region and to the ASIA/PAC Air Navigation Planning and Implementation Regional Group (APANPIRG).
[ASIA/PAC/3, Conc. 12/8]

3.7 Unless otherwise specified by the APAC navigation strategy, States that have not yet done so, should install VHF omnidirectional radio range (VOR) supplemented by Distance Measuring Equipment (DME) as the primary aid for en-route navigation and, except in specified circumstances, delete any parallel requirement for a Non-Directional Radio Beacon (NDB) from the ANP.
[ASIA/PAC/3, Rec. 5/22]

3.8 GNSS-enabled area navigation systems for all RNP navigation specifications are adopted as minimum requirement in the ASIA/PAC Region.
[APANPIRG/22, Conc. 22/22]

3.9 State aviation authorities, in partnership with other State's agencies are requested to prohibit malicious and unintentional interference to GNSS and regulate legitimate uses of technology to preserve aviation utility of GNSS.
[APANPIRG/22, Conc. 22/28]

3.10 In order to reduce the likelihood of CFIT accidents, States should review non-precision approach procedures with LNAV lines of minima to include CDFA profile. States should also include Baro-VNAV in the current and new RNP APCH approach procedures and consequent LNAV/VNAV approach minima.
[APANPIRG/19, Conc. 19/28]

Surveillance

3.11 The surveillance system to be used in the Asia and Pacific Regions is documented in the Surveillance strategy and periodically reviewed by APANPIRG. The latest version of the ASIA/PAC surveillance strategy can be found at http://www.icao.int/APAC/Pages/edocs.aspx. The required surveillance infrastructure is detailed under **Table CNS II-APAC-3, Surveillance**.

ADS-C

3.12 The 2nd edition of the Global Operational Data Link Document (GOLD) was adopted as ASIA/PAC regional guidance material for use by States and airspace users as the basis for operating Automatic Dependent Surveillance- Contract (ADS-C) and Controller Pilot Data Link Communications (CPDLC), in conjunction with Annex 10 - Aeronautical Telecommunications Volume II- Communications Procedures including those with PANS status and the Procedures for Air Navigation Services- Air Traffic Management (PANS ATM Doc 4444).
[APANPIRG/20, Conc.20/73 and APANPIRG/24, Conc.24/34]

ADS-B

3.13 Mode S Extended Squitter (1090 ES) is to be used as the data link for ADS-B radar like services in the Asia and Pacific Regions in the near term.
[APANPIRG/14, Conc.14/20]

3.14 States are urged to consider following regional policy on supporting the provision of direct controller pilot communication capability associated with ADS-B data sharing between adjacent FIRs of States. In order to provide radar like separation services using ADS-B, it is necessary for the controllers to have Direct Controller Pilot Communication (DCPC). In some cases, to achieve radar like separation services it may be necessary for States to provide VHF radio voice communication services for use by adjacent States. It is therefore recommended that States capable to do so, support the provision of VHF radio voice communication services to adjacent States when this is required to support the delivery of ADS-B based separation. The cost allocated to such service provision shall be agreed between the States concerned.
[APANPIRG/19, Conc.19/38]

3.15 States are urged to support the provision of VHF radio voice air/ground communication infrastructure for use by adjacent States and States sharing ADS-B data and providing VHF voice air-ground communication infrastructure to adjacent States. States should co-ordinate with ICAO APAC

Regional Office and their national Telecommunication Regulatory Authority for assignment of specific VHF radio frequencies to be used by the adjacent States.
[APANPIRG/22, Conc.22/32]

SSR

3.16 Due to the low density of SSR interrogator installations in the Asia and Pacific Regions, only Interrogator Identifier (not Surveillance Identifier) codes are used for SSRs Mode S in the areas of overlapping coverage.
[APANPIRG/19, Conc.19/40]

3.17 While implementing SSR Mode S, States should take into account following issues while assigning Interrogator Identifier codes for these installations:

- for planning the implementation of SSR Mode S administrations, States should ensure that the interrogators with overlapping coverage are not operating with the same Interrogator Identifier (II) codes; and

- where, the coverage of the interrogator extends beyond the boundaries of the State, the II code and PRF should be coordinated with the ICAO APAC Regional Office and the neighboring States.

3.18 Administrations should inform the ICAO APAC Regional Office about the assigned II codes and PRFs for these installations.
[APANPIRG/19, Conc.19/40]

3.19 The implementation of Mode S Radar ground stations has increased in the Asia and Pacific Regions, therefore States in these Regions are urged to have aircraft registered, which are equipped with Mode S transponder, regularly inspected to ensure correct operation of these transponders.
[APANPIRG17, Conc.17/29]

Frequency Management

3.20 The ICAO APAC Regional Office, based on the information provided for this purpose by States, will issue Frequency Lists Nos. 1, 2 and 3 at periodic intervals.
[ASIA/PAC/3, Conc.11/4, 11/5 and 12/9]

3.21 In the case of an unidentified interfering station, States should notify the ICAO APAC Regional Office utilizing the procedure and report form developed by the Fifth Session of the Communications Division (1954) and updated by the Communications Divisional Meeting (1978). However, in the case of persistent harmful interference to an aeronautical service which may affect safety, it should be immediately reported to ICAO and to the ITU, using the prescribed format, for appropriate action.
[ASIA/PAC/3, Conc.11/6]

3.23 States, where aeronautical stations are experiencing HF radio interference, should take necessary actions in coordination with the respective radio regulators to identify the source of interference and to eliminate the problem.
[APANPIRG/17, Conc.17 /32]

Aeronautical Mobile Service (AMS)

3.24 The provision of Aeronautical Mobile (R) Service in the Asia and Pacific Regions will be guided by the following strategy:

- VHF voice service, backed by CPDLC and HF will be the primary communication medium for transcontinental traffic; and a combination of CPDLC and HF voice will be the communication medium for oceanic traffic.

- The requirement for basic voice communication will continue, supplemented by Data-Link Flight Information Service (DFIS) applications including D-VOLMET, D-ATIS and PDC to significantly reduce pressure on VHF spectrum congestion.
[APANPIRG/18, Conc.18/29, partly]

TABLE CNS II-1 AERONAUTICAL FIXED TELECOMMUNICATIONS NETWORK (AFTN) PLAN

EXPLANATION OF THE TABLE

Column

1 The AFTN Centres/Stations of each State are listed alphabetically. Each circuit appears twice in the table. The categories of these facilities are as follows:

M - Main AFTN COM Centre
T - Tributary AFTN COM Centre
S - AFTN Station

2 Category of circuit:

M - Main trunk circuit connecting Main AFTN communication centres.
T - Tributary circuit connecting Main AFTN communication centre and Tributary AFTN Communications Centre.
S - AFTN circuit connecting an AFTN Station to an AFTN Communication Centre.

3 Type of circuit provided:

LTT/a - Landline teletypewriter, analogue (e.g. cable, microwave)

LTT/d - Landline teletypewriter, digital (e.g. cable, microwave)
LDD/a - Landline data circuit, analogue (e.g. cable, microwave)
LDD/d - Landline data circuit, digital (e.g. cable, microwave)
SAT/a/d - Satellite link, with /a for analogue or /d for digital

4 Circuit signalling speed in bits/s.

5 Circuit protocols

6 Data transfer code (syntax):

ITA-2 - International Telegraph Alphabet No. 2 (5-unit Baudot code).
IA-5 - International Alphabet No. 5 (ICAO 7-unit code).
CBI - Code and Byte Independency (ATN compliant).

7 Remarks

State/Station	Category	Requirement				Remarks
		Type	Signalling Speed	Protocol	Code	
1	2	3	4	5	6	7
AFGHANISTAN						
Kabul/OAKB						
Karachi/OPKC	S	SAT/d	2400 bps	None	IA-5	
Tehran/OIII	S	LDD/d	2400 bps	None	IA-5	
AMERICAN SAMOA						
Pago Pago/NSTU						
Salt Lake City/KSLC	S	LDD/d	2400 bps	IP	IA-5	
AUSTRALIA						
Brisbane/YBBB						
Christchurch/NZCH	T	LDD/d	2400 bps	X.25	IA-5	MPLS VPN AMHS-IPS 2017
Honiara/AGGG	S	LDD/d	N/A	HTTP	IA-5	INTERNET
Jakarta/WIII	S	SAT/d	64 Kbps	AMHS/IPS	IA-5	IP VPN
Makassar/WAAA	S				IA-5	IP VPN for AIDC
Nadi/NFFN	M	LDD/d	64 Kbps	AMHS/OSI	IA-5	INTERNET

State/Station	Category	Requirement				Remarks
		Type	Signalling Speed	Protocol	Code	
1	2	3	4	5	6	7
Nauru/ANAU	S	LDD/d	N/A	HTTP	IA-5	
Port Moresby/AYPM	S	LDD/d	128 Kbps	IP	IA-5	INTERNET
Port Vila/NVVV	S	LDD/d	N/A	HTTP	IA-5	INTERNET
Dili/WPDL	S	LDD/d	N/A	HTTP	IA-5	INTERNET
Singapore/WSSS	M	LDD/d	64 Kbps	X.25	IA-5	AMHS/OSI 2015
United States/KSLC	M	LDD/d	64 Kbps	X.25	IA-5	MPLS/VPN AMHS/IPS 2017
Johannesburg/FAOR	M	LDD/d	64 Kbps	X.25	IA-5	IP VPN
BANGLADESH						
Dhaka/VGHS						
Bangkok/VTBB	S	SAT/d	32 Kbps	AMHS/OSI	IA-5	
Kolkata/VECC	S	LDD/d	64 Kbps	X.25	IA-5	
BHUTAN						
Paro-S/VQPR						
Mumbai/VABB	S	Internet	64 Kbps	IP	IA-5	IP VPN over Internet
Bangkok/VTBB	S	Internet	64 Kbps	IP	IA-5	IP VPN over Internet

State/Station	Category	Requirement				Remarks
		Type	Signalling Speed	Protocol	Code	
1	2	3	4	5	6	7
BRUNEI DARUSSALAM						
Brunei/WBSB						
Singapore/WSSS	S	LDD/d	64 Kbps	X.25	IA-5	
Kuala Lumpur/WMKK	S	LDD/d	9600 bps	X.25	IA-5	
CAMBODIA						
Phnom Penh/VDPP						
Bangkok/VTBB	S	SAT/d	64 Kbps	IPS	IA-5	
CHINA						
Beijing/ZBBB						
Bangkok/VTBB	M	SAT/da	2400 bps	X.25	IA-5	
Guangzhou/ZGGG	M	LDD/d	64 Kbps	X.25	IA-5	
Karachi/OPKC	M	LDD/d	2400 bps	X.25	IA-5	
Kathmandu/VNKT	S	SAT/d	300 bps	None	IA-5	
Russian Federation/UHHH	M	LDD/d	64 Kbps	X.25	IA-5	
Pyongyang/ZKKK	S	SAT/d	9600 bps	X.25	IA-5	

State/Station	Category	Requirement				Remarks
		Type	Signalling Speed	Protocol	Code	
1	2	3	4	5	6	7
Seoul/RKSS	S	SAT/d	9600 bps	X.25	IA-5	
Fukuoka/RJJJ	M	LDD/d	64 Kbps	X.25	IA-5	
Ulaan Baatar/ZMUB	S	LDD/d	64 Kbps	X.25	IA-5	
Yangon/VYYY	S	LDD/d	9600 bps	None	IA-5	
Guangzhou/ZGGG						
Beijing/VTBB	M	LDD/d	64 Kbps	X.25	IA-5	
Hanoi/VVNB	S	SAT/d	300 bps	None	IA-5	
Hong Kong/VHHH	M	LDD/d	2400 bps	None	IA-5	
Macao/VMMC	S	LDD/d	2400 bps	None	IA-5	
Haikou/ZJHK	S	LDD/d	9600 bps	None	IA-5	
Haikou/ZJHK						
Guangzhou/ZGGG	S	LDD/d	9600 bps	None	IA-5	
Hong Kong/VHHH	S	LDD/d	2400 bps	None	IA-5	
Taibei/RCTP						
Hong Kong/VHHH	S	LDD/d	4800 bps	X.25	IA-5	

State/Station	Category	Requirement				Remarks
		Type	Signalling Speed	Protocol	Code	
1	2	3	4	5	6	7
Manila/RPLL	S	LDD/d	300 bps	None	ITA-2	
Fukuoka/RJJJ	S	LDD/d	64 Kbps	X.25	IA-5	
Hong Kong China/VHHH						
Bangkok/VTBB	M	LDD/d	64 Kbps	CLNP/X.25	IA-5	
Guangzhou/ZGGG	M	LDD/d	2400 bps	None	IA-5	
Ho Chi Minh/VVTS	S	LDD/d	2400 bps	None	IA-5	
Macao/VMMC	S	LDD/d	64 Kbps	CLNP/X.25	IA-5	
Manila/RPLL	S	LDD/d	9600 bps	X.25	IA-5	
Haikou/ZJHK	S	LDD/d	2400 bps	None	IA-5	
Taibei/RCTP	S	LDD/d	4800 bps	X.25	IA-5	
Fukuoka/RJJJ	M	LDD/d	9600 bps	X.25	IA-5	
MACAO CHINA						
Macau/VMMC						
Hong Kong/VHHH	S	LDD/d	64 Kbps	X.25	IA-5	
Guangzhou/ZGGG	S	LDD/d	2400 bps	None	IA-5	

State/Station	Category	Requirement				Remarks
		Type	Signalling Speed	Protocol	Code	
1	2	3	4	5	6	7
COOK ISLANDS						
Rarotonga/NCRG						
Christchurch/NZCH	S	LDD/d	64 Kbps	IP	IA-5	
DPR KOREA						
Pyongyang/ZKKK						
Beijing/ZBBB	S	LDD/d	9600 bps	X.25	IA-5	
FIJI						
Nadi/NFFN						
Brisbane/YBBB	M	LDD/d	64 Kbps	AMHS/OSI	IA-5	
Funafuti/NGFU	S	SAT/d	Internet	IP	IA-5	VPN over Internet
Noumea/NWWW	S	SAT/d	9600 bps	Asynch.	IA-5	
Tarawa/NGTT	S	SAT/d	Internet	IP	IA-5	VPN over Internet
United States/KSLC	M	LDD/d	9600 bps	X.25	IA-5	
Wallis Is./NLWW	S	SAT/d	9600 bps	Asynch.	IA-5	Via Noumea

State/Station	Category	Requirement				Remarks
		Type	Signalling Speed	Protocol	Code	
1	2	3	4	5	6	7
FRENCH POLYNESIA (France)						
Papeetee /NTAA						
Christchurch/NZCH	S	SAT/d	64 Kbps	IP	IA-5	
INDIA						
Mumbai/VABB						
Bangkok/VTBB	M	LDD/d	64 Kbps	AMHS/OSI	IA-5	
Kolkata/VECC	S	LDD/d	64 Kbps	X.25	IA-5	
Colombo/VCCC	S	LDD/d	64 Kbps	X.25	IA-5	
Karachi/OPKC	M	SAT/d	2400 bps	None	IA-5	
Kathmandu/VNKT	S	SAT/a	50 bauds	None	ITA-2	
Muscat/OOMS	M	SAT/a	300 bauds	None	ITA-2	
Nairobi/HKNA	M	SAT/a	50 bauds	None	ITA-2	
Paro/VQPR	S	SAT/a	900 bauds	None	ITA-2	Plan to upgrade to 64 Kbps 2017 LDD/d using IA5 X.25
Singapore/WSSS	M	LDD/d	64 Kbps	X.25	IA-5	

State/Station	Category	Requirement				Remarks
		Type	Signalling Speed	Protocol	Code	
1	2	3	4	5	6	7
Kolkata/VECC						
Dhaka/VGZR	S	LDD/d	64 Kbps	None	IA-5	
Mumbai	S	LDD/d	64 Kbps	X.25	IA-5	
Delhi/VIDP						
Tashkent/UTTT	S	SAT/a	50 bauds	None	ITA-2	
Chennai/VOMM						
Kuala Lumpur/WMKK	S	LDD/d	64 Kbps	None	IA-5	
INDONESIA						
Jakarta/WIII						
Brisbane/YBBB	S	SAT/d	64 Kbps	AMHS/IPS	IA-5	IP VPN
Singapore/WSSS	S	LDD/d	128 Kbps	X.25	IA-5	
Makassar/WAAA						
Brisbane/YBBB	S					IP VPN for AIDC

State/Station	Category	Requirement				Remarks
		Type	Signalling Speed	Protocol	Code	
1	2	3	4	5	6	7
JAPAN						
Fukuoka-M/RJJJ						
Beijing/ZBBB	M	LDD/d	64 Kbps	X.25	IA-5	
Hong Kong/VHHH	M	LDD/d	9600 bps	X.25	IA-5	
Russian Federation/UUUU	M	LTT	64 Kbps	X.25	IA-5	
Seoul/RKSS	S	LDD/d	9600 bps	X.25	IA-5	
Singapore/WSSS	M	LDD/d	9600 bps	X.25	IA-5	
United States/KSLC	M	LDD/d	64 Kbps	X.25	IA-5	
Taibei/RCTP	S	LDD/d	64 Kbps	X.25	IA-5	
KIRIBATI						
Tarawa-S/NGTT						
Nadi/NFFN	S	SAT/d	Internet	IP	IA-5	VPN over Internet
LAO PDR						
Vientiane-S/VLVT						
Bangkok/VTBB	S	SAT/d	32 kbps	None	IA-5	

State/Station	Category	Requirement				Remarks
		Type	Signalling Speed	Protocol	Code	
1	2	3	4	5	6	7
Hanoi/VVNB	S	SAT/d	2400 bps	None	IA-5	
MALASIA						
Kuala Lumpur-S/WMKK						
Bangkok/VTBB	S	SAT/d	64 Kbps	None	IA-5	
Brunei/WBSB	S	LDD/d	9600 bps	X.25	IA-5	
Chennai/VOMM	S	LDD/d	64 Kbps	None	IA-5	
Singapore/WSSS	S	SAT/d	64 Kbps	X.25	IA-5	
MALDIVES						
Male-S/VRMM						
Colombo/VCCC	S	SAT/d	32 Kbps	None	IA-5	
MARSHALL ISLAND						
Majuro-S/PKMJ						
United States/KSLC	S	Internet	64 Kbps	IP	IA-5	

State/Station	Category	Requirement				Remarks
		Type	Signalling Speed	Protocol	Code	
1	2	3	4	5	6	7
MICRONESIA, FEDERATED STATES OF						
Chuuk-S/PTKK						
United States/KSLC	S	Internet	64 Kbps	IP	IA-5	
Kosrae-S/PTSA						
United States/KSLC	S	Internet	64 Kbps	IP	IA-5	
Ponapei-S/PTPN						
United States/KSLC	S	Internet	64 Kbps	IP	IA-5	
YAP-S/PTYA						
YAP-S/PTYA						
United States/KSLC	S	Internet	64 Kbps	IP	IA-5	
MONGOLIA						
Ulaanbaatar-S/ZMUB						
Beijing/ZBBB	S	LDD/d	64 Kbps	X.25	IA-5	

State/Station	Category	Requirement				Remarks
		Type	Signalling Speed	Protocol	Code	
1	2	3	4	5	6	7
Russian Federation/UIII	S	LDD/d	9600 bps	X.25	IA-5	
MYANMAR						
Yangon-S/VYYY						
Bangkok/VTBB	S	SAT/d	9600 bps	None	IA-5	
Beijing/ZBBB	S	LDD/d	9600 bps	X.25	IA-5	
NAURU						
Nauru-S/ANAU						
Brisbane/YBBB	S	LDD/d	N/A	HTTP	IA-5	Internet
NEPAL						
Katmandu-S/VNKT						
Beijing/ZBBB	S	SAT/d	300 baud	None	IA-5	
Mumbai/VABB	S	SAT/a	50 baud	None	ITA-2	
NEW CALEDONIA, (FRANCE)						

State/Station	Category	Requirement				Remarks
		Type	Signalling Speed	Protocol	Code	
1	2	3	4	5	6	7
Noumea-S/NWWW						
Nadi/NFFN	S	SAT/d	9600 bps	Asynch.	IA-5	
NEW ZEALAND						
Christchurch-T/NZCH						
Faleolo/NSFA	S	LDD/d	64 Kbps	IP	IA-5	
Brisbane/YBBB	T	LDD/d	2400 bps	X.25	IA-5	MPLS VPN AMHS-IPS 2017
Niue/NIUE	S	E-mail				
Papeetee/NTAA	S	SAT/d	64 Kbps	IP	IA-5	
Rarotonga/NCRG	S	LDD/d	64 Kbps	IP	IA-5	
Tongatapu/NFTF	S	LDD/d	64 Kbps	IP	IA-5	
USA/KSLC	M	LDD/d	9600 bps	X.25	IA-5	
NIUE IS						
Niue-S/NIUE						
Christchurch/NZCH	S	E-mail				

State/Station	Category	Requirement				Remarks
		Type	Signalling Speed	Protocol	Code	
1	2	3	4	5	6	7
PAKISTAN						
Karachi-M/OPKC						
Beijing/ZBBB	M	LDD/d	2400 bps	X.25	IA-5	
Mumbai/VABB	M	SAT/d	2400 bps	None	IA-5	
Kabul/OAKB	S	SAT/d	2400 bps	None	IA-5	
Kuwait/OKBK	M	LDD/d	2400 bps	None	IA-5	
PALAU						
Koror-S/PTRO						
United States/KSLC	S	Internet	64 Kbps	IP	IA-5	
PAPUA NEW GUINEA						
Port Moresby-S/AYPM						
Brisbane/YBBB	S	LDD/d	128 Kbps	IP	IA-5	
PHILIPPINES						
Manila-S/RPLL						
Hong Kong/VHHH	S	LDD/d	9600 bps	X.25	IA-5	

State/Station	Category	Requirement				Remarks
		Type	Signalling Speed	Protocol	Code	
1	2	3	4	5	6	7
Singapore/WSSS	S	LDD/d	64 Kbps	X.25	IA-5	
Taibei/RCTP	S	LDD/d	300 baud	None	ITA-2	
REPUBLIC OF KOREA						
Seoul-S/RKSS						
Beijing/ZBBB	S	SAT/d	9600 bps	X.25	IA-5	
Fukuoka/RJJJ	S	LDD/d	9600 bps	X.25	IA-5	
SAMOA						
Faleolo-S/NSFA						
Christchurch/NZCH	S	LDD/d	64 Kbps	IP	IA-5	
SINGAPORE						
Singapore-M/WSSS						
Bahrain/OBBI	M	LTT/d	64 Kbps	X.25	IA-5	
Bangkok/VTBB	M	LDD/d	64 Kbps	AMHS/OSI	IA-5	
Brisbane/YBBB	M	LDD/d	64 Kbps	X.25	IA-5	AMHS/OSI 2015

State/Station	Category	Requirement				Remarks
		Type	Signalling Speed	Protocol	Code	
1	2	3	4	5	6	7
Brunei/WBSB	S	LDD/d	64 Kbps	X.25	IA-5	
Colombo/VCCC	S	LDD/d	64 Kbps	X.25	IA-5	
Ho-Chi-Minh/VVTS	S	LDD/d	128 Kbps	X.25	IA-5	
Jakarta/WIII	S	LDD/d	128 Kbps	X.25	IA-5	
Kuala Lumpur/WMKK	S	SAT/d	64 Kbps	X.25	IA-5	
Mumbai/VABB	M	LDD/d	64 Kbps	X.25	IA-5	
London/EGGG	M	LDD/d	128 Kbps	None	IA-5	
Manila/RPLL	S	LDD/d	64 Kbps	X.25	IA-5	
Fukuoka/RJJJ	M	LDD/d	9600 bps	X.25	IA-5	
SOLOMON IS.						
Honiara-S/AGGG						
Brisbane/YBBBB	S	LDD/d	N/A	HTTP	IA-5	Internet
SRI LANKA						
Colombo-M/VCCC						
Mumbai/VABB	M	LDD/d	64 Kbps	X.25	IA-5	
Male/VRMM	S	SAT/d	32 Kbps	None	IA-5	

State/Station	Category	Requirement				Remarks
		Type	Signalling Speed	Protocol	Code	
1	2	3	4	5	6	7
Singapore/WSSS	S	LDD/d	64 kbps	X.25	IA-5	
THAILAND						
Bangkok-M/VTBB						
Beijing/ZBBB	M	SAT/d	2400 bps	X.25	IA-5	
Mumbai/VABB	M	LDD/d	64 Kbps	AMHS/OSI	IA-5	
Dhaka/VGHS	S	SAT/d	32 Kbps	AMHS/OSI	IA-5	
Ho Chi Minh/VVTS	S	SAT/d	2400 bps	None	IA-5	
Hong Kong/VHHH	M	LDD/d	64 Kbps	AMHS/OSI	IA-5	
Kuala Lumpur/WMKK	S	SAT/d	64 Kbps	None	IA-5	
Phnom Penh/VDPP	S	SAT/d	64 Kbps	IPS	IA-5	
Paro/VQPR	S	Internet	N/A	None	IA-5	VPN over Internet
Rome/LIII	M	LDD/d	64 Kbps	X.25	IA-5	
Singapore/WSSS	M	LDD/d	64 Kbps	AMHS/OSI	IA-5	
Vientiane/VLVT	S	SAT/d	32 Kbps	None	IA-5	
Yangon/VYYY	S	SAT/d	9600 bps	None	IA-5	

State/Station	Category	Requirement				Remarks
		Type	Signalling Speed	Protocol	Code	
1	2	3	4	5	6	7
TIMOR LESTE						
Dili/WPDL						
Brisbane/YABB	S	LDD/d	N/A	HTTP	IA-5	Internet
TONGA						
Tongatapu-S/NFTF						
Christchurch/NZCH	S	LDD/d	64 Kbps	IP	IA-5	
TUVALU						
Funafuti-S/NGFU						
Nadi/NFFN	S	SAT/d	Internet	IP	IA-5	VPN over Internet
United States/KSLC	M	LDD/d	64 Kbps	X.25	IA-5	MPLS/VPN AMHS/IPS 2017
UNITED STATES						
USA-M/KSLC						
Brisbane/YBBB	M	LDD/d	64 Kbps	X.25	IA-5	MPLS/VPN AMHS/IPS 2017
Christchurch/NZCH	S	LDD/d	9600 bps	X.25	IA-5	

State/Station	Category	Requirement				Remarks
		Type	Signalling Speed	Protocol	Code	
1	2	3	4	5	6	7
Chuuk/PTKK	S	Internet	64 Kbps	IP	IA-5	
Koror/PTRO	S	Internet	64 Kbps	IP	IA-5	
Kosrae/PTSA	S	Internet	64 Kbps	IP	IA-5	
MajuroPKMJ	S	Internet	64 Kbps	IP	IA-5	
Nadi/NFFN	M	LDD/d	9.6 Kbps	X.25	IA-5	
Pago Pago/NSTU	S	SAT/d	2400 bps	IP	IA-5	
Ponapei/PTPN	S	Internet	64 Kbps	IP	IA-5	
Fukuoka/RJJJ	M	LDD/d	64 Kbps	X.25	IA-5	
YapPTYA	S	Internet	64 Kbps	IP	IA-5	
VANUATU						
Port Vila-S/NVVV						
Brisbane/YBBB	S	LDD/d	N/A	HTTP	IA-5	Internet
VIET NAM						
Hanoi-S/VVNB						
Vientiane/VLVT	S	SAT/d	2400 bps	None	IA-5	

State/Station	Category	Requirement				Remarks
		Type	Signalling Speed	Protocol	Code	
1	2	3	4	5	6	7
Ho Chi Minh/VVTS	S	SAT/d	2400 bps	None	IA-5	
Guangzhou/ZGGG	S	SAT/d	300 bps	None	IA-5	
Ho Chi Minh-S/VVTS						
Bangkok/VTBB	S	SAT/d	2400 bps	None	IA-5	
Hanoi/VVNB	S	SAT/d	2400 bps	None	IA-5	
Hong Kong/VHHH	S	LDD/d	2400 bps	None	IA-5	
Singapore/WSSS	S	LDD/d	128 Kbps	X.25	IA-5	
WALLIS IS/ (FRANCE)						
Wallis-S/NLWW						
Nadi/NFFN	S	SAT/d	9600 bps	IP	IA-5	Via Noumea

TABLE CNS II-2 REQUIRED ATN INFRASTRUCTURE ROUTING PLAN

EXPLANATION OF THE TABLE

Column

1 Name of the Administration and Location of the ATN Router

2 Type of Router (in end systems (ES) of the Administration shown in column 1)

3 Type of Interconnection:

Inter-Regional: Connection between different Regions/ domains
Intra-Regional: Connection within a Region/ domain.

4 Connected Router: List of the Administration and location of the ATN routers to be connected with the router shown in column 1)

5 Bandwidth: Link Speed expressed in bits per second (bps)

6 Network Protocol: If Internet Protocol Suite is used, indicate version of IP (IPv4 or IPv6)

7 Via: The media used to implement the interconnection of the routers. (in case of IP service bought from a service provider, indicate VPN)

DDN (public telecomm leased line)
VSAT
VPN

8 Remarks

Administration And Locations	Type of Router	Type of Interconnection	Connected Router	Bandwidth	Network Protocol	Via	Remark
1	2	3	4	5	6	7	8
Afghanistan Kabul	BIS	Intra-Regional	Pakistan	64000bps	IPS		Intra-domain
	BIS	Inter-Regional	Iran	9600 bps	IPS		
American Samoa Pago Pago			United States				Intra-domain
Australia Brisbane	BBIS	Intra-Regional	Fiji	64000 bps	CLNP/IP-SNDCF (IPv4)	DDN	Implemented
	BIS	Intra-Regional	Indonesia	64000 bps	IPS		Not implemented
	BBIS	Intra-Regional	Japan	64000 bps	IPS/IP-SNDCF	VPN	Not implemented
	BIS	Intra-Regional	New Zealand	64000 bps	IPS	VPN	Not implemented
	BBIS	Intra-Regional	Singapore	64000 bps	CLNP/IP-SNDCF	DDN	ATN/AMHS trial planned to completed by end 2015
	BBIS	Inter-Regional	South Africa	64000 bps	TBD		Not implemented
	BBIS	Inter-Regional	United States	64000 bps	DDN lease line/IPS		
Bangladesh Dhaka	BIS	Intra-Regional	India	64000 bps	leased line/IPS	DDN	Implemented
	BIS	Intra-Regional	Thailand	32000 bps	IPv4	VSAT	Implemented
Bhutan Paro	BIS	Intra-Regional	India	64000 bps	IPS		TBD. Presently using AFTN via VPN through public internet
Brunei Darussalam Brunei	BIS	Intra-Regional	Malaysia	64000 bps	IPS		
	BIS	Intra-Regional	Singapore	9600 bps	IPv4	DDN	ATN/AMHS trial commence on 2017
Cambodia Phnom Penh	BIS	Intra-Regional	Thailand	64000 bps	IPv4	VSAT	Implemented
China Beijing	BIS	Intra-Regional	DPR Korea	9600 bps	X.25		Router Implemented
	BBIS	Intra-Regional	Hong Kong, China	64000 bps	X.25	DDN	Router Implemented
	BBIS	Intra-Regional	India	64000 bps	X.25/IPS	DDN	IOT/POT completed. - Migrate to IPS

Administration And Locations	Type of Router	Type of Interconnection	Connected Router	Bandwidth	Network Protocol	Via	Remark
	BBIS	Intra-Regional	Japan	64000 bps	IPS/SNDCF	VPN	Implementation planned from 2016 onwards
	BBIS	Inter-Regional	Kuwait	64000 bps	X.25		Router Implemented
	BIS	Intra-Regional	Macao, China	64000 bps	X.25		Implemented
	BIS	Intra-Regional	Mongolia	9600 bps	X.25		Router Implemented
	BIS	Intra-Regional	Myanmar	64000 bps	IPS/IPv4		Implementation on going/Plan Q4/15
	BIS	Intra-Regional	Nepal	9600 bps	X.25		Router Implemented
	BIS	Intra-Regional	Pakistan	64000 bps	X.25		Router Implemented
	BIS	Intra-Regional	Republic of Korea	64000 bps	X.25		Implemented
	BBIS	Inter-Regional	Russian Federation	64000 bps	X.25		Router Implemented
	BBIS	Intra-Regional	Thailand	64000 bps	CLNP/X.25	DDN	
	BIS	Intra-Regional	Vietnam	9600 bps	X.25		
Taibei	BIS	Intra-Regional	Hong Kong, China	64000 bps	X.25	DDN	TBD
	BIS	Intra-Regional	Japan	64000 bps	IPS	VPN	Implement from 2016 onwards Scheduled after CRV
Hong Kong, China	BBIS	Intra-Regional	China	64000 bps	X.25	DDN	Router Implemented
	BIS	Intra-Regional	Macao, China	64000 bps	X.25	DDN	Implemented
	BBIS	Intra-Regional	Japan	64000 bps	X.25/SNDCF	VPN	Scheduled for Q4/2017
	BIS	Intra-Regional	Philippines	64000 bps	X.25/IPS	DDN	Scheduled for Q4/2016
	BBIS	Intra-Regional	Taibei	64000 bps	X.25	DDN	TBD
	BBIS	Intra-Regional	Thailand	64000 bps	CLNP/X.25	DDN	Implemented
	BIS	Intra-Regional	Viet Nam	64000 bps	X.25	DDN	TBD
Macao, China	BIS	Intra-Regional	China	64000 bps	X.25		Implemented
	BIS	Intra-Regional	Hong Kong, China	64000 bps	X.25	DDN	Implemented
Cook Islands Rarotonga			New Zealand	796 kbps	IPS		Intra-domain

Administration And Locations	Type of Router	Type of Interconnection	Connected Router	Bandwidth	Network Protocol	Via	Remark
DPR Korea Pyongyang	BIS	Intra-Regional	China	9600 bps	X.25		
Fiji Nadi	BBIS	Intra-Regional	Australia	64000 bps	CLNP/IP-SNDCF (IPv4)	DDN	Implemented
	BIS	Intra-Regional	Kiribati	Internet	IPv4	VPN	Intra-domain (User Agent) - Implementation Q3 2015
	BIS	Intra-Regional	New Caledonia	64000 bps	IPS (IPv4)	DDN	Intra-domain - Implementation planned for 2016 Connected with Wallis
	BIS	Intra-Regional	Tuvalu	Internet	IPv4	VPN	Intra-domain (User Agent) - Implementation Q3 2015
	BBIS	Inter-Regional	United States	9600 bps	CLNP/X.25-SNDCF	DDN	The protocol will be upgraded to IPS/SNDCF in 2016
	BIS	Intra-Regional	Wallis Islands	Internet	IPv4	VPN	Connected with New Caledonia - Planned to be implemented in 2016
French Polynesia Papeete			New Zealand	64000 bps	IPS		Intra-domain
India Mumbai	BIS	Intra-Regional	Bangladesh	64000 bps	leased line/IPS	DDN	Implemented
	BIS	Intra-Regional	Bhutan	64000 bps	IPS		TBD. Presently using AFTN via VPN through public internet
	BBIS	Intra-Regional	China	64000 bps	X. 25/IPS	DDN	IOT/POT completed. - Migrate to IPS
	BIS	Inter-Regional	Kenya	64000 bps	TBD	TBD	Presently using AFTN via VPN via public internet
	BIS	Intra-Regional	Nepal	64000 bps	IPS		Implemented
	BIS	Inter-Regional	Oman	64000 bps	IPS		IOT completed. POT planned. TMC to be signed
	BIS	Intra-Regional	Pakistan	64000 bps	IPS		IOT/POT completed. TMC to be signed
	BBIS	Intra-Regional	Singapore	64000 bps	X.25	DDN	Implementation Plan Q4/15
	BIS	Intra-Regional	Sri Lanka	64000 bps	IPS	DDN	IOT/POT Completed.
	BBIS	Intra-Regional	Thailand	64000 bps	CLNP/X. 25	DDN	Implemented

Administration And Locations	Type of Router	Type of Interconnection	Connected Router	Bandwidth	Network Protocol	Via	Remark
	BBIS	Intra-Regional	Nairobi	64000 bps	IPS		
Indonesia Jakarta	BIS	Intra-Regional	Australia	64000bps	IPS		Not Implemented
	BIS	Intra-Regional	Singapore	64000 bps	IPv4	VSAT	ATN/AMHS trial to be completed by end 2015. Implementation Plan Q1/16
Japan Tokyo	BBIS	Intra-Regional	Australia	64000 bps	IPS/IP-SNDCF	VPN	Schedule after CRV
	BBIS	Intra-Regional	China	64000 bps	IPS/IP-SNDCF	VPN	Implement from 2016 onwards Schedule after CRV
	BBIS	Intra-Regional	Hong Kong, China	64000 bps	X.25/SNDCF	VPN	Scheduled for Q4/2017
	BBIS	Inter-Regional	Europe	64000 bps	IP-SNDCF	DDN/ VPN	TBD
	BIS	Intra-Regional	Republic of Korea	64000 bps	IPS(IPv4)	VPN	Implement from 2016 onwards Scheduled after CRV
	BBIS	Inter-Regional	Russia Federation	64000 bps	IP-SNDCF	DDN/ VPN	TBD
	BBIS	Intra-Regional	Singapore	64000 bps	IPS/SNDCF	DDN	Scheduled for Q1/2018
	BIS	Intra-Regional	Taibei	64000 bps	IPS	VPN	Implement from 2016 onwards Scheduled after CRV
	BBIS	Inter-Regional	United States	64000 bps	X.25-SNDCF	DDN/ VPN	Implemented
Kiribati Tarawa	BIS	Intra-Regional	Fiji	Internet	IPv4	VPN	Intra-domain (User Agent) - Implementation Q3 2015
Lao PDR Vientiane	BIS	Intra-Regional	Thailand	32000 bps	IPv4	VSAT	Implemented
	BIS	Intra-Regional	Viet Nam	9600 bps	X.25		
Malaysia Kuala Lumpur	BIS	Intra-Regional	Brunei	64000 bps	IPS		
	BIS	Intra-Regional	Singapore	64000 bps	IPv4	VSAT	Scheduled for Q1/2018
	BIS	Intra-Regional	Thailand	64000 bps	IPv4	VSAT	Implemented

Administration And Locations	Type of Router	Type of Interconnection	Connected Router	Bandwidth	Network Protocol	Via	Remark
Maldives Male	BIS	Intra-Regional	Sri Lanka	64000 bps	X.25		
Marshall Islands Majuro	BIS	Inter-Regional	United States	64000 bps	IP		VPN over Internet Intro-domain
Micronesia Federated State of	BIS	Inter-Regional	United States	64000 bps	IP	VPN	VPN over Internet
Chuuk							Intra-domain
Kosrae		Inter-Regional	United States	64000 bps	IP	VPN	VPN over Internet/Intra-domain
Ponapei		Inter-Regional	United States	64000 bps	IP	VPN	VPN over Internet/Intra-domain
Yap		Inter-Regional	United States	64000 bps	IP	VPN	VPN over Internet/Intra-domain
Mongolia Ulanbaatar	BIS	Intra-Regional	China	9600 bps	X.25		Router Implemented
Myanmar Yangon	BIS	Intra-Regional	China	64000 bps	IPv4	VSAT/ DDN	Implementation on going and planned Q4/15
	BIS	Intra-Regional	Thailand	32000 bps	IPv4	VSAT	Implemented
Nepal Kathmandu	BIS	Intra-Regional	China	9600bps	X.25		Router Implemented
	BIS	Intra-Regional	India	64000 bps	IPS		Implemented
New Caledonia Noumea			Fiji	64000 bps	IPS (IPv4)	DDN	Intra-domain - Implementation 2016 Connect with Wallis
New Zealand Christchurch	BIS	Intra-Regional	Australia	64000 bps	IPS	VPN	Not Implemented
			Cook Is.	796 kbps	IPS		Intra-domain
			French Polynesia	64000 bps	IPS		Intra-domain
			Samoa	1.1 Mb	IPS		Intra-domain
			Tonga	85000 bps	IPS		Intra-domain
	BIS	Inter-Regional	USA	64000 bps	IPS		
Pakistan Karachi	BIS	Intra-Regional	Afghanistan	64000 bps	IPS		
	BIS	Intra-Regional	China	64000 bps	X.25		

Administration And Locations	Type of Router	Type of Interconnection	Connected Router	Bandwidth	Network Protocol	Via	Remark
	BIS	Intra-Regional	India	64000 bps	IPS		IOT/POT completed. TMC to be signed
	BIS	Inter-Regional	Oman	64000 bps	-		
	BIS	Inter-Regional	Iran	64000 bps	-		
	BIS	Inter-Regional	Kuwait	64000 bps	-		
Philippines	BIS	Intra-Regional	Hong Kong, China	64000 bps	X.25/IPS	DDN	Scheduled for Q4/2016
	BIS	Intra-Regional	Singapore	64000 bps	IPv4	DDN	2016
		Intra-Regional	United States	64000 bps	IPS		to be implemented in 2016
Republic of Korea Seoul	BIS	Intra-Regional	China	64000 bps	X.25		Implemented
	BIS	Intra-Regional	Japan	64000 bps	IPS(IPv4)	VPN	Implementation from 2016 onwards scheduled after CRV
Samoa Faleolo			New Zealand	1.1 Mb	IPS		Intra-domain
Singapore Singapore	BBIS	Intra-Regional	Australia	64000 bps	CLNP/IP-SNDCF	DDN	ATN/AMHS trial planned to completed by end 2015
	BBIS	Inter-Regional	Bahrain	64000 bps	IPv4	DDN	
	BIS	Intra-Regional	Brunei	9600 bps	IPv4	DDN	ATN/AMHS trial commence on 2017
	BBIS	Intra-Regional	India	64000 bps	X.25	DDN	Implemented
	BIS	Intra-Regional	Indonesia	64000bps	IPv4	VSAT	ATN/AMHS trial to be completed by end 2015. Implementation Plan Q1/16
	BBIS	Intra-Regional	Japan	64000 bps	IPS/SNDCF	DDN	ATN/AMHS trial commence on 2017 Scheduled for Q1/2018
	BIS	Intra-Regional	Malaysia	64000 bps	IPv4	VSAT	Scheduled for Q1/2018
	BIS	Intra-Regional	Philippines	64000 bps	IPv4	DDN	2016
	BIS	Intra-Regional	Sri Lanka	64000 bps	IPv4	DDN	Implementation Plan Q1/16
	BBIS	Intra-Regional	Thailand	64000 bps	CLNP/X.25	DDN	Implemented
	BBIS	Inter-Regional	United Kingdom	128000 bps	IPv4	VPN	Implemented
	BIS	Intra-Regional	Viet Nam	9600 bps	X.25	DDN	ATN/AMHS trial planned to be completed by end 2015

Administration And Locations	Type of Router	Type of Interconnection	Connected Router	Bandwidth	Network Protocol	Via	Remark
Sri Lanka Colombo	BIS	Intra-Regional	India	64000 bps	IPS	DDN	Implementation planned for Q4/15
	BIS	Intra-Regional	Maldives	64000 bps	X.25		TBD
	BIS	Intra-Regional	Singapore	64000 bps	IPv4	DDN	Implementation Plan Q1/16
Thailand Bangkok	BIS	Intra-Regional	Bangladesh	32000 bps	IPv4	VSAT	Implemented
	BIS	Intra-Regional	Cambodia	64000 bps	IPv4	VSAT	Implemented
	BBIS	Intra-Regional	China	64000 bps	CLNP/X.25	DDN	
	BBIS	Intra-Regional	Hong Kong, China	64000 bps	CLNP/X.25	DDN	Implemented
	BBIS	Intra-Regional	India	64000 bps	CLNP/X.25	DDN	Implemented
	BBIS	Inter-Regional	Italy	64000 bps	IPv4	DDN	
	BIS	Intra-Regional	Lao PDR.	32000 bps	IPv4	VSAT	Implemented
	BIS	Intra-Regional	Malaysia	64000 bps	IPv4	VSAT	Implemented
	BIS	Intra-Regional	Myanmar	32000 bps	IPv4	VSAT	Implemented
	BBIS	Intra-Regional	Singapore	64000 bps	CLNP/X.25	DDN	Implemented
	BIS	Intra-Regional	Viet Nam	64000 bps	IPv4	VSAT	
Tonga Tongatapu	BIS	Intra-Regional	New Zealand	85000 bps	IPS		Intra-domain
Tuvalu Faleolo	BIS	Intra-Regional	Fiji	Internet	IPv4	VPN	Intra-domain (User Agent) - Implementation planned for Q3 2015
United States Salt Lake City	BBIS	Inter-Regional	Australia	64000 bps	IPS		
			American Samoa				Intra-domain
	BBIS	Inter-Regional	Fiji	9600 bps	CLNP/X.25-SNDCF	DDN	The protocol will be upgraded to IPS/SNDCF in 2016
	BBIS	Inter-Regional	Japan	64000 bps	X.25-SNDCF	DDN/ VPN	Implemented
		Intra-Regional	Marshall Islands	64000 bps	IP		Intra-domain/Internet

Administration And Locations	Type of Router	Type of Interconnection	Connected Router	Bandwidth	Network Protocol	Via	Remark
		Intra-Regional	Micronesia, Federated State of	64000 bps	IP		Intra-domain
	BIS	Inter-Regional	New Zealand	64000 bps	IPS		Implemented
		Intra-Regional	Philippines	64000 bps	IP		to be implemented in 2016
Viet Nam Ho Chi Minh/Hanoi	BIS	Intra-Regional	China	9600 bps	X.25		
	BIS	Intra-Regional	Hong Kong, China	64000 bps	X.25	DDN	TBD
	BIS	Intra-Regional	Lao PDR.	9600 bps	X.25		
	BIS	Intra-Regional	Singapore	9600 bps	X.25	DDN	ATN/AMHS trial planned to be completed by end 2015
	BIS	Intra-Regional	Thailand	64000 bps	IPv4	VSAT	
Wallis Islands	BIS	Intra-Regional	Fiji	Internet	IPv4	VPN	Connected with New Caledonia - Implemented in 2016

TABLE CNS II-3 - ATS DIRECT SPEECH CIRCUITS PLAN

EXPLANATION OF THE TABLE

Column

1 and 2 — Circuit terminal stations are listed alphabetically by the Terminal I.

3 — A — indicates ATS requirement for the establishment of voice communication within 15 seconds
D — indicates requirements for instantaneous communications

4 — Type of service specified:

LTF — landline telephone (landline, cable, UHF, VHF, satellite)
RTF — radiotelephone

5 — Type of circuits; Direct (D) or Switched (S)
D — indicates a direct circuit connecting Terminals I and II.
S — indicates that a direct circuit does not exist and that the connection is established via switching at the switching centre(s) indicated in column 6.
IDD — International direct dialling by public switch telephone network

Note 1.— Number of D and/or S circuits between Terminals I and II are indicated by numerical prefix, i.e. 2 D/S means 2 direct circuits and one switched circuit.

Note 2.— Pending the implementation of proper ATS voice circuits, and provided that aeronautical operational requirements are met, IDD services may be used for the ATS voice communications in low traffic areas.

6 — Location of switching centre(s). Alternate routing location, if available, is indicated in brackets.

7 — Remarks

ATS REQUIREMENTS FOR SPEECH COMMUNICATIONS			CIRCUIT			REMARKS
TERMINAL I	**TERMINAL II**	**TYPE**	**SERVICE**	**D/S**	**TO BE SWITCHED VIA**	
1	**2**	**3**	**4**	**5**	**6**	**7**
AFGHANISTAN						
KABUL ACC	KARACHI	A	LTF	D		
	LAHORE	A	LTF	D		
AMERICAN SAMOA (United States)						
PAGO PAGO APP	ALOFI	A	LTF	D		
	APIA/FALEOLO	A	LTF	D		
	NADI	A	LTF	D		
AUSTRALIA						
BRISBANE ACC	AUCKLAND	A	LTF	D		
	BALI	A	LTF	D		
	HONIARA	A	LTF	D		
	JAKARTA	A	LTF	D		
	NADI	A	LTF	S	OAKLAND	
	OAKLAND	A	LTF	D		
	PORT MORESBY	A	LTF	D		
	UJUNG PANDANG	A	LTF	D		
MELBOURNE	BRISBANE	A	LTF	D	NETWORK OPERATION	
	COLOMBO	A	LTF	D		
	DIEGO GARCIA	A	LTF	D		
	JAKARTA	A	LTF	S	BRISBANE	
	JOHANNESBERG	A	LTF	D		
	MALE	A	LTF	D		
	MAURITIUS	A	LTF	D		
	JAKATA ACC	A	LTF	D		
	BRISBANE	X	LTF	D		
PERTH APP	JAKATA ACC	A	LTF	D		
BANGLADESH						
DHAKA ACC	AGARTALA	A	LTF	D		
	KOLKATA	A	LTF	D		
	GUWAHATI	A	LTF	D		
	YANGON	A	LTF	S	BANGKOK	
BRUNEI DARUSSALAM						
BRUNEI ACC	KOTA KINABALU	A	LTF	D		
	LABUAN	A	LTF	D		
	LIMBANG	A	LTF	D		
	MIRI	A	LTF	D		
CAMBODIA						
PHNOM PENH ACC	BANGKOK	A	LTF	D		
	HO CHI MINH	A	LTF	D		
	VIENTIANE	A	LTF	S	BANGKOK	
CHINA						
BEIJING ACC	DALIAN	A	LTF	D		
	HOHHOT	A	LTF	D		
	JINAN	A	LTF	D		
	SHENYANG	A	LTF	D		
	TAIYUAN	A	LTF	D		
	ULAANBAATAR	A	LTF	D		
	ZHENGZHOU	A	LTF	D		
	GUANGZHOU	A	LTF	D		
	GUILIN	A	LTF	D		

ATS REQUIREMENTS FOR SPEECH COMMUNICATIONS			CIRCUIT			REMARKS
TERMINAL I	TERMINAL II	TYPE	SERVICE	D/S	TO BE SWITCHED VIA	
1	2	3	4	5	6	7
	GUIYANG	A	LTF	D		
	WUHAN	A	LTF	D		
	NANCHANG	A	LTF	D		
CHENGDU ACC	GUIYANG	A	LTF	D		
	KUNMING	A	LTF	D		
	LANZHOU	A	LTF	D		
	LHASA	A	LTF	D		
	WUHAN	A	LTF	D		
	XI'AN	A	LTF	D		
DALIAN ACC	BEIJING	A	LTF	D		
	PYONGYANG	A	LTF	D		
	QINGDAO	A	LTF	D		
	INCHEON	A	LTF	D		
	SHENYANG	A	LTF	D		
GUANGZHOU ACC	CHANGSHA	A	LTF	D		
	GUILIN	A	LTF	D		
	HAIKOU	A	LTF	D		
	HONG KONG	D	LTF	D		
	MACAO	A	LTF	D		
	NANCHANG	A	LTF	D		
	NANNING	A	LTF	D		
	SANYA	A	LTF	D		
	TAIBEI	A	LTF	D		
	XIAMEN	A	LTF	D		
GUILIN ACC	CHANGSHA	A	LTF	D		
	GUANGZHOU	A	LTF	D		
	GUIYANG	A	LTF	D		
	NANNING	A	LTF	D		
GUIYANG ACC	CHANGHSA	A	LTF	D		
	CHENGDU	A	LTF	D		
	GUILIN	A	LTF	D		
	KUNMING	A	LTF	D		
	NANNING	A	LTF	D		
HAIKOU ACC	GUANGZHOU	A	LTF	D		
	HA NOI	A	LTF	D		
	HONG KONG	A	LTF	D		
	NANNING	A	LTF	D		
	SANYA	A	LTF	D		
HAILAR ACC	CHITA	A	LTF	D		
	HARBIN	A	LTF	D		
	SHENYANG	A	LTF	D		
HARBIN ACC	KHABAROVSK	A	LTF	D		
	HAILAR	A	LTF	D		
	SHENYANG	A	LTF	D		
	VLADIVOSTOK	A	LTF	D		
HEFEI ACC	JINAN	A	LTF	D		
	NANCHANG	A	LTF	D		
	SHANGHAI	A	LTF	D		
	ZHENGZHOU	A	LTF	D		

ATS REQUIREMENTS FOR SPEECH COMMUNICATIONS			CIRCUIT			REMARKS
TERMINAL I	TERMINAL II	TYPE	SERVICE	D/S	TO BE SWITCHED VIA	
1	2	3	4	5	6	7
	WUHAN	A	LTF	D		
HOHHOT ACC	BEIJING	A	LTF	D		
	LANZHOU	A	LTF	D		
	TAIYUAN	A	LTF	D		
	ULAANBAATAR	A	LTF	D		
JINAN ACC	BEIJING	A	LTF	D		
	HEFEI	A	LTF	D		
	QINGDAO	A	LTF	D		
	SHANGHAI	A	LTF	D		
	TAIYUAN	A	LTF	D		
	ZHENGZHOU	A	LTF	D		
KUNMING ACC	CHENGDU	A	LTF	D		
	GUIYANG	A	LTF	D		
	HANOI	A	LTF	D		
	NANNING	A	LTF	D		
	VIENTIANE	A	LTF	D		
	YANGON	A	LTF	S	BANGKOK	
LANZHOU ACC	CHENGDU	A	LTF	D		
	HOHHOT	A	LTF	D		
	LHASA	A	LTF	D		
	ULAANBAATAR	A	LTF	D		
	URUMQI	A	LTF	D		
	XI'AN	A	LTF	D		
LHASA	CHENGDU	A	LTF	D		
	KATHMANDU	A	LTF	D		
	LANZHOU	A	LTF	D		
	URUMQI	A	LTF	D		
NANCHANG ACC	CHANGSHA	A	LTF	D		
	GUANGZHOU	A	LTF	D		
	HEFEI	A	LTF	D		
	WUHAN	A	LTF	D		
	XIAMEN	A	LTF	D		
NANNING	GUANGZHOU	A	LTF	D		
	GUILIN	A	LTF	D		
	GUIYANG	A	LTF	D		
	HAIKOU	A	LTF	D		
	HA NOI	A	LTF	D		
	KUNMING	A	LTF	D		
QINGDAO ACC	DALIAN	A	LTF	D		
	JINAN	A	LTF	D		
	SHANGHAI	A	LTF	D		
	INCHEON	A	LTF	D		
SANYA ACC	GUANGZHOU	A	LTF	D		
	HAIKOU	A	LTF	D		
	HA NOI	A	LTF	D		
	HO CHI MINH	A	LTF	D		
	HONG KONG	A	LTF	D		
	MANILA	A	LTF	D		

ATS REQUIREMENTS FOR SPEECH COMMUNICATIONS			CIRCUIT			REMARKS
TERMINAL I	TERMINAL II	TYPE	SERVICE	D/S	TO BE SWITCHED VIA	
1	2	3	4	5	6	7
SHANGHAI ACC	FUKUOKA	A	LTF	D		
	HEFEI	A	LTF	D		
	JINAN	A	LTF	D		
	NAHA	A	LTF	D		
SHENYANG ACC	BEIJING	A	LTF	D		
	DALIAN	A	LTF	D		
	HAILAR	A	LTF	D		
	HARBIN	A	LTF	D		
	PYONGYANG	A	LTF	D		
	VLADIVOSTOK	A	LTF	D		
SHENZHEN	MACAO	A	LTF	D		
TAIBEI ACC	GUANGZHOU	A	LTF	D		
	HONG KONG	D	LTF	D		
	MANILA	A	LTF	D		
	NAHA	D	LTF	D		
	SHANGHAI	A	LTF	D		
	INCHEON	A	LTF	D		
	XIAMEN	A	LTF	D		
TAIYUAN ACC	BEIJING	A	LTF	D		
	HOHHOT	A	LTF	D		
	JINAN	A	LTF	D		
	XI'AN	A	LTF	D		
	ZHENGZHOU	A	LTF	D		
URUMQI ACC	ALMA-ATA	A	RTF	D		
	BARNUAL	A	RTF	D		
	BISHEKEK	A	RTF	D		
	KHOVD	A	RTF	D		
	LAHORE	A	LTF	D		
	LANZHOU	A	LTF	D		
	RAWALPIND	A	LTF	D		
	ULAANBAATAR	A	LTF	D		
WUHAN ACC	CHANGSHA	A	LTF	D		
	CHENGDU	A	LTF	D		
	HEFEI	A	LTF	D		
	NANCHANG	A	LTF	D		
	ZHENGZHOU	A	LTF	D		
XIAMEN ACC	GUANGZHOU	A	LTF	D		
	NANCHANG	A	LTF	D		
	SHANGHAI	A	LTF	D		
	TAIBEI	A	LTF	D		
XI'AN ACC	CHENGDU	A	LTF	D		
	LANZHOU	A	LTF	D		
	TAIYUAN	A	LTF	D		
	ZHENGZHOU	A	LTF	D		
ZHANJIANG	HONG KONG	A	LTF	D		
ZHENGZHOU ACC	BEIJING	A	LTF	D		
	JINAN	A	LTF	D		
	TAIYUAN	A	LTF	D		

ATS REQUIREMENTS FOR SPEECH COMMUNICATIONS			CIRCUIT			REMARKS
TERMINAL I	TERMINAL II	TYPE	SERVICE	D/S	TO BE SWITCHED VIA	
1	2	3	4	5	6	7
	WUHAN	A	LTF	D		
	XI'AN	A	LTF	D		
ZHUHAI APP	HONG KONG	A	LTF	D		
	MACAO	D	LTF	D		
HONG KONG, China						
HONG KONG ACC	GUANGZHOU	D	LTF	D		
	MACAO	D	LTF	D		
	MANILA	A	LTF	D		
	SANYA	A	LTF	D		
	SHANTOU	A	LTF	D		
	ZHANJIANG	A	LTF	D		
	TAIBEI	D	LTF	D		
	ZHUHAI	A	LTF	D		
MACAO, China						
MACAO TWR	SHENZHEN	A	LTF	D		
	HONG KONG	D	LTF	D		
	ZHUHAI	D	LTF	D		
COOK IS.						
RAROTONGA	AUCKLAND	A	LTF	D		
	TAHITI/PAPEETE	A	LTF	D		
DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA						
PYONGYANG ACC	DALIAN	A	LTF	D		
	SHENYANG	A	LTF	D		
	INCHEON	A	LTF	D		RTF
	KHABAROVSK	A	LTF	D		
FIJI						
NADI ACC	ALOFI	A	LTF	D		
	APIA	A	LTF	D		
	AUCKLAND	A	LTF	S	BRISBANE	
	BRISBANE	A	LTF	D		
	HONIARA	A	LTF	S	SYDNEY	
	NAURU	A	IDD	D		
	NOUMEA	A	LTF	D		
	OAKLAND	A	LTF	D		
	PAGO PAGO	A	LTF	D		
	PORT VILA	A	LTF	D		
	TONGAPATU	A	IDD	D		
	WALLIS	A	LTF	D		
FRENCH POLYNESIA (France)						
TAHITI/PAPEETE ACC	AUCKLAND	A	LTF	IDD		
	ISLA DE PASCUA	A	LTF	D		
	OAKLAND	A	LTF	D		
	RAROTONGA	A	LTF	D		
GUAM (United States)						
GUAM I.	MOEN	A	LTF	D		
	YAP	A	LTF	D		
INDIA						
AGARTALA APP	KOLKATA	A	LTF	D		
	DHAKA	A	LTF	D		
AHMEDABAD APP	MUMBAI	A	LTF	D		
	KARACHI	A	LTF	D	MUMBAI	D/S
AMRITSAR APP	DELHI	A	LTF	D		

ATS REQUIREMENTS FOR SPEECH COMMUNICATIONS			CIRCUIT			REMARKS
TERMINAL I	**TERMINAL II**	**TYPE**	**SERVICE**	**D/S**	**TO BE SWITCHED VIA**	
1	**2**	**3**	**4**	**5**	**6**	**7**
	LAHORE	A	LTF	D		
KOLKATA ACC	AGARTALA	A	LTF	D		
	MUMBAI	A	LTF	D		
	DHAKA	A	LTF	D		
	DELHI	A	LTF	D		
	GUWAHATI	A	LTF	D		
	KATHMANDU	A	LTF	D		
	CHENNAI	A	LTF	D		
	NAGPUR	A	LTF	D		
	VARANASI	A	LTF	D		
	YANGON	A	LTF	D		
CHENNAI ACC	MUMBAI	A	LTF	D		
	KOLKATA	A	LTF	D		
	COLOMBO	A	LTF	D		
	KUALA LUMPUR	A	LTF	D		
	MEDAN	A	LTF	D		
	TIRUCHCHIRAPPALLI	A	LTF	D		
	TRIVANDRUM	A	LTF	D		
	YANGON	A	LTF	IDD		
DELHI ACC	AMRITSAR	A	LTF	D		
	MUMBAI	A	LTF	D		
	KOLKATA	A	LTF	D		
	KARACHI	A	LTF	D		D/S
	KATHMANDU	A	LTF	IDD		
	LAHORE	A	LTF	D		
	VARANASI	A	LTF	D		2D
GUWAHATI	KOLKATA	A	LTF	D		
	DHAKA	A	LTF	D		
MUMBAI ACC	AHMEDABAD	A	LTF	D		
	KOLKATA	A	LTF	D		
	DELHI	A	LTF	D		
	KARACHI	A	LTF	D		2D
	CHENNAI	A	LTF	D		
	MALE	A	LTF	IDD		
	MAURITIUS	A	LTF	IDD		
	MOGADISHU	A	LTF	IDD		
	MUSCAT/SEEB	A	LTF	D		
	NAGPUR	A	LTF	D		
	SEYCHELLES	A	LTF	D		
NAGPUR APP	MUMBAI	A	LTF	D		
	KOLKATA	A	LTF	D		
TIRUCHCHIRAPPALLI APP	CHENNAI	A	LTF	D		
TRIVANDRUM ACC	CALICUT	A	LTF	D		
	COLOMBO	A	LTF	IDD		
	CHENNAI	A	LTF	D		
	MALE	A	LTF	D		
VARANASI ACC	KOLKATA	A	LTF	D		

ATS REQUIREMENTS FOR SPEECH COMMUNICATIONS			CIRCUIT			REMARKS
TERMINAL I	**TERMINAL II**	**TYPE**	**SERVICE**	**D/S**	**TO BE SWITCHED VIA**	
1	**2**	**3**	**4**	**5**	**6**	**7**
	DELHI	A	LTF	D		
	KATHMANDU	A	LTF	D		
INDONESIA						
BALI ACC	BRISBANE	A	LTF	D		
	JAKARTA	A	LTF	D		
	KUPANG	A	LTF	D		
	MANADO	A	LTF	D		
	SURABAYA	A	LTF	D		
	UJUNG PANDANG	A	LTF	D		
BATAM TWR	JAKARTA	A	LTF	D		
	SINGAPORE	D	LTF	D		
	TANJUNG PINANG	D	LTF	D		
BIAK APP	DARWIN	A	LTF	D		
	JAYAPURA	A	LTF	D		
	MANILA	A	LTF	D		
	OAKLAND	A	LTF	D		
	UJUNG PANDANG	A	LTF	D		
JAKARTA ACC	BALI	A	LTF	D		
	BATAM	A	LTF	D		
	KOTA KINABALU	A	LTF	S	SINGAPORE	
	KUALA LUMPUR	A	LTF	S	SINGAPORE	
	MANILA	A	LTF	D		
	MEDAN	A	LTF	D		
	PADANG	A	LTF	D		
	PEKAN BARU	X	LTF	D		
	PERTH	A	LTF	D		
	PONTIANAK	A	LTF	D		
	RANAI	A	LTF	D		
	SINGAPORE	A	LTF	D		
	SYDNEY	X	LTF	D		
	TANJUNG PINANG	A	LTF	D		
	UJUNG PANDANG	A	LTF	D		
JAYAPURA APP	BIAK	A	LTF	D		
	PORT MORESBY	A	LTF	D		
	VANIMO	A	LTF	D		
KUPANG APP	BALI	A	LTF	D		
	DARWIN	A	LTF	D		
MANADO	BALI	A	LTF	D		
	UJUNG PANDANG	A	LTF	D		
MEDAN ACC	COLOMBO	A	LTF	D		
	JAKARTA	A	LTF	D		
	KUALA LUMPUR	A	LTF	D		
	CHENNAI	A	LTF	D		
	PADANG	A	LTF	D		

ATS REQUIREMENTS FOR SPEECH COMMUNICATIONS			CIRCUIT			REMARKS
TERMINAL I	**TERMINAL II**	**TYPE**	**SERVICE**	**D/S**	**TO BE SWITCHED VIA**	
1	**2**	**3**	**4**	**5**	**6**	**7**
	SINGAPORE	A	LTF	S	JAKARTA	
PADANG	JAKARTA	A	LTF	D		
	MEDAN	A	LTF	D		
	PEKAN BARU	A	LTF	D		
PEKAN BARU APP	JAKARTA	X	LTF	D		
	KUALA LUMPUR	A	LTF	D		
	MALACCA	A	LTF	D		
	MEDAN	A	LTF	D		
	SINGAPORE	A	LTF	D		
PONTIANAK TWR	JAKARTA	A	LTF	D		
	KUCHING	A	RTF	D		
	RANAI	A	LTF	D		
	SINGAPORE	A	LTF	D		
	TANJUNG PINANG	A	LTF	D		
RANAI	JAKARTA	A	LTF	D		
	KUCHING	A	LTF	D		
	PONTIANAK	A	LTF	D		
SURABAYA	BALI	A	LTF	D		
TANJUNG PINANG	BATAM	D	LTF	D		
	JAKARTA	A	LTF	D		
	PONTIANAK	A	LTF	D		
	SINGAPORE	D	LTF	D		
UJUNG PANDANG	BALI	D	LTF	D		
	BIAK	A	LTF	D		
	BRISBANE	A	LTF	D		
	JAKARTA	A	LTF	D		
	KOTA KINBALU	A	LTF	D		
	MANADO	A	LTF	D		
	MANILA	A	LTF	S	JAKARTA	
	PORT MORESBY	A	LTF	S	JAKARTA, SYDNEY	
	OAKLAND	A	LTF	D		
JAPAN						
FUKUOKA ACC	INCHEON	A	LTF	D		
	SHANGHAI	A	LTF	D		
NAHA ACC	MANILA	A	LTF	D		
	OAKLAND	A	LTF	D		
	SHANGHAI	A	LTF	D		
	INCHEON	A	LTF	D		
	TAIBEI	A	LTF	D		
SAPPORO ACC	KHABAROVSK	D	LTF	D		
	VLADIVOSTOK	A	LTF	D		
	YUZHNO SAKHALINSK	A	LTF	D		
TOKYO ACC	ANCHORAGE	A	LTF	S		
	ANCHORAGE	D	LTF	D		
	OAKLAND	A	LTF	D		

ATS REQUIREMENTS FOR SPEECH COMMUNICATIONS			CIRCUIT			REMARKS
TERMINAL I	**TERMINAL II**	**TYPE**	**SERVICE**	**D/S**	**TO BE SWITCHED VIA**	
1	**2**	**3**	**4**	**5**	**6**	**7**
	INCHEON	A	LTF	D		
JOHNSTON I. (United States)						
JOHNSTON I. TWR	OAKLAND	A	LTF	D		
KIRIBATI						
TARAWA	OAKLAND	A	LTF	D		
KIRITIMATI I.	OAKLAND	A	LTF	D		
LAO PEOPLE'S DEMOCRATIC REPUBLIC						
VIENTIANE FIC	BANGKOK	A	LTF	D		
	HA NOI	A	LTF	D		
	HO CHI MINH	A	LTF	D		
	KUNMING	A	LTF	D		
	PHNOM PENH	A	LTF	S	BANGKOK	
	YANGON	A	LTF	S	BANGKOK	
MALAYSIA						
JOHOR BAHRU APP	SINGAPORE	D	LTF	D		
	KUALA LUMPUR	A	LTF	D		
KOTA KINABALU ACC	BRUNEI	A	LTF	D		
	JAKARTA	A	LTF	S	SINGAPORE	
	KUALA LUMPUR	A	LTF	D		
	KUCHING	A	LTF	D		
	MANILA	A	LTF	D		
	MIRI	A	LTF	D		
	SINGAPORE	A	LTF	D		
	TAWAU	A	LTF	D		
	UJUNG PANDANG	A	LTF	D		
KUALA LUMPUR ACC	BANGKOK	A	LTF	D		
	HO CHI MINH	A	LTF	D		
	JAKARTA	A	LTF	S	SINGAPORE	
	JOHOR BAHRU	A	LTF	D		
	KUANTAN	A	LTF	D		
	KOTA KINABALU	A	LTF	D		
	CHENNAI	A	LTF	D		
	MALACCA	A	LTF	D		
	MEDAN	A	LTF	D		
	PEKAN BARU	A	LTF	D		
	SINGAPORE	D	LTF	D		
KUANTAN APP	SINGAPORE	A	LTF	D		
	KUALA LUMPUR	A	LTF	D		
KUCHING APP	KOTA KINABALU	A	LTF	D		
	PONTIANAK	A	LTF	D		
	RANAI	A	LTF	D		
	SINGAPORE	A	LTF	D		
LABUAN	BRUNEI	A	LTF	D		
LIMBANG	BRUNEI	A	LTF	D		
MALACCA APP	KUALA LUMPUR	A	LTF	D		

ATS REQUIREMENTS FOR SPEECH COMMUNICATIONS			CIRCUIT			REMARKS
TERMINAL I	**TERMINAL II**	**TYPE**	**SERVICE**	**D/S**	**TO BE SWITCHED VIA**	
1	**2**	**3**	**4**	**5**	**6**	**7**
	PEKAN BARU	A	LTF	D		
MIRI	BRUNEI	A	LTF	D		
	KOTA KINABALU	D	LTF	D		
TAWAU APP	KOTA KINABALU	A	LTF	D		
MALDIVES						
MALE FIC	COLOMBO	A	LTF	IDD		
	MUMBAI	A	LTF	IDD		
	CHENNAI	A	LTF	IDD		
	MAURITIUS	A	LTF	IDD		
	MELBOURNE	A	LTF	IDD		
	TRIVANDRUM	A	LTF	IDD		
MARSHALL IS.						
MAJURO APP	OAKLAND	A	LTF	D		
KWAJALEIN APP	OAKLAND	A	LTF	D		
MICRONESIA, FEDERATED STATES OF						
KOSRAE APP	OAKLAND	A	LTF	D		
MOEN APP	GUAM I.	A	LTF	D		
	OAKLAND	A	LTF	D		
POHNPEI APP	OAKLAND	A	LTF	D		
YAP APP	GUAM I.	A	LTF	D		
	OAKLAND	A	LTF	D		
MONGOLIA						
ULAANBAATAR ACC	ABAKAN	A	LTF	D		
	BARNAUL	A	LTF	D		
	BEIJING	A	LTF	D		
	HUHHOT	A	LTF	D		
	IRKUTSK	A	LTF	D		
	KYZYL	A	LTF	D		
	LANZHOU	A	LTF	D		
	MUREN	A	LTF	D		
	URUMQI	A	LTF	D		
MYANMAR						
YANGON ACC	BANGKOK	A	LTF	D		
	KOLKATA	A	LTF	D		
	DHAKA	A	LTF	S	BANGKOK	
	KUNMING	A	LTF	S	BANGKOK	
	CHENNAI	A	LTF	IDD		
	VIENTIANE	A	LTF	S	BANGKOK	
NAURU						
NAURU FIC	HONIARA	A	LTF	S	SYDNEY	
	NADI	A	LTF	D		
	PORT MORESBY	A	LTF	S	SYDNEY	
NEPAL						
KATHMANDU	KOLKATA	A	LTF	D		
	DELHI	A	LTF	IDD		
	LASHA	A	LTF	D		
	VARANASI	A	LTF	D		

ATS REQUIREMENTS FOR SPEECH COMMUNICATIONS			CIRCUIT			REMARKS
TERMINAL I	**TERMINAL II**	**TYPE**	**SERVICE**	**D/S**	**TO BE SWITCHED VIA**	
1	**2**	**3**	**4**	**5**	**6**	**7**
NEW CALEDONIA (France)						
NOUMEA/LA TONTOUTA APP	HONIARA	A	LTF	S	SYDNEY, NADI	
	NADI	A	LTF	D		
	PORT VILA	A	LTF	S	NADI	
NEW ZEALAND						
AUCKLAND	ALOFI	A	LTF	IDD		
	CHRISTCHURCH	A	LTF	D		
	ISLA DE PASCUA	A	LTF	IDD		
	NADI	A	LTF	D		
	OAKLAND	A	LTF	IDD		
	RAROTONGA	A	LTF	IDD		
	BRISBANE	A	LTF	D		
	TAHITI/PAPEETE	A	LTF	IDD		
NIUE (New Zealand)						
ALOFI APP	AUCKLAND	A	LTF	IDD		
	NADI	A	LTF	D		
	PAGO PAGO	A	LTF	D		
NORTHERN MARIANA IS. (United States)						
SAIPAN APP	OAKLAND	A	LTF	D		
PAKISTAN						
KARACHI ACC	AHMEDABAD	A	LTF	S	MUMBAI	D/S
	MUMBAI	A	LTF	D		2D
	DELHI	A	LTF	D		D/S
	KABUL	A	LTF	D		
	MUSCAT	A	LTF	D		2D
	TEHRAN	A	LTF	D		2D
LAHORE ACC	AMRITSAR	A	LTF	D		
	DELHI	A	LTF	D		2D
	DUSHANBE	A	LTF	D		(Planned)
	KABUL	A	LTF	D		
	URUMQI	A	LTF	D		
PAPUA NEW GUINEA						
PORT MORESBY ACC	BRISBANE	A	LTF	D		
	CAIRNS	A	LTF	D		
	HONIARA	A	LTF	D		
	JAYAPURA	A	LTF	D		
	OAKLAND	A	LTF	D		
	UJUNG PANDANG	A	LTF	S	SYDNEY, JAKARTA	
PHILIPPINES						
DAVAO APP	MACTAN	A	LTF	D		
	MANILA					NC
LAOAG APP	MANILA	A	LTF	D		
MACTAN APP	DAVAO	A	LTF	D		
	MANILA	A	LTF	D		
	ZAMBOANGA	A	LTF	D		
	TAGBILARAN TOWER	A	LTF	D		
MACTAN ACC	BACOLOD APP	A	LTF	D		
	LAGUINDINGAN APP	A	LTF	D		

ATS REQUIREMENTS FOR SPEECH COMMUNICATIONS			CIRCUIT			REMARKS
TERMINAL I	**TERMINAL II**	**TYPE**	**SERVICE**	**D/S**	**TO BE SWITCHED VIA**	
1	**2**	**3**	**4**	**5**	**6**	**7**
BACOLOD APP	ILOILO TOWER	A	LTF	D		
KALIBO APP	ROXAS TOWER	A	LTF	D		
	CATICLAN TOWER	A	LTF	D		
MANILA ACC	DAVAO					
	HO CHI MINH	A	LTF	D		
	HONG KONG	A	LTF	D		
	KOTA KINABALU	A	LTF	D		
	LAOAG	A	LTF	D		
	MACTAN	A	LTF	D		
	NAHA	A	LTF	D		
	FUKUOKA	A	LTF	D		
	OAKLAND	D	LTF	D		
	SANYA	A	LTF	D		Planned
	SINGAPORE	A	LTF	D		
	SUBIC BAY	A	LTF	D		
	TAIBEI	D	LTF	D		
	UJUNG PANDANG	D	LTF	D		
	CLARK	A	LTF	D		
	LEGASPI	A	LTF	D		
	BACOLOD	A	LTF	D		
	LAGUINDINGAN	A	LTF	D		
REPUBLIC OF KOREA						
INCHEON ACC	DALIAN	A	LTF	D		
	FUKUOKA	A, D	LTF	D		A type connected
	PYONGYANG	A	LTF	D		
	TOKYO	A, D	LTF	D		D type connected
SAMOA						
APIA/FALEOLO	AUCKLAND	A	LTF	D		
	PAGO PAGO	A	LTF	D		
	NADI	A	LTF	D		
	TONGATAPU	A	LTF	D		
SINGAPORE						
SINGAPORE ACC	BATAM	D	LTF	D		
	HO CHI MINH	A	LTF	D		
	JAKARTA	A	LTF	D		
	JOHOR BAHRU	D	LTF	D		
	KOTA KINABALU	A	LTF	D		
	KUALA LUMPUR	D	LTF	D		
	KUANTAN	A	LTF	D		
	KUCHING	A	LTF	D		
	MANILA	A	LTF	D		
	MEDAN	A	LTF	S	JAKARTA	
	PEKAN BARU	A	LTF	D		
	PONTIANAK	A	LTF	D		
	TANJUNG PINANG	D	LTF	D		
SOLOMON IS.						
HONIARA ACC	BRISBANE	A	LTF	D		
	NADI	A	LTF	S	SYDNEY	

ATS REQUIREMENTS FOR SPEECH COMMUNICATIONS			CIRCUIT			REMARKS
TERMINAL I	**TERMINAL II**	**TYPE**	**SERVICE**	**D/S**	**TO BE SWITCHED VIA**	
1	**2**	**3**	**4**	**5**	**6**	**7**
	NAURU	A	LTF	S	SYDNEY	
	NOUMEA	A	LTF	S	SYDNEY, NADI	
	OAKLAND	A	LTF	S		
	PORT MORESBY	A	LTF	D		
SRI LANKA						
COLOMBO ACC	BRISBANE	A	LTF	D		
	CHENNAI	A	LTF	D		
	MALE	A	LTF	D		
	MEDAN	A	LTF	D		
	TRIVANDRUM	A	LTF	D		
THAILAND						
BANGKOK ACC	HO CHI MINH	A	LTF	D		
	KUALA LUMPUR	A	LTF	D		
	PHNOM PENH	A	LTF	D		
	VIENTIANE	A	LTF	D		
	YANGON	A	LTF	D		
TONGA						
TONGATAFU APP	AUCKLAND	A	LTF	D		
	NADI	A	IDD	D		
TUVALU						
FUNAFUTI APP	NADI					
UNITED STATES						
ANCHORAGE ACC	ANADYR	A	LTF	D		
	MAGADAN	A	LTF	D		
	OAKLAND	A	LTF	D		
	TOKYO	A	LTF	S	OAKLAND	
	TOKYO	D	LTF	D		
	VANCOUVER	A	LTF	D		
	PETROPAVLOVSK-KAMCHATSKY	A	LTF	D		
	VANCOUVER	D	LTF	D		
OAKLAND	AUCKLAND	A	LTF	IDD		
	BIAK	A	LTF	D		
	BRISBANE	A	LTF	D		
	KIRITIMATI I. TWR	A	LTF	D		
	GUAM I.	A	LTF	D		
	HONIARA	A	LTF	D		
	JOHNSTON I. TWR	A	LTF	D		
	KOROR	A	LTF	D		
	KOSRAE	A	LTF	D		
	KAWJALEIN	A	LTF	D		
	MAJURO ATOLL	A	LTF	D		
	MANILA	D	LTF	D		
	MOEN	A	LTF	D		
	NADI	A	LTF	D		
	NAHA	A	LTF	D		
	NAURU	A	LTF	D		
	PAGO PAGO APP	A	LTF	D		
	POHNPEI	A	LTF	D		
	PORT MORESBY	A	LTF	D		
	SAIPAN	A	LTF	D		
	SAPPORO	A	LTF	D		
	TAHITI	A	LTF	D		
	TARAWA TWR	A	LTF	D		

ATS REQUIREMENTS FOR SPEECH COMMUNICATIONS			CIRCUIT			REMARKS
TERMINAL I	**TERMINAL II**	**TYPE**	**SERVICE**	**D/S**	**TO BE SWITCHED VIA**	
1	**2**	**3**	**4**	**5**	**6**	**7**
	TOKYO	A	LTF	D		
	UJUNG PANDANG	A	LTF	D		
	VANCOUVER	D	LTF	D		
	YAP	A	LTF	D		
VANUATU						
PORT VILA	NADI	A	LTF	D		
	NOUMEA	A	LTF	S		
VIET NAM						
HA NOI ACC	NANNING	A	LTF	D		
	HO CHI MINH	A	LTF	D		
	KUNMING	A	LTF	D		
	SANYA	A	LTF	D		
	VIENTIANE	A	LTF	D		
HO CHI MINH ACC	BANGKOK	A	LTF	D		
	HA NOI	A	LTF	D		
	HONG KONG	A	LTF	D		
	KUALA LUMPUR	A	LTF	D		
	MANILA	A	LTF	D		
	PHNOM PENH	A	LTF	D		
	SANYA	A	LTF	D		
	SINGAPORE	A	LTF	D		
	VIENTIANE	A	LTF	D		
WALLIS AND FUTUNA IS. (France)						
WALLIS	NADI	A	LTF	D		Via IDD

TABLE CNS II-4 HF NETWORK DESIGNATORS

EXPLANATION OF THE TABLE

Column

1 Name of station, preceded by its location indicator.
2 Network designators assigned to the facility providing HF radiotelephony en-route aeronautical communications (selected from the provisions of the allotment plan in Appendix S27 to the ITU Radio Regulations).

NOTES

- *The ICAO designators for HF MWARA and VOLMET networks in the Asia and Pacific regions are derived from the ITU allotment area abbreviations as contained in Appendix S27 to the ITU Radio Regulations. The additionally sectorised sub-networks in accordance with provision 27/21 of the ITU Radio Regulation Appendix 27 were agreed and allocated by ASIA/PAC/3 RAN Meeting and consequential APANPIRG meetings.*

ITU allotment area:

- *Two- and three-letter alpha entries indicate major world air route areas (MWARA) and*
  Four-letter alpha entries indicate VOLMET areas. Few frequencies selected from RDARA network are also included for en-route aeronautical communication.

Location Indicator and Name of Location		**HF en-route family**
1		**2**
OAKB	Kabul	MID 2
YBBN	Brisbane	VASIA
YBBB	Brisbane	
YPXM	Christmas Is	SEA
YPDN	Darwin	SEA
YMMM	Melbourne	
YPPM	Perth	SW, NW, INO1 and SEA3
VGHS	Dhaka	SEA 1A
VGFR	PARO/Paro	SEA 1A
VDPP	Phnom-Penh	SEA 2
ZBPE	Beijing	NP, EA 1, VASIA
ZGZU	Guangzhou	EA 1, SEA 1A, VASIA

Location Indicator and Name of Location		HF en-route family
1		2
ZPKM	Kunming	EA 1, SEA 1A
ZGSY	Sanya	EA , SEA
ZSHA	Shanghai	CWP, EA 1, NP
ZYSH	Shenyang	EA 1
RCSS	Taibei	CWP
ZWUQ	Urumqi	MID 2, EA 1
VHHK	Hong Kong	CWP, SEA 2, VPAC
NCRG	Avarua/Rorotonga	SP, RDARA 9
ZKKK	Pyongyang	CWP, EA 1, EA 2, NCA 3
NFFN	Nadi	SP, RDARA 9
NTTT	Tahiti	SP
VOMF	Chennai	SEA 1B
VIDF	Delhi	MID 2
VECF	Kolkata	SEA 1A, VASIA
VABF	Mumbai (FIC)	MID 2, INO, VASIA
WADZ	Bali	SEA 3
WIIZ	Jakarta	SEA 3
WIMZ	Medan	SEA 1B
WAAZ	Ujungpandang	SEA 3
RORG	Naha	CWP
RJDG	Fukuoka	CWP, NP
RJTG	Tokyo	CWP, NP, VPAC
NGTA	Tarawa/Bonriki Int'l.	SP, RDARA 9
VLVT	Vientiane	SEA 2
WBFC	Johor Bahru	SEA 1
WMFC	Kuala Lumpur	SEA 1B, SEA 2
VRMM	Male	

Location Indicator and Name of Location		HF en-route family
1		2
ZMUB	Ulaan Baatar	NCA 3, EA 1, EA 2
VYYY	Yangon	SEA 1A
ANAU	Nauru	CWP, RDARA 9
VNSM	Kathmandu	SEA 1A, MID 2
NZZO	Auckland	SP, VPAC
NIUE		RDARA 9
OPKR OPLR	Karachi Lahore	MID 2, VASIA MID 2
AYPY	Port Moresby	CWP
RPHI	Manila	CWP, SEA 2
RKRR	Incheon	NCA 3, CWP
NSFA	Faleolo	SP, RDARA 9
WSJC	Singapore	SEA 2, SEA 3, VASIA
AGGH	Honiara	RDARA 9
VCCC	Colombo	SEA 1B, INO
VTBB	Bangkok	VASIA
NFTF	Fua'amotu Int'l.	SP, RDARA 9
NGFU	Funafuti Int'l.	SP, RDARA 9
PHZH	Honolulu	SP, NP, CEP, CWP, VPAC
NVVV	Port Vila	RDARA 9
VVNB VVTS	Ha Noi Ho Chi Minh	SEA 2 SEA 2
NLWW	Wallis/Hihifo	RDARA 9

HF FREQUENCIES AND THEIR ICAO NETWORK DESIGNATORS BASED ON ITU APPENDIX S27 ALLOTMENT AREAS

Frequency (kHz)	ITU allotment area	CEP-1	CEP-2	CWP-1	CWP-2	EA-1	EA-2	INO-1	MID-2	NCA-3	NP	RDARA-9	SEA-1A	SEA-1B	SEA-2	SEA-3	SP	VASIA	VPAC	Remarks
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
2 863	V PAC																		X	
2 869	CEP		X																	
2 932	NP										X									
2 947	9											X								
2 965	V ASIA																	X		
2 998	CWP				X															
3 004	NCA									X										
3 016	EA					X														
3 413	CEP	X																		
3 425	9B											X								
3 455	CWP			X																
3 458	V ASIA																		X	
3 467	MID, SP								X								X			
3 470	SEA													X		X				
3 473	MID (1)																			
3 476	INO							X												
3 485	EA, SEA						X								X					
3 491	SEA												X							
4 657	CEP	X	X																	
4 666	CWP				X															
5 547	CEP		X																	
5 559	SP																X			
5 574	CEP	X																		
5 628	NP											X								
5 634	INO							X												
5 643	SP																X			
5 649	SEA														X					
5 652	CWP																			
5 655	EA, SEA						X								X					
5 658	MID								X											
5 661	CWP																			
5 664	NCA									X										
5 670	EA (3)													X						
5 673	V ASIA																	X		
6 532	CWP			X																
6 553	9											X								
6 556	SEA												X			X				
6 562	CWP																			
6 571	EA					X														
6 625	MID (1)																			
6 655	NP										X									
6 661	NP										(1)									
6 673	CEP		X																	
6 676	V ASIA																	X		
6 679	V PAC																		X	
8 828	V PAC																		X	
8 843	CEP	X																		
8 846	9											X								
8 849	V ASIA																	X		
8 867	SP																X			
8 879	INO							X									X			
8 897	EA					X														
8 903	CWP			X	X															

Frequency (kHz)	ITU allotment area	CEP-1	CEP-2	CWP-1	CWP-2	EA-1	EA-2	INO-1	MID-2	NCA-3	NP	RDARA-9	SEA-1A	SEA-1B	SEA-2	SEA-3	SP	VASIA	VPAC	Remarks
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
8 942	SEA														X					
8 951	(3)										X									
10 018	MID								X											
10 039	RDARA 3B, C(3)									X										
10 042	EA					X														
10 048	NP										X									
10 057	CEP	X																		
10 066	SEA												X							
10 081	CWP			X	X															
10 084	SP																(1)			
11 282	CEP		X																	
11 285	SEA													X						
11 297	(3)														X					
11 327	SP																(1)			
11 330	NP										X									
11 339	9											X								
11 384	CWP				X															
11 387	V ASIA																	X		
11 396	EA, SEA						X								X	X				
13 261	(3)																X			
13 273	(3)										X									
13 282	V PAC																		X	
13 285	V ASIA																	X		
13 288	MID, (3)		X						X											
13 297	EA					X														
13 300	CWP			X	X															
13 303	EA, NCA									X										
13 306	NCA, (1) INO							X												
13 309	EA, SEA						X								X					
13 318	SEA													X		X				
13 354	(3)	X																		
17 904	(4)	X	X	X	X						X						X			
17 907	EA, SEA						X							X	X	X				
17 958	NCA									X										
17 961	INO							X												

TABLE CNS II-APAC-1-ATS INTER-FACILITY DATA COMMUNICATION (AIDC) IMPLEMENTATION PLAN

EXPLANATION OF THE TABLE

Column

1 State/Administration – the name of the State/Administration;

2 Location of AIDC end system – the location of the AIDC end system under the supervision of State/Administration identified in column 1;

3 AIDC Pair – the correspondent AIDC end system;

Location – location of the correspondent AIDC end system

State/Administration – the name of the State/Administration responsible for management of the correspondent AIDC end system

A "/" is placed between the location and State/Administration

4 Transmission Means – the transmission means used for the AIDC messages exchanged between the corresponding AIDC pair, AFTN, AFTN/AMHS;

5 Target Date of Implementation – date of implementation of the AIDC end system in the form of xQyyyy or yyyy (quarter year);

6 Remarks – any additional information describing the AIDC end system or the AIDC service between the corresponding AIDC pair.

State/Administration	Location of AIDC System ATSU1	AIDC System Pair ATSU2 /Correspondent State – Administration	Transmission Means	Target date of Implementation xQyyyy or yyyy	Remarks
1	2	3	4	5	6
AFGHANISTAN	Kabul ACC	Kabul ACC /Afghanistan	AFTN/AMHS		
		Karachi ACC/Pakistan	AFTN		
AUSTRALIA	Brisbane ACC	Oakland ARTCC /USA	AFTN	Implemented	
			AFTN/AMHS		
		Auckland ACC /New Zealand	AFTN	Implemented	ICD V.1.0
			AFTN/AMHS		
		Melbourne ACC /Australia	AFTN	Implemented	
		Ujung Pandang ACC /Indonesia	AFTN/Direct Link	Implemented	LOA to be updated
		Nadi ACC/Fiji	AFTN	Implemented	
			AFTN/AMHS	Implemented	
		Port Moresby/PNG	AFTN/AMHS	4Q2018	
	Melbourne ACC	Brisbane ACC /Australia	AFTN	Implemented	
			AFTN/AMHS		
		Jakarta ACC /Indonesia	AFTN		
			AFTN/AMHS	4Q2019	
		Mauritius ACC /Mauritius	AFTN	Implemented	
			AFTN/AMHS		
BANGLADESH	Dhaka ACC	Kolkata ACC /India	AFTN/AMHS	4Q2018	
		Yangon ACC /Myanmar	AFTN/AMHS	4Q2018	ICD V.2.0
CAMBODIA	Phnom Penh ACC	Bangkok ACC /Thailand	AMHS	3Q2019	
		Vientiane ACC/Laos PDR	AFTN		Operational test will be conducted from June 2018
		Ho Chi Minh ACC/Viet Nam	AFTN/AMHS	2016	
CHINA	Beijing ACC	Ulaanbaatar ACC/Mongolia	AFTN		
	Sanya ACC	Hong Kong ACC /Hong Kong China	AFTN	Implemented	
		Ho Chi Minh ACC /Vietnam	AFTN		
	Kunming ACC	Yangon ACC /Myanmar	AFTN		
	Lhasa ACC	Kathmandu ACC/Nepal	AFTN		
	Guangzhou ACC	Hong Kong ACC /Hong Kong, China	AFTN		Operational trail planned for 2Q2018
	Taibei ACC	Hong Kong ACC /Hong Kong, China	AFTN	Implemented	

State/Administration	Location of AIDC System ATSU1	AIDC System Pair ATSU2 /Correspondent State – Administration	Transmission Means	Target date of Implementation xQyyyy or yyyy	Remarks
1	2	3	4	5	6
		Fukuoka ATMC/Japan	AFTN	Implemented	ICD V.3.0
		Manila ACC/Philippines	AFTN		
			AFTN/AMHS	4Q2018	
	Urumqi ACC	Lahore ACC /Pakistan	AFTN/AMHS		
	Dalian ACC	Incheon ACC /Republic of Korea	AFTN	Implemented	ICD V.3.0 (trial operation)
	Shanghai ACC	Fukuoka ATMC /Japan	AFTN		
HONG KONG, CHINA	Hong Kong ACC	Guangzhou ACC /China	AFTN		Operational trail planned for 2Q2018
		Sanya ACC /China	AFTN	Implemented	
		Manila ACC /Philippines	AFTN		Coordination for technical test on the new ATM system – on going
		Taibei ACC /China	AFTN	Implemented	
MACAO, CHINA	Macao ATZ				Automatic transfer of control with adjacent ATC units is applicable instead of AIDC
FIJI	Nadi ACC	Auckland ACC /New Zealand	AFTN	Implemented	ICD V.1.0
		Brisbane ACC /Australia	AFTN/AMHS	Implemented	ICD V. 1.0
		Oakland ARTCC /USA	AFTN/AMHS	Implemented	ICD V.1.0
FRANCE ***FRENCH POLYNESIA*** ***NEW CALEDONIA***	Papeete ACC	Auckland ACC /New Zealand	AFTN	Implemented	ICD V. 2.0
		Oakland ARTCC /USA	AFTN	Implemented	
INDIA	Ahmedabad ACC	Karachi ACC /Pakistan	AFTN	4Q2018	LOA signed for test trials
	Chennai ACC	Colombo ACC / Sri Lanka	AFTN/AMHS	4Q2018	
		Jakarta ACC /Indonesia	AFTN	4Q2019	
		Kuala Lumpur ACC / Malaysia	AFTN	4Q2018	ICD V.3.0 (LOA to be updated 4Q18)
		Male ACC /Maldives	AFTN	3Q2018	LOA signed for trial operations
		Yangon ACC /Myanmar	AFTN	4Q2018	ICD V.2.0
	Delhi ACC	Karachi ACC /Pakistan	AFTN	1Q2019	
		Lahore ACC /Pakistan	AFTN	1Q2019	
	Kolkata ACC	Dhaka ACC /Bangladesh	AFTN/AMHS	4Q2018	
		Yangon ACC /Myanmar	AFTN	4Q2018	ICD V.2.0
		Kathmandu ACC /Nepal	AFTN		

State/Administration	Location of AIDC System ATSU1	AIDC System Pair ATSU2 /Correspondent State – Administration	Transmission Means	Target date of Implementation xQyyyy or yyyy	Remarks
1	2	3	4	5	6
	Mumbai ACC	Karachi ACC /Pakistan	AFTN/AMHS	1Q2019	
		Male ACC /Maldives	AFTN	3Q2018	
		Muscat ACC /Oman	AFTN	4Q2018	
		Seychelles ACC / Mauritius	AFTN		
	Trivandrum ACC	Male ACC/Maldives	AFTN	3Q2018	LOA for test trials signed
	Varanasi ACC	Kathmandu ACC /Nepal	AFTN		
INDONESIA	Jakarta ACC	Melbourne /Australia	AFTN/AMHS	4Q2019	
		Colombo ACC / Sri Lanka	AFTN/AMHS	4Q2019	
		Singapore ACC /Singapore	AFTN/AMHS	4Q2019	ICD V.3.0
		Kuala Lumpur ACC / Malaysia	AFTN	4Q2019	ICD V.3.0
		Kota Kinabalu ACC /Malaysia	AFTN	4Q2019	
		Chennai ACC /India	AFTN	4Q2019	
	Ujung Pandang ACC	Brisbane ACC /Australia	AFTN/Direct Link	Implemented	LOA to be updated
		Oakland ARTCC /USA	AFTN/AMHS		Subject to Indonesia to join CRV
		Port Moresby ACC/ PNG	AFTN		
		Kota Kinabalu ACC/Malaysia	AFTN		
		Manila ACC/Philippines	AFTN/AMHS	4Q2018	Technical tests until 4Q2018
JAPAN	Fukuoka ATMC	Manila ACC/Philippines	AFTN/AMHS	1Q2019	
		Anchorage ACC /USA	AFTN	Implemented	ICD V.2.0
		Incheon ACC /Republic of Korea	AFTN	Implemented	ICD V.1.0
		Oakland ARTCC /USA	AFTN	Implemented	ICD V.2.0
		Shanghai ACC /China	AFTN		
		Taibei ACC /Taibei, China	AFTN	Implemented	ICD V.3.0
LAO PEOPLE'S DEMOCRATIC REPUBLIC	Vientiane ACC	Bangkok ACC /Thailand	AFTN/AMHS	3Q2019	Test conducted in 2017
		Hanoi ACC /Veitnam	AFTN/AMHS		Test conducted in 2017- on-going
		Phnom Penh ACC /Cambodia	AFTN		Operational test will be conducted from June 2018
		Yangoon ACC/ Myanmar	AFTN	4Q2018	ICD V.2.0
		Ho Chi Minh ACC/ Vietnam	AFTN/AMHS		

State/Administration	Location of AIDC System ATSU1	AIDC System Pair ATSU2 /Correspondent State – Administration	Transmission Means	Target date of Implementation xQyyyy or yyyy	Remarks
1	2	3	4	5	6
MALAYSIA	Kuala Lumpur ACC	Bangkok ACC /Thailand	AFTN	3Q2019	ICD V.3.0
		Singapore ACC /Singapore	AFTN	2Q2018	ICD V.3.0
		Chennai ACC /India	AFTN	4Q2018	ICD V.3.0 (LOA to be updated 4Q18)
		Ho Chi Minh ACC /Vietnam	AFTN		
		Jakarta ACC /Indonesia	AFTN	4Q2019	ICD V.3.0
	Kota Kinabalu ACC	Ujung Pandang ACC /Indonesia	AFTN		
		Manila ACC /Philippines	AFTN/AMHS	4Q2019	
		Singapore ACC /Singapore	AFTN/AMHS	4Q2020	ICD V.3.0
		Jakarta ACC /Indonesia	AFTN	4Q2019	
	Kuching ACC	Singapore ACC /Singapore	AFTN	4Q2020	ICD V.3.0
MALDIVES	Male ACC	Mumbai ACC/India	AFTN	3Q2018	
		Chennai ACC /India	AFTN	3Q2018	LOA signed for trial operations
		Mauritius ACC/Mauritius	AFTN		
		Colombo ACC/Sri Lanka	AFTN	2018	
		Trivandrum ACC/India	AFTN	3Q2018	LOA for test trials signed
MONGOLIA	Ulaanbaatar ACC	Beijing ACC/ China	AFTN	2016	
MYANMAR	Yangon ACC	Bangkok ACC /Thailand	AFTN/AMHS	3Q2019	ICD V.2.0
		Kolkata ACC /India	AFTN	4Q2018	
		Chennai ACC /India	AFTN	4Q2018	ICD V.2.0
		Kunming ACC /China	AFTN		
		Vientianne ACC /Lao PDR	AFTN	4Q2018	ICD V.2.0
		Dhaka ACC /Bangladesh	AFTN/AMHS	4Q2018	ICD V.2.0
NEPAL	Kathmandu ACC	Kolkata ACC /India	AFTN		
		Varanasi ACC/India	AFTN		
		Lhasa ACC /China	AFTN		
NEW ZEALAND	Auckland ACC	Brisbane ACC /Australia	AFTN	Implemented	ICD V.1.0
		Nadi ACC /Fiji	AFTN	Implemented	ICD V.1.0
		Oakland ARTCC /USA	AFTN	Implemented	ICD V.2.0
		Papeete ACC /French Polynesia	AFTN	Implemented	ICD V.2.0
			AFTN/AMHS		

State/Administration	Location of AIDC System ATSU1	AIDC System Pair ATSU2 /Correspondent State – Administration	Transmission Means	Target date of Implementation xQyyyy or yyyy	Remarks
1	2	3	4	5	6
PAKISTAN	Karachi ACC	Mumbai ACC /India	AFTN	2018	
		Muscat ACC /Oman	AFTN		
		Tehran ACC /Iran	AFTN		
		Delhi ACC /India	AFTN		
		Ahmadabad ACC /India	AFTN	4Q2018	LOA signed for test trials
		Kabul ACC /Afghanistan	AFTN		
	Lahore ACC	Delhi ACC /India	AFTN		
		Urumqui ACC /China	AFTN/AMHS		
		Tajakistan ACC /Tajakistan	AFTN		
PAPUA NEW GUINEA	Port Moresby	Brisbane ACC/Australia	AFTN/AMHS	4Q2018	
		Ujung Pandang ACC/Indonesia	AFTN		
		Oakland ARTCC	AFTN		Subject to PNG to join CRV
PHILIPPINES	Manila ACC	Hong Kong ACC /Hong Kong, China	AFTN		Coordination for Technical test on the new ATM system – on going
			AFTN/AMHS	1Q2019	
		Singapore ACC /Singapore	AFTN/AMHS	4Q2018	ICD V.3.0 Topsky-HE ATM System
		Taibei ACC/China	AFTN		ATMC-ATMS
			AFTN/AMHS	4Q2018	
		Kota Kinabalu ACC /Malaysia	AFTN/AMHS	4Q2019	Philippines is ready by lQ2019. Target date of implementation depends on the readiness of adjacent ACC's.
		Ho Chi Minh ACC /Viet Nam	AFTN/AMHS	1Q2019	
		Oakland ARTCC /USA	AFTN/AMHS	1Q2019	
		Fukoka ATMC /Japan	AFTN/AMHS	1Q2019	
		Ujung Pandang ACC /Indonesia	AFTN/AMHS	4Q2018	
REPUBLIC OF KOREA	Incheon ACC	Fukoka ATMC /Japan	AFTN	Implemented	ICD V.1.0
		Dalian ACC/China	AFTN	Implemented	ICD V.3.0 (Trial operation)
SINGAPORE	Singapore ACC	Ho Chi Minh ACC /Vietnam	AFTN/AMHS	Implemented	ICD V.1.0
		Manila ACC /Philippines	AFTN/AMHS	4Q2018	ICD V.3.0 Topsky-HE ATM System
		Jakarta ACC /Indonesia	AFTN/AMHS	4Q2019	ICD V.3.0

State/Administration	Location of AIDC System ATSU1	AIDC System Pair ATSU2 /Correspondent State – Administration	Transmission Means	Target date of Implementation xQyyyy or yyyy	Remarks
1	2	3	4	5	6
		Kuala Lumpur ACC /Malaysia	AFTN/AMHS	2Q2018	ICD V.3.0
		Kota Kinabalu ACC /Malaysia	AFTN/AMHS	4Q2020	ICD V.3.0
		Kuching /Malaysia	AFTN/AMHS	4Q2020	ICD V.3.0
SRI LANKA	Colombo ACC	Male ACC /Maldives	AFTN/AMHS	2018	
		Jakarta ACC / Indonesia	AFTN/AMHS	4Q2019	
		Chennai ACC /India	AFTN/AMHS	4Q2018	
THAILAND	Bangkok ACC	Kuala Lumpur ACC /Malaysia	AFTN	3Q2019	ICD V.3.0
		Phnom Penh ACC /Cambodia	AMHS	3Q2019	
		Vientiane ACC /Lao PDR	AFTN/AMHS	3Q2019	
		Yangon ACC /Myanmar	AFTN/AMHS	3Q2019	ICD V.2.0
UNITED STATES	Oakland ARTCC	Anchorage ARTCC /United States	AFTN	Implemented	ICD V 2.0
		Auckland OAC /New Zealand	AFTN	Implemented	ICD V.2.0
		Fukuoka ATMC /Japan	AFTN	Implemented	ICD V.2.0
		Nadi ATMC /Fiji	AFTN	Implemented	ICD V.2.0
		Brisbane ACC /Australia	AFTN	Implemented	ICD V.2.0
		Tahiti ACC /Tahiti	AFTN	Implemented	ICD V 2.0
		Port Moresby/PNG	AFTN		Subject to PNG to join CRV
		Manila /Philippines	AFTN/AMHS	1Q2019	
		Ujung Padang/Indonesia	AFTN/AMHS		Subject to Indonesia to join CRV
	Anchorage ARTCC	Fukuoka ATMC /Japan	AFTN	Implemented	ICD V.2.0
		Oakland ARTCC /United States	AFTN	Implemented	ICD V.2.0
VIET NAM	Ho Chi Minh ACC	Sanya ACC /China	AFTN		
			AFTN/AMHS		
		Phnom Penh ACC /Cambodia	AFTN/AMHS	2016	
		Vientiane ACC /Lao PDR	AFTN/AMHS		
		Singapore ACC /Singapore	AFTN/AMHS	Implemented	ICD V.1.0
		Manila ACC /Philippines	AFTN/AMHS	1Q2019	
		Kuala Lumpur ACC /Malaysia	AFTN		
	Hanoi ACC	Vientiane ACC/Lao PDR	AFTN/AMHS		Test conducted in 2017- on-going

Table CNS II-APAC-2 RADIO NAVIGATION AIDS

EXPLANATION OF THE TABLE

Column

1 Name of the State and city (and aerodrome if different name than the city) or, for en-route aids, the location of the facility.

2 The designator number and runway type:

NINST — Visual flight runway
NPA — Non-precision approach runway
PA1 — Precision approach runway, Category I
PA2 — Precision approach runway, Category II
PA3 — Precision approach runway, Category III

and functions:

T — Terminal
E — En route

Note.— Precision approach category refers to the standard of facility performance to be achieved and maintained in accordance with the relevant Annex 10 specifications and not to the specifications of the ILS equipment itself, which are not necessarily the same.

3 ILS — Instrument landing system

4 L — Locator, either associated with an ILS or for use as an approach aid at an aerodrome.

5 DME — Distance measuring equipment. Aligned with the ILS shown in column 3 when the DME is required to serve as a substitute for a marker beacon. When aligned with VOR in column 6, indicates the DME to be collocated with the VOR.

6 VOR — VHF omnidirectional radio range.

7 Blank

8 Implementation Status for ILS

9 Implementation status for Locator

10 Implementation status for DME

11 Implementation status for VOR

12 Remarks

Note.— Columns 3 to 6 *use the following symbols:*

R – Required

Blank Entry means no requirement.

Note.— Columns 8 to 11 *use the following symbols:*

I — Implemented.

X — Implementation status undetermined. (in red)

N — Not implemented. (in red)

P — Planned (need to fill up Remarks column with planned implementation date in

MM/YY format)

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
AMERICAN SAMOA (United States)											
PAGO PAGO	05 PA1	R	R	R	R		X	X	X	X	
	T			R	R				X	X	
	E			R	R				X	X	
AUSTRALIA											
Adelaide	PA1	R		R	R						
	T			R	R		I		I	I	
	E			R	R				I	I	
Albany	PA1	R		R							NDB
	T			R			I		I		NDB
Albury	NPA			R	R						
	T			R	R				I	I	
	E			R	R				I	I	
Alice Springs	PA1	R		R	R						
	T			R	R		I		I	I	
	E			R	R				I	I	
Amberly	PA1	R					I				DoD
Armidale	NPA			R							NDB
	T			R					I		NDB
	E			R					I		NDB
Avalon	PA1	R		R	R				I		
	T			R	R		I		I	I	
	E			R	R				I	I	
Ayers Rock	NPA			R					I		NDB
	T			R					I		NDB
	E			R					I		NDB
Beermullah	PA1	R					I				DoD
Brisbane	01 PA1	R		R	R		I		I	I	
	19PA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Broken Hill	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Broome	NPA			R					I		NDB
	T			R					I		NDB
	E			R					I		NDB
Cairns	15PA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Canberra	35PA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Carnarvon	NPA			R	R				I	I	
	T			R	R				I	I	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
	E			R	R				I	I	
Christmas Island	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Cocos Island	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Coffs Harbour	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Cooma	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Cunnamulla	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Curtin	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Darwin	29PA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	
East Sale	22PA1	R		R			I		I		DoD
	T	R		R			I		I		DoD
Edinburgh	18PA1	R					I				DoD
Esperance	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Essendon	16PA1	R					I				
	T	R					I				
Geralton	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Gladstone	10PA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Gold Coast	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Gove	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Groote Eylandt	NPA			R					I		NDB
	T			R					I		NDB
	E			R					I		NDB
Hamilton Island	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Hobart	12PA1	R		R	R		I		I	I	
	T			R	R				I	I	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
	E			R	R				I	I	
Kalgoorie	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Karratha	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Kununurra	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Launceston	32PA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Learmonth	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Lord Howe Island	NPA			R					I		NDB
	T			R					I		NDB
	E			R					I		NDB
Mackay	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Managalore	NPA				R					I	
	E				R					I	
Meekatharra	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Melbourne	16PA3	R		R	R		I		I	I	
	27PA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Merimbula	NPA			R					I		NDB
	T			R					I		NDB
	E			R					I		NDB
Mildura	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Moomba	NPA			R					I		NDB
	T			R					I		NDB
	E			R					I		NDB
Mount Gambier	NPA				R					I	
	T				R					I	
	E				R					I	
Mount Isa	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Newman	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Norfolk Island	NPA			R	R				I	I	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
	T			R	R				I	I	
	E			R	R				I	I	
Nowra	21PA1	R		R			I		I		DoD
	T			R					I		DoD
	E			R					I		DoD
Oakey	14PA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Paraburdoo	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Parkes	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Pearce	36PA1	R					I				DoD
	18PA1	R					I				DoD
Perth	03PA1	R		R	R		I		I	I	
	21PA1	R		R	R		I		I	I	
	24PA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Port Headland	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Proserpine	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Richmond	28PA1	R					I				DoD
Rock Hampton	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Sydney	34R PA1	R		R	R		I		I	I	
	34L PA2	R		R	R		I		I	I	
	16R PA2	R		R	R		I		I	I	
	16L PA1	R		R	R		I		I	I	
	25PA1	R		R	R		I		I	I	
	7PA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Tamworth	30R PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Tennant Creek	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Tindal	14PA1	R			R		I			I	DoD
	T				R					I	
	E				R					I	
Townsville	01PA1	R		R	R		I		I	I	
	T			R	R				I	I	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
	E			R	R				I	I	
Wagga Wagga	23PA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Weipa	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
Williamsdale	E				R					I	
Williamstown	12PA1	R					I				DoD
Yarrowee	E				R					I	
BANGLADESH											
CHITTAGONG	NPA		R	R	R			X	X	X	
	T			R	R				X	X	
	E			R	R				X	X	
COMILLA	E				R					X	
DHAKA (Zia intl)	14 PA1	R	R	R	R		X	X	X	X	
	T			R	R				X	X	
	E			R	R				X	X	
RAJSHAHI	E				R					X	
SAIDPUR	E				R					X	
BHUTAN											
PARO	NPA			R	R				I	I	
	T										
	E			R	R				I	I	
BRUNEI DARUSSALAM											
BRUNEI	21 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
CAMBODIA											
PHNOM PENH	23 PA1	R	R	R	R		X	X	I	I	
	T			R	R				X	X	
	E			R	R				X	X	
SIEM REAP (Ankor)	NPA		R	R	R			X	I	I	
	T			R	R				X	X	
	E			R	R				X	X	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
CHINA											
ALTAY	E			R	R				I	I	
ANDONG	E			R	R				I	I	
BAIHESI	E			R	R				I	I	
BOSE	E			R	R				I	I	
BAOTOU	E/T			R	R				I	I	
BEIJING (Capital)	18R PA1	R	R	R			I	I	I		
	36L PA1	R	R				I	I			
	18L PA1	R	R				I	I			
	36R PA2	R	R	R	R		I	I	I	I	
	01 PA2	R	R				I	I	I		
	19 PA1	R	R				I	I	I		
CENCUN	E			R	R				I	I	
CHA'AN	E			R	R				I	I	
CHANGCHUN/Longjia	06 PA1	R	R	R			I	I	I		
	24 PA1	R	R	R			I	I	I		
CHANGHAI	E			R	R				I	I	
CHANGSHA/Huanghua	18 PA1	R	R	R	R		I	I	I	I	
	36PA1	R	R	R			I		I		
CHANGSHENGQIAO	E			R	R				I	I	
CHANGZHOU	E/T			R	R				I	I	
CHANGZHOU/Benniu	11 PA1	R	R	R	R		I	I	I	I	
	29 PA1	R	R				I	I	I		
CHAOSHAN	E			R	R				I	I	
CHAOYANG	E/T			R	R				I	I	
CHENGDU/Shuangliu	20R PA1	R	R	R	R		I	I	I	I	
	02L PA2	R	R				I	I			
	02R PA3	R	R				I	I	I		
	20L PA1	R	R				I	I	I		
CHENGHAI	E			R	R				I	I	
CHONGQING/Jiangbei	02L PA1	R	R	R	R		I	I	I	I	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
	20R PA1	R	R				I	I	I		
	02R PA1	R	R				I	I	I		
	20L PA1	R	R				I	I	I		
CHONGZHOU	E			R	R				I	I	
CONGHUA	E			R	R				I	I	
DAGUSHAN	E										
DAHUSHAN	E			R	R				I	I	
DALI	E/T			R	R				I	I	
DALIAN/Zhoushuizi	28 PA1	R	R	R	R		I	I	I	I	
	10 PA1	R	R				I	I			
	E			R	R				I	I	
DANDONG	E/T			R	R				I	I	
DANGSHAN	E			R	R				I	I	
DAWANGZHUANG	E			R	R				I	I	
DENGKOU	E			R	R				I	I	
DONGLIHU	E			R	R				I	I	
DONGMULANTOU	E			R	R				I	I	
DONGSHAN	E			R	R				I	I	
DONGYING	E/T			R	R				I	I	
DUNHUANG	E/T			R	R				I	I	
EJINAQI	E			R	R				I	I	
ENSHI	E			R	R				I	I	
EREN	E			R	R				I	I	
ERENHOT	E/T			R	R				I	I	
FENGHUO	E			R	R				I	I	
FUJIACHANG	E			R	R				I	I	
FUKANG	E			R	R				I	I	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
FULING	E			R	R				I	I	
FUQING	E			R	R				I	I	
FUYANG	E			R	R				I	I	
FUYU	E			R	R				I	I	
FUZHOU/Changle	03 PA1	R	R	R	R		I	I	I	I	
	21 PA1	R	R				I	I			
	E			R	R				I	I	
GANLANBA	E			R	R				I	I	
GAOYAO	E			R	R				I	I	
GENGMA	E			R	R				I	I	
GUANGZHOU (Baiyun)	02L PA1	R	R	R	R		I	I	I		
	20R PA1	R	R	R			I	I	I		
	01 PA1	R	R	R			I	I	I		
	19 PA1	R	R	R			I	I	I		
	02R PA1	R	R	R			I	I	I		
	20L PA1	R	R	R			I	I	I		
GUILIN/Liangjiang	01 PA1	R	R	R	R		I	I	I	I	
	19 PA1	R	R	R			I	I	I		
GUANLAN	E			R	R				I	I	
GUANZHUANG	E			R	R				I	I	
GUIYANG	E/T			R	R				I	I	
GUIYANG/Longdongbao	01 PA1	R	R	R	R		I	I	I	I	
	19 PA1	R	R	R			I	I	I		
HAIKOU/Meilan	09 PA1	R	R	R	R		I	I	I	I	
	19 PA1	R	R	R			I	I	I		
HAILAR	E			R	R				I	I	
HAMI	E/T			R	R				I	I	
HANGZHOU (Xiaoshan)	07 PA1	R	R	R	R		I	I	I	I	
	25 PA1	R	R				I	I			
	06 PA1	R	R				I	I	I		
	24 PA1	R	R				I	I	I		
HARBIN (Taiping)	23 PA1	R	R	R	R		I	I	I	I	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
	05 PA1	R	R				I	I			
HEFEI (Xinqiao)	15 PA1	R	R	R	R		I	I	I	I	
	33 PA1	R	R				I	I	I		
	E			R	R				I	I	
HEIHE	E/T			R	R				I	I	
HEDONG	E			R	R				I	I	
HENGSHA	E			R	R				I	I	
HEKOU	E			R	R				I	I	
HOHHOT/Baita	08 PA1	R	R	R	R		I	I	I	I	
	26 PA1	R	R				I	I	I		
	E			R	R				I	I	
HOTAN/Hotan	11 PA1	R	R	R	R		I	I	I	I	
	29 PA 1	R	R				I	I	I		
	E			R	R				I	I	
HUAIAN	E/T			R	R				I	I	
HUAIAN/Lianshui	04 PA1	R	R	R	R		I	I	I	I	
	22 PA1	R	R				I	I	I		
	E			R	R				I	I	
HUANGCHENG	E			R	R				I	I	
HUANGHUA	E/T			R	R				I	I	
HUANGPING	E			R	R				I	I	
HUANGSHAN/Tunxi	13 PA1	R	R	R	R		I	I	I	I	
	E			R	R				I	I	
HUAIROU	E			R	R				I	I	
HUAYUAN	E			R	R				I	I	
HULUNBEIER/Hailar	27 PA1	R	R	R	R		I	I	I	I	
	E			R	R				I	I	
JIAYUGUAN	E/T			R	R				I	I	
JIEYANG/Chaoshan	04 PA1	R	R	R	R		I	I	I	I	
	22 PA1	R	R				I	I	I		
	E			R	R				I	I	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
JINAN (Yaoqiang)	01 PA1	R	R	R	R		I	I	I	I	
	19 PA1	R	R				I	I	I		
	E			R	R				I	I	
JINGNING	E			R	R				I	I	
JINGTAI	E			R	R				I	I	
JINNING	E			R	R				I	I	
JINTANG	E			R	R				I	I	
JIUTING	E			R	R				I	I	
JINZHOU	E			R	R				I	I	
KAIYUAN	E			R	R				I	I	
KASHI/Kashi	08 PA1	R	R	R	R		I	I	I	I	
	26 PA1	R	R	R			I	I	I		
	E			R	R				I	I	
KOULING	E			R	R				I	I	
KUNMING (Changshui)	03 PA1	R	R	R	R		I	I	I	I	
	21 PA1	R	R	R			I	I	I		
	04 PA1	R	R	R			I	I	I		
	22 PA1	R	R	R			I	I	I		
	E			R	R				I	I	
KUQA	E/T			R	R				I	I	
LAIBIN	E			R	R				I	I	
LANZHOU (Zhongchuan)	36 PA1	R	R	R	R		I	I	I	I	
	18 PA1	R	R	R							
	E			R	R				I	I	
LAOLIANGCANG	E			R	R				I	I	
LEDU	E			R	R				I	I	
LHASA/Gonggar	09L PA1	R	R	R	R		I	I	I	I	
	27R PA1	R	R	R			I	I	I		
	E			R	R				I	I	
LIANJIANG	E			R	R				I	I	
LIANSHENGWEI	E			R	R				I	I	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
LIBO	E/T			R	R				I	I	
LIJIANG/Sanyi	02 PA1	R	R	R	R		I	I	I	I	
	20 PA1	R	R	R			I	I	I		
	E			R	R				I	I	
LILING	E			R	R				I	I	
LINLI	E			R	R				I	I	
LIUPANSHUI	E/T			R	R				I	I	
LIUZAO	R			R	R				I	I	
LONGKOU	E			R	R				I	I	
LONGMEN	E			R	R				I	I	
LONGZAOCUN	E			R	R				I	I	
LONGZHOU	E			R	R				I	I	
LUANXIAN	E			R	R				I	I	
LUOGANG	E			R	R				I	I	
LUXI	E			R	R				I	I	
MALONG	E			R	R				I	I	
MANZHOULI/Xijiao	12 PA1	R	R	R	R		I	I	I	I	
	30 PA1	R	R	R			I	I	I		
	E			R	R				I	I	
MIZI	E			R	R				I	I	
MOLING	E			R	R				I	I	
MUDANJIANG/Hailang	22 PA1	R	R	R	R		I	I	I	I	
	E			R	R				I	I	
NALATI	E/T			R	R				I	I	
NANCHANG/Changbei	03 PA1	R	R	R	R		I	I	I	I	
	21 PA1	R	R	R			I	I	I		
	E			R	R				I	I	
NANCHONG	E/T			R	R				I	I	
NANJING (Lukou)	06 PA1	R	R	R	R		I	I	I	I	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
	24 PA1	R	R	R			I	I	I		
	07 PA1	R	R	R			I	I	I		
	25 PA1	R	R	R			I	I	I		
	E			R	R				I	I	
NANKANG	E			R	R				I	I	
NANLANG	E			R	R				I	I	
NANNING (Wuxu)	05 PA1	R	R	R	R		I	I	I	I	
	23 PA 1	R	R	R			I	I	I		
	E			R	R				I	I	
NANTONG	E			R	R				I	I	
NANXIONG	E										
NANXUN	E			R	R				I	I	
NANYINGBINDAO	E			R	R				I	I	
NINGBO/Lishe	13 PA1	R	R	R	R		I	I	I	I	
	31 PA1	R	R	R			I	I	I		
	E			R	R				I	I	
NINGSHAN	E			R	R				I	I	
NIULING	E			R	R				I	I	
PANLONG	E			R	R				I	I	
PENGLAI	E			R	R				I	I	
PINGZHOU	E			R	R				I	I	
PIXIAN	E			R	R				I	I	
POTOU	E			R	R				I	I	
QIANXI	E			R	R				I	I	
QIEMO	E			R	R				I	I	
QIJIANG	E			R	R				I	I	
QINGDAO/Liuting	17 PA1	R	R	R	R		I	I	I	I	
	35 PA1	R	R	R			I	I	I		
	E			R	R				I	I	
QINGYANG	E/T			R	R				I	I	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
QIQIHAR/Sanjiazi	17 PA1	R	R	R	R		I	I	I	I	
	E			R	R				I	I	
QITAI	E			R	R				I	I	
QUANZHOU/Jinjiang	03 PA1	R	R	R	R		I	I	I	I	
	21 PA1	R	R	R			I	I	I		
	E			R	R				I	I	
RIKAZE	E/T			R	R				I	I	
SANJIANG	E			R	R				I	I	
SANXIA	E/T			R	R				I	I	
SANYA/Phoenix	08 PA1	R	R	R	R		I	I	I	I	
	26 PA1	R	R	R			I	I	I		
	E			R	R				I	I	
SHACHE	E			R	R				I	I	
SHANGHAI (Hongqiao)	18L PA1	R	R	R	R		I	I	I	I	
	36R PA1	R	R	R			I	I	I		
	18R PA1	R	R	R			I	I	I		
	36L PA1	R	R	R			I	I	I		
	E			R	R				I	I	
SHANGHAI (Pudong)	17L PA3	R	R	R	R		I	I	I	I	
	35R PA2	R	R	R			I	I	I		
	16R PA1	R	R	R			I	I	I		
	34L PA1	R	R	R			I	I	I		
	17R PA1	R	R	R			I	I	I		
	35L PA1	R	R	R			I	I	I		
	16L PA1	R	R	R			I	I	I		
	34R PA1	R	R	R			I	I	I		
	E			R	R				I	I	
SHANGRAO	E			R	R				I	I	
SHANTOU	E			R	R				I	I	
SHAZIYING	E			R	R				I	I	
SHEKOU	E			R	R				I	I	
SHENGZHOU	E			R	R				I	I	
SHENYANG (Taoxian)	06 PA1	R	R	R	R		I	I	I	I	
	24 PA1	R	R	R			I	I	I		

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
	E								I	I	
SHENZHEN/Baoan	33 PA1	R	R	R	R		I	I	I	I	
	15 PA1	R	R	R			I	I	I		
	16 PA1	R	R	R			I	I	I		
	34 PA1	R	R	R			I	I	I		
SHILONG	E			R	R				I	I	
SHIQIU	E			R	R				I	I	
SHUYUAN	E			R	R				I	I	
SHUOFANG	E/T			R	R				I	I	
TACHENG	E			R	R				I	I	
TAIYUAN/Wusu	31 PA1	R	R		R		I	I		I	
	13 PA1	R	R				I	I			
	E			R	R				I	I	
TAOHUA	E			R	R				I	I	
TIANJIN (Binhai)	34l PA1	R	R	R	R		I	I	I	I	
	16R PA1	R	R	R			I	I	I		
	34R PA2	R	R	R			I	I	I		
	16L PA2	R	R	R			I	I	I		
	E			R	R				I	I	
TIANMEN	E			R	R				I	I	
TIANZHEN	E			R	R				I	I	
TONGLIAO	E/T			R	R				I	I	
TONGLU	E			R	R				I	I	
TUMURTAI	E			R	R				I	I	
URUMQI (Diwopu)	25 PA1	R	R	R	R		I	I	I	I	
	07 PA1	R	R				I	I			
	E			R	R				I	I	
WANCHANG	E			R	R				I	I	
WANGQING	E			R	R				I	I	
WEIHAI/Dashuipo	02 PA1	R	R	R	R		I	I	I	I	
	20 PA1	R	R				I	I			
	E			R	R				I	I	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
WEIXIAN	E			R	R				I	I	
WENZHOU/Longwan	03 PA1	R	R	R	R		I	I	I	I	
	21 PA1	R	R				I	I			
	E			R	R				I	I	
WONGYUAN	E			R	R				I	I	
WUFENGXI	E			R	R				I	I	
WUHAN/Tianhe	04 PA1	R	R	R	R		I	I	I	I	
	22 PA1	R	R	R			I	I	I		
	E			R	R				I	I	
WUXI	E			R	R				I	I	
WUXI/Shoufang	03 PA1	R	R	R	R		I	I	I	I	
	21 PA1	R	R	R			I	I	I		
	E			R	R				I	I	
WUZHONG	E			R	R				I	I	
XIAMEN (Gaoqi)	05 PA1	R	R	R	R		I	I	I	I	
	23 PA1	R	R	R			I	I	I		
	E			R	R				I	I	
XI'AN (Xianyang)	05L PA1	R	R	R	R		I	I	I	I	
	23R PA1	R	R	R			I	I	I		
	05R PA2	R	R	R			I	I	I		
	23L PA1	R	R	R			I	I	I		
	E			R	R				I	I	
XIANGTANG	E			R	R				I	I	
XICHANG (Qingshan)	36 PA1	R	R	R	R		I	I	I	I	
	E			R	R				I	I	
XINGLIN	E										
XINGTANG	E										
XILINHOT	E			R	R				I	I	
XINGLIN	E			R	R				I	I	
XINING/Caojiapu	11 PA1	R	R	R	R		I	I	I	I	
	29 PA1	R	R	R			I	I	I		
	E			R	R				I	I	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
XINQIAO	E			R	R				I	I	
XINZHENG	E/T			R	R				I	I	
XISHAN	E			R	R				I	I	
XISHUANGBANNA/Gasa	16 PA1	R	R	R	R		I	I	I	I	
	34 PA1	R	R	R			I	I	I		
	E			R	R				I	I	
XISHUI	E			R	R				I	I	
XUEJIADAO	E			R	R				I	I	
XUYONG	E			R	R				I	I	
XUZHOU/Guanyin	09 PA1	R	R	R	R		I	I	I	I	
	27 PA1	R	R				I	I			
	E			R	R				I	I	
YABRAI	E			R	R				I	I	
YAN'AN	E/T			R	R				I	I	
YANCHENG/Nanyang	04 PA1	R	R	R			I	I	I	I	
	22 PA1	R	R				I	I			
	E			R	R				I	I	
YANJI/Chaoyangchuan	09 PA1	R	R	R	R		I	I	I	I	
	23 PA1	R	R				II	I			
	E			R	R				I	I	
YANTAI/Penglai	05 PA1	R	R	R	R		I	I	I	I	
	23 PA1	R	R				I	I			
	E			R	R				I	I	
YIBIN	E			R	R				I	I	
YINCHUAN	E/T			R	R				I	I	
YINCHUAN/Hedung	03 PA1	R	R	R	R		I	I	I	I	
	21 PA1	R	R				I	I			
	E			R	R					I I	
YIWU	02 PA1	R	R				I	I			
	E			R	R				I	I	
YINGDE	E			R	R				I	I	
YUANTAN	E			R	R				I	I	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
YUNCHENG	E/T			R	R				I	I	
ZHANGJIAJIE/Hehua	08 PA1	R	R	R	R		I	I	I	I	
	26 PA1	R	R				I	I			
	E			R	R				I	I	
ZHAOTONG	E/T			R	R				I	I	
ZHENGZHOU/Xinzheng	02 PA1	R	R	R	R		I	I	I	I	
	30 PA1	R	R	R			I	I	I		
	E			R	R				I	I	
ZHOUKOU	E			R	R				I	I	
ZHOUSHAN	E/T			R	R				I	I	
ZIYANG	E			R	R				I	I	
ZU'AN	E			R	R				I	I	
COOK IS.											
RAROTONGA	NPA		R	R	R			X	X	X	
	T			R	R				X	X	
	E			R	R				X	X	
DEMOCRATIC PEOPLE'S REP. OF KOREA											
PYONGYANG	17PA1	R	R	R	R		I	I	I	I	
	35 PA1	R	R				I	I			
	T			R	R				I	I	
	E			R	R				I	I	
FIJI											
NADI	02 PA1	R	R				I	I			
	T			R	R				I	I	
	E			R	R				I	I	
SUVA (Nausori)	NPA		R	R	R			I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
FRENCH POLYNESIA (France)											
RANGIROA	NPA		R	R	R			I	I	I	
	T			R	R				I	I	
	E				R					I	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
TAHITI (Faaa)	04 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
GUAM (United States)											
GUAM I.	06L PA1	R	R	R	R		X	X	X	X	
	T			R	R				X	X	
	E			R	R				X	X	
GUAM I. (Anderson AFB)	06R PA1	R		R	R		X		X	X	
	T			R	R				X	X	
	E			R	R				X	X	
HONG KONG, China											
HONG KONG	07R PA2	R		R	R		I		I	I	
	25L PA2	R		R	R		I		I	I	
	T			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
	E			R	R				I	I	
	07L PA2	R		R	R		I		I	I	
	25R PA3	R		R	R		I		I	I	
INDIA											
AHMEDABAD	23 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
AMRITSAR	34 PA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	
BAGDOGRA	E			R	R				X	X	
BELGAUM	E			R	R				I	I	
BHUBANESHWAR	E			R	R				I	I	
CALICUT	NPA		R	R	R			X	I	I	
CHENNAI	07 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
COIMBATORE	E			R	R				I	I	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
DELHI (Indira Ghandi)	28 PA2	R	R	R	R		I	I	I	I	
	27 PA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	
GUWAHATI	E			R	R				X	X	
IMPHAL	E			R	R				X	X	
KOLKATA	19L PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
LUCKNOW	27 PA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	
MADURAI	E				R					I	
MUMBAI (Chhatrapati Shiviji Intl)	27 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
NAGPUR	32 PA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	
PATNA	25 PA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	
PORT BLAIR	E			R	R				I	I	
PRATAPGARH	E			R	R				I	I	
SILCHAR	E			R	R				X	X	
TIRUCHCHIRAPPALLI	27 PA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	
TRIVANDRUM	32 PA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	
VARANASI	27 PA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	
VISHAKHAPATNAM	E			R	R				I	I	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
INDONESIA											
AMBON (Patimura)	22 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
BALI (Ngurah Rai)	27 PA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	
BALIKPAPAN (Sepinggan)	25 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
BANJARMASIN (Syamsudin Noor)	10 PA1	R	R	R	R		I	I	I	I	
	E			R	R				I	I	
	T			R	R				I	I	
BATAM (Hang Nadmn)	04 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
BIAK (Frans Kaisiepo)	11 PA1	R	R	R	R		X	X	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
JAKARTA (Halim Perdanakusuma)	24 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
JAKARTA (Soekarno Hattal)	07R PA1	R	R	R	R		I	I	I	I	
	07L PA1	R	R	R	R		N	I	I	I	
	T		R	R	R			I	I	I	
	E		R	R	R			I	I	I	
JAYAPURA (Sentani)	30 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
KETAPANG	34 PA1	R		R	R		N		N	N	
	T			R	R				N	N	
	E			R	R				N	N	
KUPANG (El Tari)	25 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
MANADO (Sam Ratulangi)	18 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
MEDAN (Polonia)	05 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
MERAUKE (Mopah)	NPA		R	R	R			I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
PADANG (Tabing)	NPA		R	R	R			I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
PALEMBANG (Sultan Mahmud Badaruddin II)	27 NPA	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
PANGKALPINANG	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
PEKANBARU	36 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
PONTIANAK (Supadio)	15 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
SURABAYA (Juanda)	10 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
TANJUNG PINANG (Kijang)	NPA		R	R	R			I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
TARAKAN	NPA		R	R	R			I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
TIMIKA(Tembagapura)	NPA		R	R	R			X	X	X	
	T			R	R				X	X	
	E			R	R				X	X	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
UJUNG PANDANG (Hasanuddin)	13 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
JAPAN											
ASAHIKAWA	E			R	R				I	I	
DAIGO	E			R					I		
ERABU	E			R	R				I	I	
FUKUE	E			R	R				I	I	
FUKUOKA	16 PA1	R	R	R	R		I	I	I	I	
	34 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
GOBOH	E			R					I		
HAKODATE	12 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
HIROSHIMA	10 PA3	R	R	R	R		I	I	I	I	
	NPA		R	R	R			I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
IKI	E			R	R				I	I	
IWAKI	E			R	R				I	I	
KAGOSHIMA	34 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
KANSAI	06L PA2	R	R	R	R		I	I	I	I	
	06R PA2	R	R	R	R		I	I	I	I	
	24L PA2	R	R	R	R		I	I	I	I	
	24R PA2	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
KOMATSU	E			R	R				I	I	
KOWA	E			R					I		
KUGA	E			R	R				I	I	
KUMAMOTO	07 PA3	R	R	R	R		I	I	I	I	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
	07 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
KUSHIMOTO	E			R	R				I	I	
MIHO	E			R	R				I	I	
MINAMI DAITO	E			R	R				I	I	
MIYAKE JIMA	E			R	R				I	I	
MIYAZU	E			R	R				I	I	
NAGASAKI	32 PA2	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
NAGOYA	18 PA2	R	R	R	R		I	I	I	I	
	36 PA3	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
NAHA	36 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
NARITA	34L PA1	R	R	R	R		I	I	I	I	
	34R PA1	R	R	R	R		I	I	I	I	
	16L PA1	R	R	R	R		I	I	I	I	
	16R PA3	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
NIIGATA	28 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
OITA	01 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
OKAYAMA	07 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
ONJUKU	E			R					I		
OSAKA	32L PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
	E			R	R				I	I	
OSHIMA	E			R	R				I	I	
OTSU	E			R	R				I	I	
SAPPORO (New Chitose)	01L PA1	R	R	R	R		I	I	I	I	
	01R PA1	R	R	R	R		I	I	I	I	
	19R PA3	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
SENDAI	27 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
SHIMIZU	E			R	R				I	I	
SHINODA	E			R	R				I	I	
TAKAMATSU	26 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
TATEYAMA	E			R					I		
TOKYO (Haneda)	22 PA1	R	R	R	R		I	I	I	I	
	23 PA1	R	R	R	R		I	I	I	I	
	34L PA1	R	R	R	R		I	I	I	I	
	34R PA3	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
JOHNSTON I (United States)											
JOHNSTON ATOLL (Johnston I.)	NPA										
	T										
	E										
KIRIBATI											
KIRITIMATI I.	NPA			R	R				X	X	
	T			R	R				X	X	
	E			R	R				X	X	
TARAWA (Bonriki Intl)	NPA		R	R	R			X	X	X	
	T			R	R				X	X	
	E			R	R				X	X	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
LAO PEOPLE'S DEMOCRATIC REPUBLIC											
PAKSE	E				R					X	
VIENTIANE (Wattay)	14 PA1	R	R	R	R		X	X	X	X	
	T			R	R				X	X	
	E			R	R				X	X	
MACAO, China											
MACAO	34 PA2	R		R	R		I		I	I	
	16 IGS										
	T			R	R				I	I	
	E			R	R				I	I	
MALAYSIA											
ALOR SETAR (Sultan Abdul Halim)											
	NPA		R	R	R			I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
IPOH (Sultan Azian Shah)											
	PA-I 04	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
JOHOR BAHRU	16 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
KERTEH	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
KOTA BHARU (Sultan Ismail Petra)	NPA		R	R	R			I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
KOTA KINABALU	02 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
KUALA TERENGGANU (Sultan Mahmud)	NPA		R	R	R			I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
KUANTAN	18 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
KUCHING	25 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
LABUAN	NPA	R	R	R	R		X	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
MALACCA	NPA		R	R	R			I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
MERSING	E			R	R				I	I	
MIRI	02 PA1 02	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
PENANG	04 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
PULAU LANGKAWI	03 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
PULAU TIOMAN	NPA			R	R				X	X	
	T			R	R				X	X	
	E			R	R				X	X	
SANDAKAN	08 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
SIBU	13 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
SEPANG (KL Intl)	32R PA1	R		R	R		I		I	I	
	14L PA1	R		R	R		I		I	I	
	32L PA1	R		R	R		I		I	I	
	14R PA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
SUBANG (Sultan Abdul Aziz Shah)	33 PA1	R	R	R	R		I	I	I	I	
	15 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
TAWAU	NPA	R	R	R	R		X	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
MALDIVES											
DHARAVANDHOO	NPA						X	X	X	X	
FUVAHMULAH	NPA						X	X	X	X	
GAN	NPA			R	R		X	X	I	I	
HANIMADHOO	NPA						X	X	X	X	
KAADEDHOO	NPA						X	X	X	X	
KADHDHOO	NPA						X	X	X	X	
KOODDOO	NPA						X	X	X	X	
MAAMIGILI	NPA						X	X	X	X	
MALE	36 PA1	R		R	R		I	X	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
THIMARAFUSHI	NINST						X	X	X	X	
MARSHALL IS.											
MAJURO ATOLL (Marshall Is. Intl)	NPA			R	R				X	X	
	T			R	R				X	X	
	E			R	R				X	X	
MICRONESIA (FEDERATED STATES OF)											
KOSRAE	NPA		R	R				X	X		
	T			R	R				X	X	
	E			R	R				X	X	
POHNAPEI	NPA			R	R				X	X	
	T			R	R				X	X	
	E			R	R				X	X	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
WENO I. (FM Chuuk Intl)	NPA		R	R				X	X		
	T			R	R				X	X	
	E			R	R				X	X	
YAP	NPA		R		R			X		X	
	T			R	R				X	X	
	E			R	R				X	X	
MONGOLIA											
ULAANBAATAR	14 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
MYANMAR											
BAGO	E			R	R				I	I	
CHANMYATHAZI	E				R				I	I	
	T				R				I	I	
DAWEI	E			R	R				I	I	
	T			R	R				I	I	
HEHO	T			R	R				I	I	
HLEGU	T			R	R				I	I	
LASHIO	E			R	R				I	I	
MANDALAY	17PA1	R		R	R		I		I	I	
	T										
MYEIK	18PA1	R					I				
MYITKYINA	T			R	R				I	I	
NAYPYITAW	16PA1	R		R	R		I		I	I	
	T										
NYAUNG U	T			R	R				I	I	
PATHEIN	E			R	R				I	I	
	T			R	R				I	I	
SITTWE	T			R	R				I	I	
TACHILEIK	T			R	R				I	I	
THANDWE	T			R	R				I	I	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
YANGON	21PA1	R					I				Use of Hlegu VOR/DME
	T			R	R				I	I	
NAURU											
NAURU I.	NPA		R	R	R			X	X	X	
	T			R	R				X	X	
	E			R	R				X	X	
NEPAL											
BHAIRAHAWA	E			R	R				X	X	
BIRATNAGAR	E			R	R				X	X	
JANAKPUR	E				R					X	
KATHMANDU	NPA		R	R	R			X	X	X	
	T			R	R				X	X	
	E			R	R				X	X	
NEPALGUNJ	E			R	R				X	X	
SIMARA	E			R	R				X	X	
NEW CALEDONIA (France)											
NOUMEA (La Tontouta)	11 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
NEW ZEALAND											
AUCKLAND	05 PA1	R	R	R	R		I	I	I	I	
	23 PA1	R	R				I	I			
	T			R	R				I	I	
	E			R	R				I	I	
CHRISTCHURCH	02 PA1	R	R	R	R		I	I	I	I	
	20 PA1	R	R				I	I			
	T			R	R				I	I	
	E			R	R				I	I	
HOKITIKA	E			R					I		
WELLINGTON	NPA		R	R	R			I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
NORTHERN MARIANA IS. (United States)											
OBYAN (Saipan Intl)	07 PA1	R			R		X			X	
	T				R					X	
	E				R					X	
NIUE (New Zealand)											
NIUE	NPA		R					X			
	T			R					X		
	E			R					X		
PAKISTAN											
GWADAR Int'l	NPA										
	T			R	R				X	X	
	E			R	R				X	X	
ISLAMABAD (Chaklala)	30 PA1	R		R	R		I	X	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
KARACHI (Jinnah)	25R PA1	R	R	R	R		I	I		I	MARKERS/ILS
	25L PA1	R		R	R		I		I	I	TDME/ILS
	T			R	R				I	I	
	E			R	R				I	I	DME/VOR
LAHORE	36R PA3	R	R	R	R		I	I	I	I	TDME/ILS CAT-IIIB
	36L PA1	R					I				TDME/ILS CAT-I
	T			R	R				I	I	
	E			R	R				I	I	
MULTAN	36 PA	R					I				TDME/VOR
	T				R					I	
	E			R	R				I	I	
NAWABSHAH	NPA			R	R				I	I	DVOR/DME
	T			R	R				I	I	
	E			R	R				I	I	
PANJGUR	E			R	R				I	I	
PESHAWAR (BACHA KHAN Int'l)	35 PA	R		R	R		I		I	I	TDME/ILS
	T			R	R				I	I	
	E			R	R				I	I	
RAHIM YAR KHAN	E			R	R				I	I	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
SUKKUR	E										NDB
ZHOB	E			R	R				I	I	
PALAU											
KOROR	NPA		R	R	R			X	X	X	
	T			R					X		
PAPUA NEW GUINEA											
KIETA				R	R				X	X	
MADANG	E			R	R				X	X	
MOUNT HAGEN	NINST			R					X		
NADZAB				R	R				X	X	
PORT MORESBY	14L PA1	R	R	R	R		X	X	X	X	
	32R PA1	R		R	R		X		X	X	
	T			R	R				X	X	
	E			R	R				X	X	
VANIMO	NINST			R					X		
WEWAK	E			R	R				X	X	
PHILIPPINES											
BACOLOD-SILAY	03PA1	R		R	R		I		I	I	
	T										
	E										
BASCO	T			R					I		
BUTUAN	T			R	R				I	I	
	E										
CABANATUAN	E			R	R				I	I	
CATICLAN	T			R					I		
CAUAYAN	NPA			R	R				I	I	
	T										
	E										
CLARK	02PA1	R		R	R		I		I	I	
	20PA1										
	T										

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
	E										
COTABATO	NPA			R	R				I	I	
	T										
	E										
DAVAO	05 PA1	R		R	R		I		I	I	
	23 PA1										
	T										
	E										
DUMAGUETE	NPA				R					I	
	T										
ILOILO	02NPA	R		R	R		I		I	I	
	20PA1										
JOMALIG	E			R	R				I	I	
KALIBO	NPA			R	R				I	I	
	T										
	E										
LAGUINDINGAN	T			R	R				I	I	
	E										
LAOAG	NPA			R	R				I	I	
	T										
	E										
LEGASPI	NPA			R	R				I	I	
	T										
	E										
LIPA	E				R					I	
LUBANG	E			R	R				I	I	
MACTAN	04 PA1	R		R	R		I		I	I	
	22 PA1	R		R	R		I		I	I	
MANILA	06 PA1	R		R	R		I		I	I	
	24 PA1	R		R	R		I		I	I	
	13NPA			R	R				I	I	
	E										
NAGA	NPA			R	R				I	I	
	T										
	E										

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
PUERTA PRINCESA	27NPA			R	R				I	I	
	09NINST										
ROXAS	NPA			R	R				I	I	
	T										
	E										
SAN FERNANDO	E				R					I	
SAN JOSE	NPA			R	R				I	I	
SUBIC	T			R	R				I	I	
TACLOBAN	NPA			R	R				I	I	
	T										
	E										
TAMBLER	17PA1	R		R	R		I		I	I	
	T										
	35NPA			R	R				I	I	
TUGUEGARAO	NPA			R					I	I	
	T										
ZAMBOANGA	09PA1	R		R	R		I		I	I	
	27NPA			R	R				I	I	
REPUBLIC OF KOREA											
ANGYANG	E			R	R				I	I	TACAN
BUSAN	36R PA1	R		R	R		I		I	I	
(GIMHAE)	36L PA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	TACAN
CHEONGJU	24R PA1	R		R	R		I		I	I	
	06L PA1	R		R	R		I		I	I	
	T			R	R				I	I	
DAEGU	31L PA1	R		R	R		I		I	I	
	13R PA1	R		R	R		I		I	I	
	31R NPA	R		R	R		I		I	I	
	T			R	R				I	I	
(DALSUNG)	E			R	R				I	I	TACAN
INCHEON	15L PA3	R		R	R		I		I	I	
	15R PA3	R		R	R		I		I	I	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
	16 PA3	R		R	R		I		I	I	
	33L PA3	R		R	R		I		I	I	
	33R PA3	R		R	R		I		I	I	
	34 PA3	R		R			I		I		
	T	R		R	R				I	I	
JEJU	07 PA2	R		R	R		I		I	I	
	25 PA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	TACAN
PYUNGCHANG (GANGWON)	E			R	R				I	I	TACAN
MUAN	01 PA1	R		R	R		I		I	I	
	19 PA1	R		R	R		I		I	I	
	T			R	R				I	I	
POHANG	E			R	R				I	I	TACAN
SEOUL	14R PA2	R		R	R		I		I	I	
(GIMPO)	14L PA1	R		R	R		I		I	I	
	32R PA1	R		R	R		I		I	I	
	32L PA1	R		R	R		I		I	I	
	T			R	R				I	I	
SONGTAN	E			R	R				I	I	TACAN
YANGYANG	33 PA1	R		R	R		I		I	I	
	33 NPA			R	R				I	I	
	T			R	R				I	I	
YANGJU	E			R	R				I	I	
YECHEON	E			R	R				I	I	
SAMOA											
FALEOLO (Faleolo Intl)	NPA		R	R	R			X	X	X	
	T			R	R				X	X	
	E			R	R				X	X	
SINGAPORE											
PAYA LEBAR	NPA				R					I	
	T				R					I	
SELETAR	NINST										
SINGAPORE (Changi)	02L PA2	R		R			I		I		
	20R PA1	R		R			I		I		
	02C PA1	R		R	R		I		I	I	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
	20C PA2	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	
SOLOMON IS.											
HONIARA (Henderson)	NPA		R	R	R			X	X	X	
	T			R	R				X	X	
	E			R	R				X	X	
SRI LANKA											
COLOMBO (Bandaranaike)	04 PA1	R	R	R	R		N	I	I	I	
	22 PA1	R	R	R	R		I	I	I	I	
	T			R	R				I	I	
	E			R	R				I	I	
HIGURAKGODA (Mineriya)	25 PA1	R		R	R		N		N	N	
	T			R	R				N	N	
	E			R	R				N	N	
THAILAND											
BANGKOK / Don Mueang INTL	21LPA1	R		R	R		I		I	I	
	21RPA2	R		R	R		I		I	I	
	03LPA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	
BANGKOK / Suvarnabhumi INTL	19LPA2	R		R	R		I		I	I	
	19RPA2	R		R	R		I		I	I	
	01LPA2	R		R	R		I		I	I	
	01RPA2	R		R	R		I		I	I	
	T			R	R				I	I	
	E										
BURIRAM	04PA1	R		R	R		I		I	I	NDB
	T			R	R				I	I	
	E			R	R				I	I	
CHIANG MAI / INTL	36PA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	
CHIANG RAI / Mae Fah Luang -Chiang Rai INTL	03PA1	R		R	R		I		I	I	NDB
	T			R	R				I	I	
	E			R	R				I	I	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
CHUMPHON	24PA1	R		R	R		I		I	I	NDB
	T			R	R				I	I	
	E			R	R				I	I	
CHUM PHAE	E			R	R				I	I	
KHON KAEN	NPA			R	R				I	I	NDB
	T			R	R				I	I	
	E			R	R				I	I	
KRABI	32PA1	R		R	R		I		I	I	NDB
	T			R	R				I	I	
	E			R	R				I	I	
LAMPANG	NPA			R	R		I		I	I	GP: Not Installed
	T			R	R				I	I	
	E			R	R				I	I	
LOEI	NPA			R	R				I	I	
	T			R	R				I	I	
	E			R	R				I	I	
MAE HONG SON	NPA			R	R				I	I	NDB
	T			R	R				I	I	
	E			R	R				I	I	
NAKHON PHANOM	15PA1	R		R	R		I		I	I	NDB
	T			R	R				I	I	
	E			R	R				I	I	
NAKHON RATCHASIMA / Khorat	06PA1	R		R	R		I		I	I	NDB
	T			R	R				I	I	
	E			R	R				I	I	
NAKHON RATCHASIMA	E			R	R				I	I	
NAKHON SI THAMMARAT	19PA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	
NAN	02PA1	R		R	R		I		I	I	NDB
	T			R	R				I	I	
	E			R	R				I	I	
NARATHIWAT	02PA1	R		R	R		I		I	I	NDB
	T			R	R				I	I	
	E			R	R				I	I	

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
PATTANI											NDB
PHETCHABUN	36PA1	R		R	R		I		I	I	NDB
	T			R	R				I	I	
	E			R	R				I	I	
PHITSANULOK	32PA1	R		R	R		I		I	I	NDB
	T			R	R				I	I	
	E			R	R				I	I	
PHARE	NPA			R	R				I	I	NDB
	T			R	R				I	I	
	E			R	R						
PHUKET / INTL	27PA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	
PRACHINBURI	E										NDB
PRACHUAP KHIRI KHAN / Hua Hin	NPA			R	R				I	I	NDB
	T			R	R				I	I	
	E			R	R				I	I	
RANONG	02PA1	R		R	R		I		I	I	NDB
	T			R	R				I	I	
	E			R	R				I	I	
RAYONG / U-Tapao Pattaya INTL	18PA1	R	R	R	R		I	I	I	I	NDB
	T			R	R				I	I	
	E			R	R				I	I	
RAYONG	E			R	R				I	I	
ROI ET	36PA1	R		R	R		I		I	I	NDB
	T			R	R				I	I	
	E			R	R				I	I	
SAKHON NAKHON	23PA1	R		R	R				I	I	NDB
	T			R	R				I	I	
	E			R	R				I	I	
SONGKHLA / Hat Yai INTL	26PA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	
SUKHOTHAI	36PA1	R		R			I		I		

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
	T			R					I		DME collocated with NDB
	E			R					I		
SURAT THANI	22PA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	
SURAT THANI / Samui	NPA			R	R				I	I	NDB
	T			R	R				I	I	
	E			R	R				I	I	
TAK	T										NDB
	E										
TAK / Mae Sot	NPA			R	R				I	I	NDB
	T			R	R				I	I	
	E			R	R				I	I	
TRANG	08PA1	R		R	R		I		I	I	
	T			R	R				I	I	
	E			R	R				I	I	
TRAT	NPA			R					I		NDB
	T			R					I		
	E			R					I		
UBON RATCHATHANI	23PA1	R		R	R		I		I	I	NDB
	T			R	R				I	I	
	E			R	R				I	I	
UDON THANI	30PA1	R		R	R		I		I	I	NDB
	T			R	R				I	I	
	E			R	R				I	I	
TONGA											
FUA'AMOTU	NPA		R	R	R			x	X	X	
	T			R	R				X	X	
	E			R	R				X	X	
VAVA'U	NPA										
	T										
	E										
TUVALU											
FUNAFUTI	NPA										
	T										
	E										

Requirements							Implementation Status (Nov. 15)				
State City/location (aerodrome)	Runway Function	ILS	L	DME	VOR		ILS	L	DME	VOR	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
UNITED STATES											
HONOLULU	08L PA1	R	R	R	R		X	X	X	X	
	04R PA1	R	R	R	R		X	X	X	X	
	T			R	R				X	X	
	E			R	R				X	X	
KAHULUI	02 PA1	R		R	R		X		X	X	
	T			R	R				X	X	
	E			R	R				X	X	
VANUATU											
PORT VILA (Bauerfield)	NPA			R	R				X	X	
	T			R	R				X	X	
	E			R	R				X	X	
SANTO (Pekoa)	NPA										
	T										
	E										
VIET NAM											
DA NANG	35R PA1	R	R	R	R		X	X	X	X	
	T			R	R				X	X	
	E			R	R				X	X	
HA NOI (Noi Bai)	11 PA1	R	R	R	R		X	X	X	X	
	T			R	R				X	X	
	E			R	R				X	X	
HO CHI MINH (Tan Son Nhut)	25R PA1	R	R	R	R		X	X	X	X	
	T			R	R				X	X	
	E			R	R				X	X	
WALLIS AND FUTUNA IS. (France)											
WALLIS (Hihifo)	NPA		R	R	R			I	I	I	02/15
	T			R	R				I	I	02/15
	E			R	R				I	I	02/15

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	
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)		

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
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		
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							

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
Taiyuan TWR					PSR + SSRmAC		
Hohhot ACC					SSRmAC		
Hohhot APP							
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		

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 ACC					PSR + SSRmAC		
Guilin APP							
Guilin TWR					PSR + SSRmAC		
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							

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					SSRmAC		
Qingdao ACC					SSRmAC		
Qingdao APP							
Qingdao TWR					SSRmAC		
Hefei ACC					PSR + SSRmAC		
Hefei APP							
Hefei TWR					PSR + SSRmAC		
Nanjing ACC					PSR + SSRmAC		
Nanjing APP							
Nanjing TWR					PSR + SSRmAC		
Lianyungang ACC					SSRmAC		
Lianyungang APP							
Lianyungang TWR					SSRmAC		
Xuzhou TWR					SSRmAC		
Hangzhou ACC					PSR + SSRmAC		
Hangzhou APP							
Hangzhou TWR					PSR + SSRmAC		
Nanchang ACC					PSR + SSRmAC		
Nanchang APP							
Nanchang TWR					PSR + SSRmAC		
Fuzhou ACC					PSR + SSRmAC		
Fuzhou APP							
Fuzhou TWR					PSR + SSRmAC		
Wenzou TWR					SSRmAC		
Xiamen ACC					PSR + SSRmAC		
Xiamen APP							
Xiamen 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
Shenyang ACC Shenyang APP Shenyang TWR					PSR + SSRmAC PSR + SSRmAC		
Dalian ACC Dalian APP Dalian TWR 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 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 PSR + SSRmAC + 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

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
FIJI							
Naid ACC					ADS-B + ADS-C		
Nadi APP					ADS-B		
FRENCH POLYNESIA							
Tahiti ACC					SSRmAC + ADS-B + ADS-C		
Tahiti APP					SSRmAC		
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					PSR + SSRmAC + ADS-B		ADS-B Trial
Jakarta APP					PSR + SSRmAC + ADS-B		ADS-C Trial, A-SMGCS
Medan ACC					PSR + 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
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		
Tarakan ACC					PSR + ADS-B		
Batam ACC					SSRmS		
Batam APP					SSRmS + ADS-B		
Sorong ACC					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					ADS-C		
Narita APP					PSR + SSRmAC + SSRmS		
Narita TWR					MLAT, PSRMLAT		SMR
Haneda TWR					MLAT		SMR
Chubu APP					PSR + SSRmAC + SSRmS		
Chubu TWR					MLAT		SMR
Osaka APP					PSR + SSRmAC + SSRmS		
Osaka TWR					MLAT		SMR
Kansai APP					PSR + SSRmAC + SSRmS		
Kansai TWR					MLAT		SMR
Fukuoka ACC					PSR + SSRmAC + SSRmS		
Fukuoka APP					PSR + SSRmAC + SSRmS		
Fukuoka TWR					MLAT		SMR
Naha ACC					PSR + SSRmAC + SSRmS		
Naha APP					PSR + SSRmAC + SSRmS		
Naha TWR					MLAT		SMR
Hakodate APP					PSR + SSRmAC		
Sendai APP					PSR + SSRmAC		
Tokyo ACC					PSR + SSRmAC + SSRmS		
Tokyo APP					PSR + SSRmAC + SSRmS		
Niigata APP					PSR + SSRmAC		
Chubu APP					PSR + SSRmAC + SSRmS		
Hiroshima 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
Takamatsu APP					PSR + SSRmAC		
Kochi APP					PSR + SSRmAC		
Matsuyama TWR					SSRmAC		
Kitakyusyu TWR					SSRmAC		
Nagasaki APP					PSR + SSRmAC		
Oita APP					PSR + SSRmAC		
Kumamoto APP					PSR + SSRmAC		
Miyazaki APP					PSR + SSRmAC		
Kagoshima APP					PSR + SSRmAC		
Shimojishima APP					PSR + SSRmAC		
Ishigaki APP					PSR + SSRmAC		
Sapporo ACC					PSR + SSRmAC + SSRmS		
LAO PDR Vientiane ACC Vientiane APP					 SSRmAC + SSRmS PSR		
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		

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
K. Kinabalu ACC K. Kinabalu APP Kuching ACC Kuching APP Kuching TWR Miri APP					PSR + SSRmAC PSR + SSRmAC PSR + SSRmAC PSR + SSRmAC PSR + SSRmAC		
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 Chrischurch ACC Christchurch TWR					PSR + SSRmAC + SSRmS		
Auckland ACC Auckland TWR Wellington TWR					SSRmAC + SSRmS		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 TWR							Wide Area MDS planned for Queenstown in 2010
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		
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

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
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					SSRmAC + ADS-B + ADS-C		ADS-C Trial
Colombo APP					PSR		
THAILAND							
Bangkok ACC	S		YES	YES	PSR + SSRmAC + 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
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		
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		

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
Honolulu, Hawaii APP Honolulu, Hawaii TWR					PSR		
Kahului, Hawaii APP Kahului, Hawaii TWR					PSR + SSRmAC		
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 Mount Santa Rosa, Guam APP Mount Santa Rosa, Guam TWR					PSR + SSRmS PSR + SSRmAC		
Kona, Hawaii ACC					SSRmAC		
VIET NAM Hanoi ACC					PSR + SSRmAC + ADS-B		
Noibai APP Noibai TWR					SSRmAC		SMR, A-SMGCS
Ho Chi Minh ACC					PSR + SSRmAC + ADS-B +ADS-C		
Danang APP					PSR		
Honoi ACC							
Tansan Nhat APP					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
Tansan Nhat TWR							SMR, A-SMGCS

APAC ANP, VOLUME II

PART IV - AIR TRAFFIC MANAGEMENT (ATM)

1. INTRODUCTION

1.1 This part of the APAC ANP, Volume II, complements the provisions in ICAO SARPs and PANS related to air traffic management (ATM). It contains dynamic plan elements related to the assignment of responsibilities to States for the provision of ATM facilities and services within a specified area in accordance with Article 28 of the *Convention on International Civil Aviation* (Doc 7300); and mandatory requirements related to ATM facilities and services to be implemented by States in accordance with regional air navigation agreements. Such agreement indicates a commitment on the part of the State(s) concerned to implement the requirement(s) specified.

2. GENERAL REGIONAL REQUIREMENTS

Optimization of traffic flows

2.1 The Planning and Implementation Regional Groups (PIRG), through regional air navigation agreement, are responsible for the optimization of the traffic flows through the continuous improvement of the regional ATS route network and organized track systems and implementation of random routing areas and free route airspace in the Region(s) through the set-up of appropriate mechanisms for regional and inter-regional planning and coordination.

2.2 Whenever practicable, States should, in close coordination with operators, establish the most efficient routings.

2.3 The requirements for regional ATS route network, in particular, for ATS routes over the high seas and airspace of undetermined sovereignty, should be agreed upon through regional air navigation agreement.

Note: States' AIPs and other States publications should be consulted for information on the implemented ATS routes.

Aircraft Identification-SSR Code Management

2.4 Within the context of Air Traffic Management (ATM) and the provision of air traffic services (ATS), SSR code management is a key element of ATM to ensure continuous, unambiguous aircraft identification. The number of Secondary Surveillance Radar (SSR) codes is limited and poor management of the assignment of SSR codes results in capacity constraints and aircraft delays. States and Air Navigation Service Providers (ANSP) should apply the SSR Code Allocation Plan approved by the APANPIRG. The SSR Codes Allocation Plan of the Asia and Pacific Regions is addressed in the Specific Regional Requirements of Volume II.

3. SPECIFIC REGIONAL REQUIREMENTS

Optimization of traffic flows

3.1 The ATS routes agreed through regional air navigation or bi/multi-lateral agreement as appropriate within sovereign airspace (including those not implemented for specific reasons) are listed in **Table ATM II-APAC-1, Asia and Pacific Regions ATS Routes**. Proposed ATS routes that have not been agreed are listed in the Asia/Pacific ATS Route Catalogue, available on the ICAO APAC Regional Office website.

3.2 Selection of designators shall be in accordance with Annex 11, Appendix 1 and can be made from the following allocation table, until such time as APAC ATS route designators are managed by ICAO International Codes and Routes Designators (ICARD):

Letter	
Conventional (A, B, G, R – ref Appendix 2, Annex 11)	200-224, 325-349, 450-474, 575-599
RNAV (L, M, N, P)	500-524, 625-649, 750-774, 875-899

3.3 ATS route proposals shall be considered for designation as RNAV routes and not conventional routes wherever practicable. Three number designators should be used, but a zero (‘0’) shall not be the first number.

3.4 States must complete appropriate bilateral coordination with neighbouring States/FIRs before submitting a regional ATS route proposal for change, deletion or addition, to the ICAO APAC Regional Office. A Regional Air Navigation Plan 'Amendment Proposal Template' is available on the ICAO APAC website under 'APAC Electronic Documents'.

Aircraft Identification-SSR Code Management

3.5 The SSR Codes Allocation Plan of the Asia and Pacific Regions is in **Table ATM II-APAC-2, SSR Codes Allocation Plan**.

Table ATM II- APAC- 1 – Asia and Pacific Regions ATS Routes

EXPLANATION OF THE TABLE

Column

1 *Designator of ATS route and Type (Conventional, RNAV5 or RNAV1 etc.)*

2 *Significant points defining the ATS routes. Only prominent locations have been listed. Additional points where facilities are provided to complete navigational guidance along a route, but not otherwise marking significant characteristics of the route (change of heading of centre line, intersection with other routes, etc.) have normally not been included. Locations shown in parentheses indicate significant points outside the Region.*

Note 1. Not representing the operator's requirements. Operator's required route and/or navaids are shown in square brackets ([ ]).

Note 2. Subject to further study. Including the associated navigation aid coverage.

Note 3 Subject to military agreement.

Note 4. Not acceptable at present.

Note 5. At present, implementation possible only during specific periods (e.g. weekends, nights, etc., as published).

Note 6. At present, implementation of the RNAV route only possible above FL 300, or as published.

Note 7. Unidirectional use.

Note 8. For ATS route or part thereof is RNAV 1

Note 9: Acronyms used for route names are only intended as a rough guide to the location of the routes:

IND - India
SEA - South East Asia
SCS - South China Sea
PHI - Philippines
THA - Thailand
TPE - Taipei
PRD - Pearl River Delta
KAB - Kabul
IDO - Indonesia
COL - Colombo
CHA - China
IATA - earlier IATA requested routes in China
WPC - West Pacific Area

Whenever reference to name States is made in Table ATM II-XX in connection with the above notes, the following abbreviations, based on those indicated in Location Indicators (Doc 7910), are used:

Note 10: Route names in parenthesis refer to the original names from an earlier route catalogue. They are renamed following consolidation of China routes and ARNR TF 3 meeting.
Note 11: route segments which have not been implemented are shown by bold significant points.

Designator Type	Significant Points	Designator Type	Significant Points
1	2	1	2
A1	LIMLA 1546.0N 09836.0E BANGKOK UBON DANANG BUNTA IKELA 1839.7N 11214.7E CHEUNG CHAU ELATO 2220.0N 11730.0E MAKUNG TAIBEI KAGOSHIMA HACHIJO JIMA	A91	(KYAKHTA) SERNA 5018.5N 10628.1E ULAN BATOR
A201	LASHIO AGARTALA RAJSHAHI MONDA 2521.00N 08626.25E PATNA LUCKNOW	A202	CHEUNG CHAU SIKOU 2050.6N 11130.0E SAMAS 2030.3N 11029.7E ASSAD 182028N 1074053E XONUS 1804.2N 10714.0E DONGHOI VILAO 1718.0N 10600.0E SAVANNAKET KORAT BANGKOK
A204	YOROI 4500.5N 14147.1E RISHIRI AKSUN 4545.1N 14054.3E (SELTI) (4713.3N 14013.3E)	A206	ASSAD VINH NONGT LUANG PRABANG
A211	MANADO TARAKAN TAWAU	A212	PUPIS PAGO PAGO NIUE
A215	PORT MORESBY MERAUKE HASANUDDIN KEVOK 0425.0S 11500.0E	A216	COOKTOWN AKMIP 1200.0S 14448.6E KIKORI GUNNY 0500.00N 14400.00E RICHH 1711.49N 14249.12E
A218	HARBIN (EKIMCHAN) (MYS SHMIDTA) BARROW	A219	KARACHI NAWABSHAM KALAT 2902.0N 06635.0E SERKA 2951.0N 06615.0E KANDAHAR (TERMEZ)
A220	CLUKK 3605.0N 12450.0E TAHITI	A221	GUAM ROTA IS TINIAN IS SAIPAN
A222	GUAM POHNPEI KOSRAE KWAJALEIN	A224	JOHOR BAHRU MERSING
A325	PRARATAPGARH TASOP 2514.1N 07045.0E KARACHI JIWANI	A326	SHIGEZHUANG OKTON 3911.2N 11653.5E TIANJIN MAKNO 3827.6N 12110.0E SANKO 3814.2N 12228.4E DONVO 3734.0N 12320.0E AKARA 3130.0N 12330.0E

Designator Type	Significant Points	Designator Type	Significant Points
1	2	1	2
A331	ZIGIE 2419.0N 15717.5W SEDAR 4530.4N 12643.0W	A332	APACK 2402.8N 15619.3W AMITY 2626.0N 15229.0W HEMLO 4318.2N 12640.8W
A334	HAT YAI KOTA BHARU	A337	ADKAK 3354.0N 14210.0E TEGOD 2100.0N 14512.0E JUNIE 1132.5N 14706.3E KISME 0500.0N 14805.4E
A338	CHRISTCHURCH APORO5000.0S 17120.0E BYRD	A339	PERTH CURTIN ELBIS 0905.9S 12743.7E SHREE 0539.0N 13109.2E KEITH 2100.0N 13456.8E SABGU 2529.9N 13459.3E MAKDA 2716.0N 13551.2E TAXON 3000.0N 13714.5E YOSHI
A340	RAYONG BISOR 1221.0N 10247.0E PHNOM PENH	A341	KOTA KINABALU SANDAKAN ZAMBOANGA
A342	COLD BAY OLCOT 5125.8N 16533.3E	A344	ROZAX 0245.6S 11140.0E SUMBAWA
A345	PYONGYANG GOLOT 4012.5N 12430.5E FENGCHENG KAIYUAN HAILAR KAGAK 4916N 11806E MANLI 4935N 11727E TELOK 4938N 11722E (CHITA)	A346	HAMILTON IS AUCKLAND
A347	MUMBAI BODAR 2236.3N 07413.3E PRATAPGAPH DELHI	A348	MELBOURNE EAST SALE NISEP 4146.6S 15601.5E
A364	SHACHE KASHI KURUM 4006.0N 07407.0E	A450	DENPASSAR HASSANUDDIN CAHYO 033000N 1333000E YAP IS GUAM WAKE KATHS 2104.6N 16123.4W
A453	KABUL GHAZNI KANDAHAR (ZAHEDAN) (BANDER ABBAS)	A454	KARACHI PARET 2527.2N 06451.5E TAPDO 2424.0N 06120.0E (VUSET)
A455	PESHAWAR METAR 3406.0N 07128.0E KOTAL 3406.0N 07109.0E	A456	AMRITSAR LAHORE MOLTA 3012.0N 07236.2E BINDO
A457	HAT YAI TAMOS 0632.2N 10024.0E ALOR SETAR PENANG KUALA LUMPUR JOHOR BAHRU	A460	KUQA REVKI 4232.5N 8013.2E (KIRBALTABAY)

Designator Type	Significant Points	Designator Type	Significant Points
1	2	1	2
A461	DAWANGZHUANG WEIXIAN ZHOUKOU HEKOU LONGKOU LILING YINGDE SHILONG BEKOL 2232.6N 11408.0E CHEUNGCHAU NOMAN 2000.0N 11640.3E MUMOT 1930.4N 11714.5E AVMUP 1843.3N 11808.3E SAN FERNANDO CABANATUAN MANILA SAN JOSE ZAMBOANGA AMBON DARWIN ALICE SPRINGS LEIGH CREEK	A462	KOLKATA DHAKA
A464	CHIANG MAI BANGKOK HAT YAI IPOH BATU ARANG KUALA LUMPUR SINGAPORE TINDAL TAROOM LORD HOWE IS AUCKLAND	A465	KOLKATA VISHAKAPATNAM CHENNAI COLOMBO
A466	(KABUL) SANAM 3305.0N 07003.0E DERA ISMAIL KHAN JHANG 3116.0N 07218.0E SAMAR 3120.8N 07434.0E ASARI 3048.3N 07509.6E DELHI	A467	BIRATNAGAR KATIHAR KOLKATA
A468	KUQA KAMUD 4134.0N 07850.0E	A469	HO CHI MINH CONSON IS
A470	HONG KONG MAGOG 2217.3N 11549.4E SHANTOU XINGLIN FUZHOU YUNHE TONGLU HANGZHOU LISHUI BANTA PIXIAN	A472	KOTAL 3406.0N 07109.0E METAR 3406.0N 07128.0E BAREV 3406.0N 07135.0E PESHAWAR

Designator Type	Significant Points	Designator Type	Significant Points
1	2	1	2
A474	DELHI ASOVO MUMBAI MURUS 0600.0S 06319.7E (PLAISANCE)	A575	PYONGYANG GOLOT 4012.5N 12430.5E FENGCHENG DONGYANGJIAO DAHUSHAN CHAOYANG ANDIN 4106.0N 11843.5E GUBEIKOU FENGNING EREN INTIK 4341.5N 11155.0E SAINSHAND ULAN BATOR (KYZYL)
A576	MEDAN SINGAPORE DENPASAR CURTIN ALICE SPRINGS PARKES SYDNEY	A577	SHIKANG KADET2100.0N 11934.0E
A578	TONIK 3200.0N 14600.0E PHONPEI NAURU TARAWA NADI AUCKLAND	A579	SYDNEY NADI CARRP 1904.4N 15935.0W
A580	AUCKLAND NAUSORI APIA	A581	BAGO CHIANG MAI CHIANG RAI PONUK 2018.8N 10023.0E SAGAG 2111.5N 10137.4E BIDRU KUNMING MAGUOHE QIANXI HUAYUAN LINLI WUHAN
A582	JOMALIG NAHA KAGOSHIMA IKISHIMA BUSAN SEOUL	A583	CHEUNG CHAU SABNO 1859.1N 11550.7E MAVRA 1814.4N 11615.1E AKOTA 1706.6N 11651.6E IBOBI 1354.4N 11832.6E REKEL 1324.1N 11848.3E LEGED 1301.9N 11859.6E TOKON 1142.0N 11940.3E ZAMBOANGA
A584	TONGA NIUE APIA FUNAFUTI NAURU	A585	PALEMBANG JAKARTA PORT HEDLAND CEDUNA ADELAIDE

Designator Type	Significant Points	Designator Type	Significant Points
1	2	1	2
A586	INTOS 3722.00N 13120.00E PUSAN CHEJU ERABU NAHA	A587	SUMBAWA ALICE SPRINGS
A588	DALIAN WAFANGDIAN WANGBINGOU KAIYUAN CHANGCHUN HARBIN SIMLI 5017.4N 12722.1E	A589	DELHI BUTOP 2919.7N 07523.9E ASARI 3048.3N 07509.5E
A590	JOMALIG MINAMI DAITO YOSHI 3310.2N 13857.4E OYAMA KAGIS 3549.0N 14234.0E PABBA 3700.0N 14400.0E PASRO 1417.1N 16040.5E AMOTT 6054.0N 15121.6W	A591	QINDAO XUEJIADAO LATUX 3532.0N 12044.0E MUDAL 3651.0N 12322.0E AGAVO 3710.0N 12400.0E
A592	PUPIS 1000.0S 17105.5W APIA VAVA'U TONGA	A593	TANGHEKOU XILIUHETUN SHIGEZHUANG POTOU PIXIAN WUXI SHANGHAI NANHUI FUKUE
A595	FUKUOKA IKISHIMA CHEJU	A596	HUAIROU HUAILAI TIANZHEN LIANGCHENG BAOTOU DENGKOU YABRAI
A597	KUSHIMOTO MONPI 2100.0N 14036.0E GUAM HONIARA NOUMEA AUCKLAND	A598	BRISBANE HONIARA NAURU MAJURO

Designator Type	Significant Points	Designator Type	Significant Points
1	2	1	2
A599	CHITTAGONG LINSO 2322.5N 09855.0E GENGMA KUNMING LUXI BOSE LAIBIN GAOYAO PINGZHOU ZHULIAO WONGYUAN NANXIONG GANZHOU NANFENG SHANGRAO TONGLU NANXUN SHANGHAI	A791	(IMLOT) JIWANI KARACHI PRATAGARH BHOPAL JAMSHEDPUR KOLKATA
B200	ENKIP 3547.0S 17730.0E FICKY 3133.6N 12123.5W	B202	UBON PAKSE PLEIKU
B203	KATHMANDU BAGDOGRA GUWAHATI SILCHAR IMPHAL LASHIO	B204	GOMES 1324.0N 10135.3E SIEM REAP
B205	RAYONG BOKAK 1257.5N 10230.0E SIEM REAP	B206	URUMQI FUKANG ALTAY GOPTO 4905.5N 08728.0E (AKTASH)
B209	JAMSHEDPUR KHAJURAHO TIGER 2828.8N 07214.9E	B210	TASOP 2513.3N 07048.9E NAWABSHAH
B211	MUMBAI EPKOS 1653.1N 07407.2E CHENNAI	B213	LHASA CHENGDU
B214	NASAN LADON 2106.2N 10258.0E AKSAG 2049.1N 10027.3E	B215	DAWANGZHUANG TAIYUAN YINCHUAN YABRAI JIUQUAN HAMI FUKANG URUMQI KUQA SHACHE HONGQILAPU PURPA 3656.5N 07524.5E GILGIT ISLAMABAD

Designator Type	Significant Points	Designator Type	Significant Points
1	2	1	2
B218	KUNMING SIMAO 2243.1N 16058.2E SAGAG 2111.5N 10137.4E VIENTIANE LOEI CHUM PHAE	B219	PENANG KOTA BHARU
B220	BRISBANE PORT MORESBY	B221	NINAS 3100.0N 12215.0E PINOT 3125.2N 12214.2E SAGUT 3500.0N 12040.3E XUEJIADAO
B222	VINIK 0838.6N 11613.8E KOTA KINABALU	B223	DABUR 5147.1N 14235.9E LUMIN 4545.0N 14150.3E WAKKANAI
B326	HONIARA CHOKO 2022.6N 16053.0W	B328	EREN TAMURTAI TIANZHEN NANCHENGZI WEIXIAN
B329	PHNOM PENH PAKSE LEBAL 1630.2N 10556.7E VILAO 1722.0N 10605.0E	B330	HONG KONG TAMOT PINGZHOU GAOYAO DOUJIANG QUIANXI FUJIACHANG JINGTAI YABRAI MORIT 4202.0N 10249.0E NIDOR 5029.4N 09125.8E (LIKAR)
B331	CHEUNG CHAU KAPLI 2110.0N 11730.0E HENGCHUN	B332	SANKO 3814.2N 12228.4E TOMUK 3843.0N 12400.0E PYONGYANG SINSONGCHON SONDO 3947.0N 12713.6E KANSU 3838.0N 13228.5E
B333	AUCKLAND PORT MORESBY	B334	BEIJIN TANGHEKOU FENGNING TONGLIAO
B337	(TAKHTOYAMSK) ANIMO 4508.3N 14337.8E ASAHIKAWA	B338	MERSING TEKONG ANITO 0017.0S 10452.0E
B339	ULAN BATOR POLHO 4447.0N 11315.0E FENGNING	B345	KATHMANDU BHARATPUR BHAIRAHAWA LUCKNOW
B346	LUANG PRABANG NOBER 1516.6N 10040.1E BANGKOK	B349	BALI POTIP 2141.6S 12508.0E
B450	SYDNEY LORD HOWE IS NORFORK IS PAGO PAGO	B451	HAILAR QIQIHAR HARBIN BISUN 4314.0N 13111.8E (VLADIVOSTOK)

Designator Type	Significant Points	Designator Type	Significant Points
1	2	1	2
			IGROD 4139.0N 13647.0E KADBO 3914.0N 13745.0E
B452	TONIK 3200.0N 14600.0E HONIARA NADI	B453	MIDDLETON IS KATCH 5400.0N 13600.0W DAASH 4226.5N 12600.1W
B454	PAGO PAGO RAROTONGA TONYS 3019.9N 12249.2W	B455	VAVA'U NISEX 1547.3S 17136.4W
B456	WEWAK JAYAPURA	B459	MUMBAI CLAVA 0134.0N 06000.0E (PRASLIN)
B460	KHORAT SAVANNAKET	B462	MACKAY HAMILTON IS. PORT MORESBY KADAB 0458.0S 14100.0E BIDOR 0400.0S 13130.0E TACLOBAN MANILA CABANATUAN LAOAG MIYAKO JIMA OKINAWA
B463	BAGO MANDALAY LASHIO	B465	KOLKATA CHITTAGONG MANDALAY LUANG PRABANG HANOI
B466	JOHOR BAHRU BATU ARANG CHENNAI MUMBAI	B467	KANGWON INTOS 3722.0N 13120.0E KANSU 3838.0N 13228.5E NULAR 4059.2N 13411.0E (TEKUK) 4241.0N 13527.4E
B468	DIENBIEN LADON 2106.2N 10258.0E LUANG PRABANG	B469	SINGAPORE JAKARTA CARNARVON GERALDTON PERTH CAIGUNA WHYALLA GRIFFITH SYDNEY
B470	SINGAPORE PANGKALPINANG JAKARTA	B472	LIPA ILO ILO COTABATO SELSO 0400.0N 12616.0E TOREX 0724.0N 13335.0E GOVE NORMANTON
B473	LIPA ROXAS CAGAYAN-DE-ORO DAVAO SADAN 0400.0N 12805.0E CAIRNS	B474	SYDNEY SANTO NANUMEA CHOKO 2022.6N 16053.0W

Designator Type	Significant Points	Designator Type	Significant Points
1	2	1	2
B480	(RAZDOLITE) LETBI 5011.9N 10330.6E BULGAN MORIT 4202.0N 10249.0E	B575	AUCKLAND TONGA PAGO PAGO
B576	TAIBEI CHEJU SEOUL	B577	NADI WALLIS IS APIA PAGO PAGO FICKY 3133.5N 12123.5W
B578	BRISBANE NOUMEA TAHITI	B579	PHUKET LANGKAWI PENANG
B580	SYDNEY NOUMEA CHOKO 2022.6N 16053.0W	B581	NADI FICKY 3133.5N 12123.5W
B583	BRUNEI DARWIN	B584	DENPASAR ELANG 0056.0S 11449.5E KOTA KINABALU
B586	NOUMEA SEKMO KAPKI PORT MORESBY GUAM OMLET 2100.0N 14259.2E OSHIMA	B587	ST GEORGE KOWANYAMA OPABA 0851.5S 13804.0E TIMIKA BIAK RENAN 0330.0N 13416.6E ENDAX 1415.0N 13000.0E ATVIP 2100.0N 12422.0E HUALIEN
B589	PORT MORESBY KAPKI 1014.9S 14817.7E BUKA MAJURO	B590	NOUMEA PORT VILA NAURU
B591	SHANGHAI TAIBEI HENCHUN	B592	KOTA KINABALU JAKARTA
B593	KOLKATA COMILLA AGARTALA GUWAHATI	B595	TAHITI KONA
B596	RAROTONGA DOVRR 1843.0N 15740.0W	B597	ERABU TANEGASHIMA SHIMIZU
B598	DARWIN THURSDAY ISLAND PORT MORESBY KAPKI 1014.9S 14817.7E HONIARA PORT VILA NADI NAUSORI TONGA RAROTONGA	B599	NOUMEA NADI TAHITI
B757	KATCH 5400.0N 13600.0W CAPE NEWENHAM NULUK 5822.9N 17706.1W	B932	BAMOK 5625.5N 17249.3E (NETRI 4739.3N 15000.0E) ODERI 4439.0N 14515.2E MEMANBETSU
G200	CHRISTMAS IS.	G202	(KANDAHAR)

Designator Type	Significant Points	Designator Type	Significant Points
1	2	1	2
	COCOS IS (PLAISANCE)		ZHOB RAHIM YAR KHAN
G203	MIHO PUSAN	G204	ELNEX SHENGXIAN METAN SHANGHAI
G205	HAMILTON IS. GURNEY JUNIE	G206	DILARAM KABUL SABAR PURPA
G208	MUMBAI PARTY 2414.6N 07052.0E KARACHI PANJGUR (ZAHEDAN)	G209	LAERMONTH CHRISTMAS ISLAND PALEMBANG
G210	PANJGUR KARACHI MUMBAI	G212	(KHABAROVSK) ARGUK 4753.5N 13439.4E HAIQING JIAMUSI HARBIN TONGLIAO GUBEIKOU QINBAIKOU NANCHENGZI TAIYUAN YIJUN SANYUAN XIAOYANZHUANG NINGSHAN WUFENGXI FUJIACHANG WEINING MAGUOHE KUNMING
G213	BIAK BEKUB 0350.0N 13845.0E GUAM	G214	JIWANI PANJGUR RAHIM YAR KHAN MOLTA 3012.0N 07236.2E
G215	DUTCH HARBOR OLCOT 5125.8N 16533.3E	G216	(DORAB) ALPOR 2404.7N 06120.0E LATEM 2431.7N 06449.7E KARACHI
G218	HOHHOT TUMURTAI POLHO 4447.0N 11315.0E SOLOK 4954.0N 11545.0E	G219	VIRUT 0230.8N 10402.7E TEKONG
G221	PHUCAT BUNTA 1650.0N 10923.7E BAOLONG HAIKOU SAMAS SIKOU	G222	SAPDA BROOME AYERS ROCK PARKES
G223	ADKAK TONIK 3200.0N 14600.0E NAURU NADI	G224	NORFORK IS NADI PAGO PAGO TAHITI

Designator Type	Significant Points	Designator Type	Significant Points
1	2	1	2
	NAUSORI NIUE AITUTAKI TAHITI (LIMA)		ISLA DE PASCUA (SANTIAGO)
G325	COLOMBO TIRUCHCHIRAPPALLI	G326	BALI TENNANT CREEK BRISBANE
G327	NANHUI NINAS 3100.0N 12215.0E AKARA 3130.0N 12330.0E	G329	BRISBANE NORFORK IS
G330	SHANGHAI POMOK NANTONG GURNI 3209.2N 12058.5E PIMOL 3215.0N 11944.0E	G331	PHUKET PADET DAWEI
G332	TANGHEKOU CHAOYANG	G333	DELHI ESDEM TIGER 2828.8N 07214.9E
G334	KUALA LUMPUR TIOMAM BUNTO 0242.0N 10600.0E DOTAS 0201.1N 10820.5E SIBU	G335	KATHMANDU JANAKPUR PATNA
G336	DHANBAD PATNA SIMRA KATHMANDU	G337	PERTH CHRISTMAS IS PEKANBARU
G339	PUSAN FUKUOKA KAGOSHIMA TANEGASHIMA PAKDO GUAM	G338	CHOIBALSAN KAGAK
G340	QINGBAIKOU HUAILAI	G341	CHANGCHUN WANGQING
G342	CAIRNS HONIARA	G344	COMFE 3624.0N 14618.0E CUTEE 4624.9N 16218.6E CUDDA 5647.9N 16018.1W
G345	UNTAN CHANGZHOU LISHUI	G346	KIMCHAEK NULAR 4059.2N 13411.0E IGROD 4139.0N 13647.0E
G347	AUCKLAND POPIR 2500.0S 17804.8W PADDI 1825.7N 15854.8W	G348	PARO BAGDOGRA MECHI KATHMANDU
G424	(DAR ES SALAAM) VUTAS 0912.0N 06000.0E ALATO 1340.7N 06344.0E	G450	(MOGADISHU) MUMBAI NAGPUR KOLKATA
G451	AHMEDBAD SASRO 2404.3N 07100.0E PARTY 2414.6N 07052.0E	G452	(ZAHEDAN) RAHIM YAR KHAN TIGER 2828.8N 07214.9E DELHI
G453	KUALA LUMPUR	G454	(PLAISANCE)

Designator Type	Significant Points	Designator Type	Significant Points
1	2	1	2
	KOTA BHARU		BOBOD 0600.0S 06941.1E PADLA 0446.1N 07800.0E COLOMBO
G455	SHANGHAI PINOT 3125.2N 12214.2E AKARA 3130.0N 12330.0E	G457	DOVRR 1843.0N 15740.0W ELLMS 0500.0S 16704.1W PAGO PAGO FAROA 2500.0S 17502.3W DIVSO 3452.3S 17624.5E
G458	BANGKOK SURAT THANI PHUKET	G459	CAIRNS TIMIKA
G460	KUCHING SIBU BINTULU BRUNEI	G463	RAJSHAHI DHAKA CHITTAGONG BAGO BETNO 1505.8N 09812.7E BANGKOK
G464	PONTIANAK ROZAX 0245.0S 11140.0E BALI KARRATHA BALLIDU PERTH	G465	(PRASLIN) MALE COLOMBO
G466	HO CHI MINH PHUCAT HENGCHUN	G467	LUBANG JOMALIG GUAM
G468	PENANG MEDAN	G469	PORT HEIDEN ST PAUL IS NYMPH 5324.5N 16814.4E
G470	XIANYANG FENGHUO CHANGWU JINGNING JINGTAI QITAI	G471	SHILONG LONGMEN GANGZHOU
G472	KARACHI AHMEDABAD NAGPUR BHUBANESHWAR PATHEIN BAGO	G473	BAGO MAKAS 1649.7N 09830.0E PHITSANULOKE UBON
G474	BANGKOK MENAM 1357.3N 10247.7E SOURN 1345.5N 10600.0E ANINA 1359.0N 10725.0E PHUCAT	G575	TAHITI RANGIROA FICKY 3133.5N 12123.5W
G576	CHEER 5310.0N 14000.1W SPONJ 4992.0N 13005.1W	G578	GURAG 2100.0N 12725.0E DILIS 1431.0N 12600.0E TACLOBAN MACTAN ZAMBOANGA DENPASAR PORT HEDLAND PARABURDOOD PERTH
G579	JAKARTA	G580	TOMAN 0121.5N 10547.0E

Designator Type	Significant Points	Designator Type	Significant Points
1	2	1	2
	PALEMBANG SINGAPORE JOHOR BAHRU		NIMIX 0124.9N 10759.2E ATETI 0125.7N 10830.1E KUCHING MIRI BRUNEI
G581	HONG KONG ELATO 2220.0N 11730.0E HENGCHUN MIYAKO JIMA BISIS 2647.0N 12633.0E ERABU TAPOP 3240.0N 13607.9E	G582	PUGER 0324.1N 10017.6E BATU ARANG PEKAN
G583	EMMONAK BESAT 5945.0N 17925.1W (UST-BOLSHERETSK) BISIV 4456.3N 14412.3E MONBETSU	G584	KUALA LUMPUR PEKAN KUCHING
G585	MIHO POHANG SEOUL	G586	YINGDE ERTANG
G587	TAIBEI PABSO 2538.0N 12252.0E BULAN 2704.0N 12400.0E	G588	MOOREN KHOVD TEBUS 4725.1N 09027.7E TESAN 4701.7N 08947.8E FUKANG
G590	SIMRA VARANASI KHAJURAHO BHOPAL INDORE BODAR 2236.3N 07413.3E	G591	CAIRNS NOUMEA NORFORK IS AUCKLAND
G593	FUNAFUTI NAUSORI NIUE RAROTONGA	G594	TIAMU TAHITI RAROTONGA AUCKLAND SOLIT 2355.0S 07500.0E (PLAISANCE)
G595	(TAHITI) SYDNEY MABAD 2648.4S 07500.0E (PLAISNACE)	G597	DONVO 3734.0N 12320.0E AGAVO 3710.0N 12400.0E SEOUL KANGNUNG MIHO OTSU KOWA OSHIMA VENUS 3618.2N 14042.1E
G598	LUCKNOW APIPU 2658.6N 08300.0E SIMARU	G599	AUCKLAND TAHITI
R200	PINGZHOU LIANSHENGWEI BIGRO ZHANJIANG	R201	BANGKOK UTAPAO
R202	PHRAE TATEL 1729.1N 098 45.8E	R203	SAPAM 0804.6N 09733.0E PHUKET

Designator Type	Significant Points	Designator Type	Significant Points
1	2	1	2
R204	KEITH 2100.0N 13456.5E KALIN 0000.0N 14200.0E LIDIT 0918.0S 14220.0E HORN IS CAIRNS	R205	ANARAK BIRJAND
R 206	PORT HEDLAND CHRISTMAS IS JAKARTA	R207	VIENTIANE NAN CHIANG MAI MANDALAY
R208	KUALA LUMPUR KUALA TRENGGANU KANTO 0649.9N 10348.3E	R209	TATOX 0857.0N 09702.0E LANGKAWI
R210	PORT MORESBY CAIRNS	R211	SWAMP 3619.2N14032.3E IWAKI NIIGATA KADBO 3914.0N 13745.4E AVGOK 4336.0N 13815.0E VELTA 4529.0N 13710.0E
R212	(DIEGO GARCIA) GUDUG 0704.6S 07500.0E PIBED 0520.2S 09044.0E	R215	CHIANG RAI NAN LUANG PRABANG
R217	NODAN 4025.0N 14500.0E SENDAI NIIGATA	R218	DELHI DIPAS 2738.3N 07551.9E JAIPUR
R220	IWAKI NANAC 3854.2N 14313.9E NIPPI 4942.6N 15920.8E NODLE 6117.0N 15200.0W	R221	MERSING PULAU TIOMAN
R222	AVGOK 4336.0N 13815.0E (YEDINKA)	R223	BRUNEI ELANG 0056.0S 11449.5E
R224	YANJI VASRO 4227.8N 12944.4E KANSU	R325	KATHMANDU JANAKPUR DUMKA 2411.0N 08721.3E KOLKATA PHUKET HAT YAI IPOH JOHOR BAHRU
R326	NORFOLK IS CHRISTCHURCH	R327	GISBORNE FAROA
R328	DANANG HUE LEBAL 1630.2N 10556.7E SAVANNAKHET	R329	KAGLU 1231.2N 07200.0E MALE GAN (DIEGO GARCIA)
R330	SHEMYA POWAL 5024.3N 16530.8E	R332	MAJURO BONRIKI AKUMO 0614.9S 17535.5E ROTUMA NADI
R334	RAYONG KOH KONG SIHANOUK PHU QUOC	R335	VINH ALPHA 1832.6N 10319.7E VIENTIANE
R336	ADAK CARTO 4840.5N 16847.0E	R337	TACLOBAN KOROR

Designator Type	Significant Points	Designator Type	Significant Points
1	2	1	2
R338	NOME NINNA 5455.7N 17158.8E	R339	SIKOU 2050.6N 11130.0E HUGUANG NANNING BOSE
R340	AMBON WALGETT	R341	KODIAK NINNA 5455.7N 17158.8E
R342	MANADO BONDA 0200.0N 12451.2E PEDNO 0400.0N 12521.0E GENERAL SANTOS DAVAO	R343	NANXIANG WUXI LISHUI HEFEI WUHAN LONGKOU LAOLIANGCANG DARONGJIANG LAIBIN NANNING
R344	KATHMANDU BIRATNAGAR KATIHAR RAJSHAHI	R345	ROIET BIDEM 142153.57N 1034750.07E SIEM REAP
R346	TOWNSVILLE PORT MORESBY	R347	NIIGATA SADO EKVIK 3944.7N 13636.5E IGROD 4139.0N 13647.0E (VELTA) 4529.0N 13710.0E
R348	KADAP 0200.0S 08409.6E LATEP 0610.3S 07500.0E (DIEGO GARCIA)	R349	LEMOK 1000.0N 10302.2E RASER 1000.0N 10506.0E HO CHI MINH
R450	KIETA HONIARA	R451	ADAK OGDEN 4929.2N 16102.3E
R452	SONDO 3947.0N 12713.6E HAMUN 3955.1N 12731.1E KIMCHAEK UAMRI 4217.6N 13041.8E (TEKUK) 4241.0N 13527.4E	R453	NADI APIA
R455	PONTIANAK KUCHING	R458	MUMBAI EPKOS 1653.0N 07407.2E BELGAUM
R457	CHENNAI TIRUCHIRAPALLI MADURAI GUTEG 091100.0N0773154.0E TRIVANDRUM MALE	R460	DELHI ALIGARH LUCKNOW VARANASI GAYA KOLKATA
R461	MUMBAI MABTA 1708.5N 07321.8E BELGAUM COIMBATORE COLOMBO MEDAN KUALA LUMPUR	R462	(SEEB) DENDA 2442.5N 06054.8E JIWANI KARACHI UPAIPUR DELHI
R463	APACK 2402.6N 15619.2W ALCOA 3750.0N 12550.0W	R464	BITTA 2332.0N 15529.0W BEBOP 3700.0N 12500.0W
R465	CLUTS 2300.0N 15439.0W CLUKK 3605.0N 12450.0W	R467	KUALA LUMPUR GUNIP 0429.9N 09931.9E

Designator Type	Significant Points	Designator Type	Significant Points
1	2	1	2
R468	BANGKOK BOKAK 1257.5N 10230.0E PHNOM PENH SAPEN 1102.2N 10611.0E HO CHI MINH	R469	PEKANBARU SINGAPORE
R470	VIENTIANE UDON THANI KHON KAEN	R472	KOLKATA RAJSHAHI GUWAHATI
R473	LILING NANXIONG WONGYUANG ZHULIAO PINGZHOU TAMOT 2221.5N 11352.0E	R474	GAOYAO NANNING LONGZHOU HANOI VIENTIANE BANGKOK
R575	PAPRA 1546.0N 10711.0E KOH KONG UPNEP 0942.2N 10029.6E SURAT THANI	R576	DENNS 2222.0N 15353.0W DINTY 3329.0N 12235.0W
R577	EBBER 2143.0N 15309.0W ELKEY 3241.0N 12203.0W	R578	FITES 2049.0N 15300.0W FICKY 3133.5N 12123.5W
R580	OATIS 3800.0N 14345.0E OMOTO 4859.7N 16000.7E AMOTT 6053.9N 15121.8W	R581	KOLKATA MONDA 2521.0N 08626.4E SIMARA
R582	NORFOLK IS RAROTONGA	R583	TAIBEI BISIS 2647.1N 12633.1E OKINAWA MINAMIDAITO SABGU BUNGO
R584	AVLAS SALVA 2222.7N 13059.7E KEITH 2100.0N 13456.48E GUAM TRUK POHNPEI KWAJALEIN MAJURO JOHNSTON IS CHOKO 2022.9N 16053.2E	R585	CITTA 2818.9N 14507.2W GATES 3412.7N 12303.9W
R587	BRISBANE PORT VILA	R588	PHUKET RELIP PHNOM PENH PLEIKU
R590	AMBON COTABATO	R591	CAPE NEWENHAM AKISU 4734.3N 16119.3E ABETS 3605.0N 14425.0E
R592	BALI ONSLOW PERTH	R594	LUCKNOW JALALABAD DELHI
R595	ANPU MIYAKO JIMA KEITH 2100.0N 13456.5E GUAM	R597	CABANATUAN SARSI 1642.0N 12316.9E SKATE 1716.7N 12423.0E
R598	KOLKATA RAJSHAHI SAIDPUR	R599	KIETA GIZO HONIARA

Designator Type	Significant Points	Designator Type	Significant Points
1	2	1	2
	COOCH BEHAR BOGOP PARO		PORT VILA WHANGAREI AUCKLAND
	RNAV Routes		
L301	BANGKOK DAWEI VISHAKHAPATNAM BUSBO 1914.9N 07807.6E NOBAT 2109.0N 06800.0E RASKI 2303.5N 06352.0E (VAXIM 2319.0N 06111.0E)	L333	KHAJURAHO JAIPUR TIGER 2828.8N 07214.9E
L500	(SANTIAGO) AUCKLAND	L501	(RIO GALLEGOS) AUCKLAND
L503	BRISBANE IGEVO 3636.5S 16300.0E CHRISTCHURCH	L504	SINGAPOREMANADO
L505	BUSBO 1914.9N 07807.6E KAMOL 1938.1N 07340.0E NOBAT 2109.0N 06800.0E	L507	KOLKATA BAGO BANGKOK
L508	RAROTONGA CHRISTCHURCH MELBOURNE	L509	GAYA ASARI 3048.3N 07509.5E
L510	IBANI 250000N 0764311E ELBAB 201333N 0815954E LEKIR 071632N 0965243E GIVAL 070000N 0980000E	L512	INTOS 3722.0N 13120.0E NIIGATA
L513	PERTH HOBART AUCKLAND	L515	OBMOG 1154.1N 09623.5E IKULA 1000.0N 09721.2E PHUKET
L516	KITAL 2003.0N 06018.0E ELKEL 0149.0N 06911.0E (DIEGO GARCIA)	L517	MIRI GULIB 0409.3N 11028.1E TERIX 0415.4N 10934.9E
L518	UDAIPUR PRATAPGARH INDORE MONPI 220414N 0755956E DUBOX 202215N 0764956E BEVSU 192649N 0771533E GUMIT 185931N 0772802E HYDERABAD VIJAYWADA GOPNU 155112N 0820224E EGOLU 141858N 0844952E SADAP 120605.6N 0884120.8E	L521	SYDNEY AUCKLAND
L625	LUSMO 0333.7N 10655.7E AKMON 0812.8N 11013.4E ALDAS 1056.9N 11212.3E ANOKI 1222.0N 11315.0E ARESI 1358.4N 11427.0E AKOTA 1706.6N 11651.6E AVMUP 1843.3N 11808.3E POTIB 2100.0N 12045.5E	L628	LUBANG IBOBI 1354.4N 11832.6E GUKUM 1356.8N 11637.2E ARESI 1358.4N 11427.0E MESOX 1358.4N 11427.0E DAMEL 1358.7N 11130.6E VEPAM 1358.0N 11000.0E PHUCAT
L629	PEKAN DOLOX 0448.7N 10522.9E	L635	PEKAN MABLI 0417.3N 10612.9E
L637	BITOD 0715.3N 10612.9E	L642	CHEUNG CHAU

Designator Type	Significant Points	Designator Type	Significant Points
1	2	1	2
	TANSONNHET		EPDOS 1900.0N 11333.3E ENBOK 1833.4N 11329.5E EGEMU 1700.0N 11217.0E VEPAM 1358.0N 11000.0E PHANTHIET CONSON IS ESPOB 0700.0N 10533.4E ENREP 0452.4N 10414.8E MERSING
L643	TANSONNHET CONSON	L644	CONSON JAKARTA
L645	COLOMBO SULTO 0738.6N 08801.9E SAMAK 0758.7N 09425.0E SAPAM 0804.6N 09733.0E PHUKET	L626	KATHUMANDU ONISA 2858.1N 08005.5E DELHI
L649	BRUNEI ISKUD 0536.6N 11452.3E URKET 0811.5N 11450.0E LAXOR 0949.6N 11458.5E	L756	CLAVA MALE
L759	DELHI POSIG 2713.0N 07734.9E AGRA KHAJURAHO PHUKET	L760	AGRA GURTI 2743.8N 07747.8E DELHI
L774	(PLAISANCE) LELED 116.5S 07500.0E ELATI 0200.0S 08957.7E KETIV 0042.0S 09200.0E MEDAN	L875	VUTAS 091206N 0600004E MOXET 110146N 0645024E GOLEM 115739N 0672213E EGOGI 121100N 0690000E GOKUM 122025N 0701005E OLNIK 122850N 0711440E BEDIL 123500N 0715958E DOLPI 124641N 0732711E MANGALORE(MML) PEXEG 130415N 0760230E BANGALORE (BIA) CHENNAI (MMV)
L888	BIDRU 22 43.1N 100 57.9E MAKUL 24 03.1N 100 34.6E NIVUX 26 00.0N 100 00.0E PEXUN 30 55.9N 100 00.0E SANLI 32 00.0N 100 00.0E NOLEP 38 34.5N 088 42.5E SADAN 40 04.6N 086 00.0E KUQA VOR (KCA)	L894	KITAL 2003.0N 06018.0E MALE SUNAN 0028.7S 07800.0E DADAR 0200.0S 07927.1E PERTH
L896	SAPDA 1200.0S 11125.6E NISOK 0302.9N 09200.0E DUGOS 0853.1N 08447.9E	L897	CHRISTMAS ISLAND KETIV 0042.0S 09200.0E COLOMBO

Designator Type	Significant Points	Designator Type	Significant Points
1	2	1	2
	CHENNAI		
L899	HANIMAADHOO TRIVANDRUM	M300	(EMURU 2215.6N 05849.8E) LOTAV 2037.0N 06057.0E CALICUT MADURAI SALAX 0212.4N 10133.7E
M501	GUAM LIMLE 1639.7N 13000.0E SKATE 1722.2N 12425.6E LAOAG NOMAN 2000.0N 11640.3E	M502	BANGKOK AKATO 1337.3N 09910.3E LALIT 1252.4N 09225.1E
M503	BEGMO 2800.0N 12150.0E PONEN 2537.5N 12024.0E OBKEL 2500.0N 11953.0E LAPUG 2259.7N 11722.8E LELIM 2256.4N 11718.7E	M504	ALPOR 2404.7N 06120.0E NODER 2350.0N 06700.0E TELEM 2402.0N 06846.0E
M505	BUON MA THUOT MONDULKIRI SIEM RIEP		
M510	CAN THO PHNOM PENH	M512	COLOMBO ANIVE 0540.9N 07800.0E MALE
M520	SERNA 5018.5N 10628.1E POLHO 4447.0N 11315.0E	M522	VINIK 0838.5N 11613.8E KOTA KINABALU MAMOK 0405.1N 11547.2E DENPASAR
M625	MELBOURNE WELLINGTON	M626	KOTA BHARU DAWEI BAGO
M635	SINGAPORE RAMPY 0615.0 11320.8E CURTIN	M638	DOSTI 2558.0N 06503.0E KARACHI MINAR 2350.0N 06800.0E SAPNA 2330.0N 06750.0E NOBAT 2109.0N 06800.0E MUMBAI
M639	IGEVO 3636.5S 16300.0E WELLINGTON	M641	MADURAI BIKOK 0817.0N 07836.0E COLOMBO COCOS IS PERTH
M643	HOBART CHRISTCHURCH	M644	RAYONG KOTA BHARU
M646	HENGCHUN ABVAR 1924.8N 12037.7E LAOAG SAN FERNANDO MANILA TOKON 1142.0N 11940.5E PUERTO PRINCESA KOTA KINABALU BRUNEI DARMU 0401.7N 11240.6E KAMIN 0234.7N 10855.9E SABIP 0209.7N 10750.7E ESPIT 0200.2N 10726.4E	M750	KILOG 2152.5N 11441.6E ENVAR 2159.5N 11730.0E MOLKA 2639.5N 12400.0E MOMPA 3050.5N 12955.1E BUNGU 3407.1N 13929.9E

Designator Type	Significant Points	Designator Type	Significant Points
1	2	1	2
	OBLOT 0142.9N 10641.8E TOMAN 0121.8N 10547.3E		
M751	MERSING PEKAN KOTA BHARU REGOS 1200.0N 10035.1E BANGKOK	M753	ENREP 0452.4N 10414.8E BITOD 0715.3N 10407.3E PHU QUOC PHNOM PENH
M754	BRUNEI VINIK 0838.6N 11613.8E TENON 0915.3N 11616.5E LULBU 1104.7N 11624.4E NOBEN 1234.4N 11631.1E GUKUM 1356.8N 11637.2E AKOTA 1706.6N 11651.6E	M755	PHNOM PENH KISAN 1032.3N 10440.5E BITOD 0415.4N 10407.1E
M758	PEKAN LUSMO 0333.7N 10655.7E TERIX 0415.4N 10934.7E OLKIT 0450.1N 11149.1E KOTA KINABALU	M759	OLKIT 0450.1N 11149.1E BRUNEI
M761	PEKAN BOBOB 0222.1N 10706.1E SABIP 0209.7N 10750.5E AGOBA 0158.7N 10830.0E KUCHING	M766	COLOMBO JAKARTA INDRAMAYU MADIN 0617.9S 11023.0E CUCUT 0617.7S 11106.0E SURABAYA BALI DARWIN
M765	KOTA BHARU IGARI 0656.2N 10335.2E BITOD 0715.3N 10407.3E CONSON DAGAG 0927.8N 10826.5E MAPNO 1013.1N 11020.1E	M767	JOMALIG TOKON 1142.0N 11940.3E TENON 0915.3N 11616.5E TEGID 0857.2N 11551.6E TODAM 0631.7N 11235.4E
M768	DARWIN BRUNEI DOGOG 0525.3N 11407.5E ASISU 0559.1N 11320.8E TODAM 0631.6N 11235.6E LAGOT 0716.5N 11132.7E AKMON 0812.9N 11013.1E MOXON 0849.5N 10921.3E DAGAG 0927.8N 10826.5E TANSONNHAT	M770	KOTA BHARU RANONG BUBKO 1911.1N 08839.8E KAKID 2038.6N 08659.9E JAMSHEDPUR
M771	MERSING DOLOX 0448.7N 10522.9E DUDIS 0700.0N 10648.6E DAGAG 0927.8N 10826.5E DOXAR 1222.0N 11022.7E DAMEL 1358.7N 11130.6E DONDA 1442.2N 11201.3E DOSUT 1702.0N 11340.8E DULOP 1814.2N 11432.6E DUMOL 1900.0N 11426.8E HONG KONG	M773	BUBKO 1911.1N 08839.8E LEGOS 2138.0N 08805.3E KOLKATA
M774	SINGAPORE KIKEM 0952.9S 12607.4E	M875	KAKID 2038.6N 08659.9E BUTOP 2919.7N 07523.9E

Designator Type	Significant Points	Designator Type	Significant Points
1	2	1	2
			GUGAL 3014.5N 07358.0E DERA ISMAIL KHAN
M890	LUCKNOW CHANDIGARH SAMAR 3120.8N 07434.0E	M904	BANGKOK U-TAPHAO DIPUN SIRAT TONIK TIDAR ODONO UPRON ENREP
N502	PARDI 0034.0S 10413.0E BOBAG 0102.5N 10329.9E	N509	ELATI 0200.0S 08957.7E PORT HEDLAND
N519	MUMBAI SAPNA 2330.0N 06750.0E MINAR 2350.0N 06800.0E KARACHI	N563	(EMURU 2214.0N 05853.6E) REXOD 2112.5N 06138.5E BANGALORE MEDAN SALAX 0212.4N 10133.7E
N564	DUGOS 0853.1N 08447.9E AKMIL 1151.6N 08006.9E	N571	(RAGMA 2306.0N 06105.7E) PARAR 2226.5N 06307.0E VAMPI 0610.9N 09735.1E GUNIP 0429.9N 09931.8E
N628	PEKANBARU BUSUX 0355.0S 06000.0E (PRASLIN)	N633	KUALA LUMPUR PEKANBARU POSOD 0329.5S 09409.9E PEDPI 1316.6S 07500.0E (PLAISANCE)
N640	TRIVANDRUM BIKOK 0817.0N 07836.0E COLOMBO LEARMONTH MOUNT HOPE ADELAIDE	N645	BRUNEI ELANG 005535.64S 1145003.10E SURABAYA
N750	SYDNEY CHRISTCHURCH	N759	MELBOURNE AUCKLAND
N774	AUCKLAND SYDNEY	N875	DENPASAR PONTIANAK ARUPA 0031.7N 10848.8E NIMIX 0124.9N 10759.4E BOBOB 0222.1N 10706.0E ENREP 0452.4N 10414.7E
N877	LAGOG 0835.6N 09159.8E VISHAKHAPATNAM NAGPUR PRATAGRAPH	N884	MERSING LUSMO 0333.7N 10655.7E LAGOT 0716.6N 11131.5E LAXOR 0949.6N 11448.5E LULBU 110936.07N 1163217.70E LEGED 130113.24N 1190006.94E LUBANG CABANATUAN MIYAKOJIMA
N884	MERSING LUSMO 0333.7N 10655.7E LAGOT 0716.6N 11131.5E LAXOR 0949.6N 11448.5E LULBU 110936.07N 1163217.70E LEGED 130113.24N 1190006.94E	N891	PAPA UNIFORM ENREP 0452.4N 10414.8E IGARI 0656.2N 10335.2E SAMOG 0800.0N 13014.6E RAYONG BANGKOK

Designator Type	Significant Points	Designator Type	Significant Points
1	2	1	2
	LUBANG CABANATUAN MIYAKOJIMA		
N892	HENGCHUN KABAM 2100.0N 11925.7 MUMOT 1930.4N 11714.5E MAVRA 1814.4N 11615.1E MIGUG 1516.4N 11400.0E MESOX 1358.8N 11302.7E MUGAN 1222.0N 11152.3E MAPNO 1013.1N 11020.1E MOXON 0849.5N 10921.3E MELAS 0704.9N 10808.4E MABLI 0417.3N 10612.9E MERSING	N893	TELEM 2407.0N 06846.0E AHMEDABAD
N895	BETNO 1505.8N 09812.7E PATHEIN BHUBANESWAR NAGPUR BODAR 2236.3N 07413.3E AHMEDABAD PARTY 2414.6N 07052.0E	P173	TAPIS 3431.0N 06909.0E DAVET 3657.6N 06447.2E
P501	ARAMA 0136.9N 10307.2E BOBAG 0102.5N 10329.9E ANITO 0017.0S 10452.0E	P518	NOBAT 2109.0N 06800.0E PARET 2527.2N 06451.5E PANJGUR
P570	(MIBSI 2341.7N 05755.4E) KITAL 2003.0N 06018.0E TRIVANDRUM KATUNAYAKE PEKANBARU	P574	(KUSRA) TOTOX 2150.5N 06222.5E BISET 1823.4N 06918.1E BELGAUM CHENNAI PUGER 0324.0N 10017.5E
P627	PHUKET KADAP 0200.0S 08409.6E KALBI (PLAISANCE)	P628	LANGKAWI PORT BLAIR RAHIM YAR KHAN
P646	BANGKOK JAMSHEDPUR PATHEIN VARANASI	P648	KOTA KINABALU JAKARTA
P751	(ADEN) ANGAL 1614N 06000E MUMBAI	P756	MALE MEDAN
P761	CHENNAI PORT BLAIR	P762	DAWEI PORT BLAIR COLOMBO
P880	IGEVO 03636.29S 16300.00E SLOPE HILL VOR 04459.03S 16846.57E	P895	IGAMA 134105.00N0715958.00E AKLON 112110.00N0745424.00E COCHIN GUTEG 091100.00N 0773154.00E BIKOK 81706.00N0783555.00E
P901	IKELA 1839.7N 11214.7E CHEUNG CHAU	UB467	YEDINKA VELTA 4529N 13710E TEKUK 4241N 13527.4E NULAR 4059.2N 13411E (KANSU) 3838.0N 13228.5E

Designator Type	Significant Points	Designator Type	Significant Points
1	2	1	2
UL425	(KUTVI) ASPUX 1744.00N 06000.00E DONSA 1434.14N 06511.32E VANVO 1043.00N 07200.00E	UM551	DONSA 1435.3N 06511.6E ANGAL 1614.1N 06000.1E (AVAVO) 1646.3N 05526.1E

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TABLE ATM II-APAC-2 SSR CODES ALLOCATION PLAN OF THE ASIA AND PACIFIC REGIONS

FIR	0001-0077	0100-0177	0200-0277	0300-0377	0400-0477	0500-0577	0600-0677	0700-0777	1000-1077	1100-1177	1200-1277	1300-1377	1400-1477	1500-1577	1600-1677	1700-1777
BANGKOK								I	D	D	D	D	D			
BEIJING	I						D									
BRISBANE				14	14				I	I	I					
CHENNAI			D				I									
COLOMBO																
DHAKA																
DELHI			D			I										
FUKUOKA					D				D	D	D	D	D	D		D
GUANGZHOU							D									
HANOI																I
HO CHI MINH																
HONG KONG, CHINA																
INCHEON			D	D											D	
JAKARTA																D
KABUL																
KARACHI																
KATHMANDU		D														
KOLKATA			D		I											
KOTA KINABALU					I	D										
KUALA LUMPUR				D												
KUNMING																
LAHORE		D														
LANZHOU										D						
MALE			D													
MANILA				D			D									
MELBOURNE												I	I	I		
MUMBAI			D	I												
NADI						I										
NEW ZEALAND			I													
PHNOM PENH															I(1)	
PORT MORESBY				D	D											
PYONGYANG						D										
SHANGHAI		I						D	D							
SHENYANG										D	I					
SINGAPORE	D	I														
TAHITI																
TAIBEI				D			D		D	D				D		
UJUNG PANDANG															D	
ULAAN BATAAR				D	D											
URUMQI									D							
VIENTIANE			D												I(2)	
WUHAN				D										D		
YANGON																
FIR	2001-2077	2100-2177	2200-2277	2300-2377	2400-2477	2500-2577	2600-2677	2700-2777	3000-3077	3100-3177	3200-3277	3300-3377	3400-3477	3500-3577	3600-3677	3700-3777
BANGKOK												D				
BEIJING				D					I				D			
BRISBANE																

CHENNAI								D				D				
COLOMBO																
DHAKA																
DELHI												D				
FUKUOKA	D	D	D	D	D	D				I(13)	I	D	D		I	I
GUANGZHOU					D					I			D			
HANOI																
HO CHI MINH																
HONG KONG, CHINA												I(15)		I		
INCHEON																
JAKARTA				I	I	D						D				
KABUL																
KARACHI											D		D			
KATHMANDU						I										
KOLKATA							D					D				
KOTA KINABALU	I									D						
KUALA LUMPUR		I					I		D				D			
KUNMING			D	D												
LAHORE	D														D	
LANZHOU		D														
MALE																
MANILA								I								
MELBOURNE																
MUMBAI												D				
NADI													D			
NEW ZEALAND																
PHNOM PENH																
PORT MORESBY																
PYONGYANG																
SHANGHAI								D								
SHENYANG						D										
SINGAPORE			I													
TAHITI							I									
TAIBEI	D	D					I									
UJUNG PANDANG																
ULAAN BATAAR																
URUMQI				D												
VIENTIANE																
WUHAN																
YANGON																
FIR	4000-4077	4100-4177	4200-4277	4300-4377	4400-4477	4500-4577	4600-4677	4700-4777	5000-5077	5100-5177	5200-5277	5300-5377	5400-5477	5500-5577	5600-5677	5700-5777
BANGKOK			D	D	D	D										
BEIJING																
BRISBANE																
CHENNAI																
COLOMBO	D															
DHAKA		D						I								
DELHI																
FUKUOKA							D	D			D(11)	D	D	D	D	D
GUANGZHOU						D										
HANOI		D					D									
HO CHI MINH														I	I	D
HONG KONG, CHINA										I	D	I				I(16)
INCHEON		I	D	I(12)	I(12)	D			D	D	D					

JAKARTA								D								
KABUL												D				
KARACHI				D												
KATHMANDU																
KOLKATA																
KOTA KINABALU											D					
KUALA LUMPUR	D									D			I			
KUNMING																
LAHORE					D	I										
LANZHOU																
MALE																
MANILA	D		D													
MELBOURNE																
MUMBAI																
NADI																
NEW ZEALAND																
PHNOM PENH									D(3)							
PORT MORESBY																
PYONGYANG	I															
SHANGHAI																
SHENYANG																
SINGAPORE			D	D			D									
TAHITI																
TAIBEI				D	D	D	D									
UJUNG PANDANG		I			D	D	D		I						D	
ULAAN BATAAR			I		D											
URUMQI						D										
VIENTIANE																
WUHAN	D															
YANGON									I(4)D		I(5)D					
FIR	6000-6077	6100-6177	6200-6277	6300-6377	6400-6477	6500-6577	6600-6677	6700-6777	7000-7077	7100-7177	7200-7277	7300-7377	7400-7477	7500	7600	7700
BANGKOK		I									D					
BEIJING																
BRISBANE																
CHENNAI																
COLOMBO												I				
DHAKA																
DELHI				D												
FUKUOKA	I	I (13)	D		D				I(13)			D				
GUANGZHOU																
HANOI									I							
HO CHI MINH	D															
HONG KONG, CHINA																
INCHEON							D	D		I	D		D			
JAKARTA			D		D			I		I	D					
KABUL										I						
KARACHI											I		D			
KATHMANDU																
KOLKATA																
KOTA KINABALU																
KUALA LUMPUR																
KUNMING					I(9)							D				
LAHORE																
LANZHOU			I(6)													

MALE													I			
MANILA						I										
MELBOURNE																
MUMBAI				D												
NADI																
NEW ZEALAND																
PHNOM PENH																
PORT MORESBY													I			
PYONGYANG																
SHANGHAI				I												
SHENYANG					I(10)							D				
SINGAPORE																
TAHITI																
TAIBEI			I								D					
UJUNG PANDANG				D			I		I		D					
ULAAN BATAAR																
URUMQI			I(7)													
VIENTIANE																
WUHAN			I(8)													
YANGON																

I = International, D = Domestic
1 = Codes/claves 1600-1637
2 = Codes/claves 1640-1677
3 = Codes/claves 5010-5077
4 = Codes/claves 5000 international/5001-5007 domestic
5 = Codes/claves 5200 international/5201-5207 domestic
6 = Codes/claves 6200-6217
7 = Codes/claves 6220-6237
8 = Codes/claves 6240-6277
9 = Codes/claves 6400-6447
10 = Codes/claves 6450-6477
11 = Not available for use in the western part of the Fukuoka FIR
12 = Not for southbound flights
13 = For eastbound/northeast bound flights
14 = Not available for use in Northeastern Australia
15 = For flights bound for China and for destinations within the Manila and Taipei FIRs
16 = Not for flights bound for destinations within and overflying the Fukuoka FIR
* All codes available for domestic use in Australia and New Zealand except where indicated
Note: codes have not been issued for the Auckland Oceanic FIR (NZ), Anchorage and Oakland Oceanic FIRs (USA), Honiara FIR, Nauru FIR and the Sanya FIR

ASIA/PAC ANP, VOLUME II

PART V – METEOROLOGY (MET)

1. INTRODUCTION

1.1 This part of the APAC ANP, Volume II, complements the provisions in the ICAO SARPs and PANS related to aeronautical Meteorology (MET). It contains dynamic plan elements related to the assignment of responsibilities to States for the provision of MET facilities and services within a specified area in accordance with Article 28 of the *Convention on International Civil Aviation* (Doc 7300); and mandatory requirements related to the MET facilities and services to be implemented by States in accordance with regional air navigation agreements. Such agreement indicates a commitment on the part of the States concerned to implement the requirements specified.

2. GENERAL REGIONAL REQUIREMENTS

Meteorological offices

2.1 In the Asia and Pacific Regions, Meteorological Watch Offices (MWO) have been designated to maintain continuous watch on meteorological conditions affecting flight operations within their area(s) of responsibility, as indicated at **Table MET II-1**.

Meteorological observations and reports

2.2 In the Asia and Pacific Regions, routine observations, issued as a METAR, should be made throughout the 24 hours of each day at intervals of one hour or, for RS and AS designated aerodromes[1] if so determined by regional air navigation agreement, at intervals of one half-hour at aerodromes as indicated in **Table MET II-2**. For aerodromes included on the VHF VOLMET broadcast as indicated in **Table MET II-3**, routine observations, issued as METAR, should be made throughout the 24 hours of each day.

2.3 At aerodromes that are not operational throughout 24 hours, METAR should be issued at least 3 hours prior to the aerodrome resuming operations in the Asia and Pacific Regions.

Forecasts

2.4 In the Asia and Pacific Regions, an aerodrome forecast, issued as a TAF, should be for the aerodromes indicated in **Table MET II-2**.

2.5 In the Asia and Pacific Regions, the period of validity of a routine TAF should be of 12-, 18-, 24- or 30-hours to meet the requirements indicated in **Table MET II-2**.

2.6 In the Asia and Pacific Regions, the forecast maximum and minimum temperatures expected to occur during the period of validity, together with their corresponding day and time of occurrence, should be included in TAF at aerodromes indicated in **Table MET II-2**.

2.7 In the Asia and Pacific Regions, landing forecasts (prepared in the form of a trend forecast) should be provided at aerodromes indicated in **Table MET II-2**.

Requirements for and use of communications

2.8 Operational meteorological information prepared as METAR, SPECI and TAF for aerodromes indicated in **Table MET II-2**, and SIGMET and AIRMET messages prepared for flight information regions or control areas indicated in **Table MET II-1**, should be disseminated to the international OPMET databanks designated for the Asia and Pacific Regions (namely Bangkok, Brisbane, Nadi, Singapore and Tokyo) and to

[1] Refer to Table AOP II-1, Explanation of the table

the centres designated for the operation of the aeronautical fixed service satellite distribution system (SADIS 2G) and the Internet-based service (Secure SADIS FTP) and WIFS in the Asia and Pacific Regions.

2.9 SIGMET messages should be disseminated to other meteorological offices in the Asia and Pacific Regions in accordance with the regional OPMET bulletin exchange scheme.

2.10 Special air-reports that do not warrant the issuance of a SIGMET should be disseminated to other meteorological offices in the Asia and Pacific Regions in accordance with the regional OPMET bulletin exchange scheme.

2.11 In the Asia and Pacific Regions, meteorological information for use by aircraft in flight should be supplied through VOLMET broadcasts.

2.12 In the Asia and Pacific Regions, the aerodromes for which METAR and SPECI are to be included in VOLMET broadcasts, the sequence in which they are to be transmitted and the broadcast time, is indicated in **Table MET II-3**.

3. SPECIFIC REGIONAL REQUIREMENTS

Service for operators and flight crew members.

3.1 In the Asia and Pacific Regions, scheduled VOLMET broadcasts should contain TAF and SIGMET.

3.2 In the Asia and Pacific Regions, METAR, SPECI and TAF should be available for uplink to aircraft in flight via D-VOLMET.

TABLE MET II-1 - METEOROLOGICAL WATCH OFFICES

EXPLANATION OF THE TABLE

Column

1 Name of the State where meteorological service is required

2 Name of the Flight Information Region (FIR) or Control Area (CTA) where meteorological service is required
Note: The name is extracted from the ICAO Location Indicators (Doc 7910) updated quarterly. If a State wishes to change the name appearing in Doc 7910 and this table, ICAO should be notified officially.

3 ICAO location indicator of the FIR or CTA

4 Name of the meteorological watch office (MWO) responsible for the provision of meteorological service for the FIR or CTA
Note: The name is extracted from the ICAO Location Indicators (Doc 7910) updated quarterly. If a State wishes to change the name appearing in Doc 7910 and this table, ICAO should be notified officially.

5 ICAO location indicator of the responsible MWO

6 Requirement for SIGMET information (excluding for volcanic ash and for tropical cyclones) to be provided by the MWO for the FIR or CTA concerned, where:
Y – Yes, required
N – No, not required

7 Requirement for SIGMET information for volcanic ash to be provided by the MWO for the FIR or CTA concerned, where:
Y – Yes, required
N – No, not required

8 Requirement for SIGMET information for tropical cyclone to be provided by the MWO for the FIR or CTA concerned, where:
Y – Yes, required
N – No, not required

9 Requirement for AIRMET information to be provided by the MWO for the FIR or CTA concerned, where
Y – Yes, required
N – No, not required

State	FIR or CTA Where Meteorological Service is Required		Responsible Meteorological Watch Office		Meteorological Service To Be Provided			
	Name	ICAO Location Indicator	Name	ICAO Location Indicator	SIGMET (WS)	SIGMET (WV)	SIGMET (WC)	AIRMET (WA)
1	2	3	4	5	6	7	8	9
Afghanistan	KABUL FIR / SSR	OAKX	KABUL AD	OAKB	Y	Y	N	N
Australia	MELBOURNE FIR	YMMM	ADELAIDE (REGIONAL FORECASTING CENTRE)	YPRM	Y	N	N	Y
	BRISBANE FIR	YBBB	BRISBANE (REGIONAL FORECASTING CENTRE)	YBRF	Y	N	Y	Y

	BRISBANE FIR MELBOURNE FIR	YBBB YMMM	DARWIN (REGIONAL FORECASTING CENTRE)	YPDM	Y	Y	Y	Y
	MELBOURNE FIR	YMMM	HOBART (REGIONAL FORECASTING CENTRE)	YMHF	Y	N	N	Y
	BRISBANE FIR MELBOURNE FIR	YBBB YMMM	MELBOURNE (WORLD MET CENTRE, BUREAU OF METEOROLOGY)	YMMC	Y	N	N	N
	BRISBANE FIR MELBOURNE FIR	YBBB YMMM	MELBOURNE (REGIONAL FORECASTING CENTRE)	YMRF	Y	N	N	Y
	BRISBANE FIR MELBOURNE FIR	YBBB YMMM	PERTH (REGIONAL FORECASTING CENTRE)	YPRF	Y	N	Y	Y
	BRISBANE FIR MELBOURNE FIR	YBBB YMMM	SYDNEY (REGIONAL FORECASTING CENTRE)	YSRF	Y	N	N	Y
Bangladesh	DHAKA FIR / SRR	VGFR	HAZRAT SHAHJALAL INTERRNATIONAL AIRPORT	VGHS	Y	Y	Y	N
Cambodia	PHNOM PENH FIR / SRR	VDPP	PHNOM PENH	VDPP	Y	Y	Y	N
China	BEIJING FIR / SRR	ZBPE	BEIJING/CAPITAL	ZBAA	Y	Y	Y	N
	GUANGZHOU FIR / SRR	ZGZU	GUANGZHOU/BAIYUN	ZGGG	Y	Y	Y	N
	KUNMING FIR / SRR	ZPKM	CHENGDU/SHUANGLIU	ZUUU	Y	Y	Y	N
	LANZHOU FIR / SRR	ZLHW	XI'AN/XIANYANG	ZLXY	Y	Y	N	N
	SANYA FIR / SRR	ZJSA	HAIKOU/MEILAN	ZJHK	Y	Y	Y	N
	SHANGHAI FIR / SRR	ZSHA	SHANGHAI/HONGQIAO	ZSSS	Y	Y	Y	N
	SHENYANG FIR / SRR	ZYSH	SHENYANG/TAOXIAN	ZYTX	Y	Y	N	N
	TAIBEI FIR / SRR	RCAA	TAIBEI CITY/TAIBEI INTL AP	RCTP	Y	Y	Y	N
	URUMQI FIR / SRR	ZWUQ	URUMQI/DIWOPU	ZWWW	Y	Y	N	N
	WUHAN FIR / SRR	ZHWH	WUHAN/TIANHE	ZHHH	Y	Y	N	N
	HONG KONG FIR / SRR	VHHK	HONG KONG/INTL	VHHH	Y	Y	Y	N
Democratic People's Republic of Korea	PYONGYANG FIR / SRR	ZKKP	SUNAN	ZKPY	Y	Y	Y	N
Fiji	NADI FIR / SRR	NFFF	NADI/INTL	NFFN	Y	Y	N	N
French Polynesia	TAHITI FIR / SRR	NTTT	TAHITI/FAAA	NTAA	Y	Y	Y	N
India	CHENNAI FIR / SRR	VOMF	CHENNAI	VOMM	Y	Y	Y	N
	DELHI FIR / SRR	VIDF	DELHI/INDIRA GHANDI INTL	VIDP	Y	Y	N	N
	KOLKATA FIR / SRR	VECF	KOLKATA/KOLKATA	VECC	Y	Y	N	N
	MUMBAI FIR / SRR	VABF	MUMBAI/CHHATRAPATI SHIVAJI INTL.	VABB	Y	Y	Y	N
Indonesia	JAKARTA FIR/UIR / SRR	WIIZ	JAKARTA/SOEKARNO-HATTA (COMM CENTER)	WIII	Y	Y	Y	N
	UJUNG PANDANG FIR/UIR / SRR	WAAZ	UJUNG PANDANG/HASANUDDIN (COMM CENTER)	WAAA	Y	Y	Y	N
Japan	FUKUOKA FIR / TOKYO SRR	RJJJ	TOKYO (CITY)	RJTD	Y	Y	Y	N
Lao People's Democratic Republic	VIENTIANE FIR / SRR	VLVT	VIENTIANE/WATTAY	VLVT	Y	Y	Y	N
Malaysia	KOTA KINABALU FIR / SRR KUALA LUMPUR FIR / SRR	WBFC WMFC	SEPANG/KL INTL AIRPORT	WMKK	Y	Y	Y	N
Maldives	MALE FIR / SRR	VRMF	MALE/INTL	VRMM	Y	Y	Y	N

Mongolia	ULAANBAATAR FIR / SRR	ZMUB	ULAANBAATAR	ZMUB	Y	Y	N	N
Myanmar	YANGON FIR / SRR	VYYY	YANGON INTL	VYYY	Y	Y	Y	N
Nauru	NAURU FIR / SRR	ANAU	NAURU I.	ANYN	Y	Y	Y	N
Nepal	KATHMANDU FIR / SRR	VNSM	KATHMANDU	VNKT	Y	Y	N	N
New Zealand	AUCKLAND OCEANIC FIR / SRR NEW ZEALAND FIR / SRR	NZZO NZZC	WELLINGTON (AVIATION WEATHER CENTRE)	NZKL	Y	Y	Y	N
Pakistan	KARACHI FIR / SRR	OPKR	KARACHI/JINNAH INT'L	OPKC	Y	Y	Y	N
	LAHORE FIR / SRR	OPLR	LAHORE/ALLAMA IQBAL INT'L	OPLA	Y	Y	Y	N
Papua New Guinea	PORT MORESBY FIR / SRR	AYPY	PORT MORESBY INTL	AYPY	Y	Y	Y	N
Philippines	MANILA FIR / SRR	RPHI	MANILA/NINOY AQUINO INTL, PASAY CITY, METRO MANILA	RPLL	Y	Y	Y	N
Republic of Korea	INCHEON FIR / SRR	RKRR	INCHEON	RKSI	Y	Y	Y	N
Singapore	SINGAPORE FIR / SRR	WSJC	SINGAPORE/CHANGI	WSSS	Y	Y	Y	N
Solomon Islands	HONIARA FIR / SRR	AGGG	HONIARA (HENDERSON)	AGGH	Y	Y	Y	N
Sri Lanka	COLOMBO FIR / SRR	VCBI	BANDARANAIKE INTL AIRPORT COLOMBO	VCBI	Y	Y	Y	N
Thailand	BANGKOK FIR / SRR	VTBB	BANGKOK/SUVARNABHUMI INTL AIRPORT	VTBS	Y	Y	Y	N
United States	ANCHORAGE FIR	PAZA	ANCHORAGE	PAWU	Y	Y	N	N
	OAKLAND OCEANIC / HONOLULU SRR	KZAK	HONOLULU	PHFO	Y	Y	Y	N
	OAKLAND OCEANIC FIR	KZAK	KANSAS CITY	KKCI	Y	Y	Y	N
Viet Nam	HANOI FIR / SRR HO-CHI-MINH FIR / SRR	VVNB VVTS	GIA LAM	VVGL	Y	Y	Y	N

TABLE MET II-2 - AERODROME METEOROLOGICAL OFFICES

EXPLANATION OF THE TABLE

Column

1 Name of the State where meteorological service is required

2 Name of the aerodrome (listed in Tables AOP) where meteorological service is required

Note: The name is extracted from the ICAO Location Indicators (Doc 7910) updated quarterly. If a State wishes to change the name appearing in Doc 7910 and this table, ICAO should be notified officially.

3 ICAO location indicator of the aerodrome (listed in Tables AOP)

4 Designation of the aerodrome (listed in Tables AOP):
RG – international general aviation, regular use
RS – international scheduled air transport, regular use
RNS – international non-scheduled air transport, regular use
AS – international scheduled air transport, alternate use
ANS – international non-scheduled air transport, alternate use

5 Name of the aerodrome meteorological office responsible for the provision of meteorological service

Note: The name is extracted from the ICAO Location Indicators (Doc 7910) updated quarterly. If a State wishes to change the name appearing in Doc 7910 and this table, ICAO should be notified officially.

6 ICAO location indicator of the responsible aerodrome meteorological office

7 Requirement for METAR/SPECI from the aerodrome concerned, where:
Y – Yes, required
N – No, not required

8 Requirement for information on the state of the runway provided by the appropriate airport authority to be included as supplementary information in METAR/SPECI from the aerodrome concerned, where:
Y - Yes, required
N- No, not required

9 Requirement for trend forecast to be appended to METAR/SPECI from the aerodrome concerned, where
Y – Yes, required
N – No, not required

10 Requirement for TAF from the aerodrome concerned, where
T – Requirement for 12/18/24-hour validity aerodrome forecasts in TAF code (12/18/24H)
X – Requirement for 30-hour validity aerodrome forecasts in TAF code (30H)
N – No, not required

11 Requirement for maximum and minimum temperature (expected to occur during the period of validity of the TAF) to be included in TAF from the aerodrome concerned, where:
Y – Yes, required
N – No, not required

12 Availability of METAR/SPECI and TAF from the aerodrome concerned, where:
F – Full availability : OPMET information as listed issued for the aerodrome all through the 24-hour period
P – Partial availability: OPMET information as listed not issued for the aerodrome for the entire 24-hour period

State	Aerodrome (listed in Tables AOP) where meteorological service is to be provided			Responsible aerodrome meteorological office		Observations and forecasts to be provided					METAR/SPECI and TAF availability
	Name	ICAO Location Indicator	Use	Name	ICAO Location Indicator	METAR/SPECI	State of the runway	Trend forecast	TAF	Temperature Tx/Tn	
1	2	3	4	5	6	7	8	9	10	11	12
Afghanistan	KABUL INTERNATIONAL	OAKB	RS	KABUL INTERNATIONAL	OAKB	Y		Y	T		F
	KANDAHAR	OAKN	AS	KABUL INTERNATIONAL	OAKB	Y			T		F
American Samoa (United States)	PAGO PAGO INTERNATIONAL,TUTUILA I.	NSTU	RS	WASHINGTON (NWS NATIONAL MET CENTER), DC.	KWBC	Y			T		F
Australia	ADELAIDE/ADELAIDE INTL	YPAD	RS	ADELAIDE/ADELAIDE INTL	YPAD	Y	N	Y	X	N	F
	ALICE SPRINGS	YBAS	AS	DARWIN/DARWIN INTL	YPDN	Y	N	N	T	N	F
	BRISBANE/BRISBANE INTL	YBBN	RS	BRISBANE/BRISBANE INTL	YBBN	Y	N	Y	X	N	F
	CAIRNS/CAIRNS INTL	YBCS	RS	CAIRNS/CAIRNS INTL	YBTL	Y	N	Y	T	N	F
	CHRISTMAS ISLAND	YPXM	RS	PERTH/PERTH INTL	YPPH	Y	N	N	T	N	F
	COCOS (KEELING) ISLANS INTL	YPCC	RS	PERTH/PERTH INTL	YPPH	Y	N	N	T	N	F
	DARWIN/DARWIN INTL	YPDN	RS	DARWIN/DARWIN INTL	YPDN	Y	N	Y	X	N	F
	HOBART	YMHB	RS	HOBART	YMHB	Y	N	N	T	N	F
	MELBOURNE/MELBOURNE INTL	YMML	RS	MELBOURNE/MELBOURNE INTL	YMML	Y	N	Y	X	N	F
	NORFOLK ISLAND	YSNF	RS	SYDNEY/SYDNEY (KINGSFORD SMITH) INTL	YSSY	Y	N	N	T	N	F
	PERTH/PERTH INTL	YPPH	RS	PERTH/PERTH INTL	YPPH	Y	N	Y	X	N	F
	PORT HEDLAND	YPPD	RS	PERTH/PERTH INTL	YPPH	Y	N	N	T	N	F
	ROCKHAMPTON	YBRK	AS	BRISBANE/BRISBANE INTL	YBBN	Y	N	N	T	N	F
	SYDNEY/SYDNEY (KINGSFORD SMITH) INTL	YSSY	RS	SYDNEY/SYDNEY (KINGSFORD SMITH) INTL	YSSY	Y	N	Y	X	N	F
	TINDAL	YPTN	AS	DARWIN/DARWIN INTL	YPDN	Y	N	Y	T	N	F
	TOWNSVILLE/TOWNSVILLE INTL	YBTL	RS	TOWNSVILLE/TOWNSVILLE INTL	YBTL	Y	N	Y	T	N	F
Bangladesh	HAZRAT SHAHJALAL INTERNATIONAL AIRPORT, DHAKA	VGHS	RS	HAZRAT SHAHJALAL INTERNATIONAL AIRPORT, DHAKA	VGHS	Y		Y	T		F
	SHAH AMANAT INTL. CHITTAGONG	VGEG	RS	HAZRAT SHAHJALAL INTERNATIONAL AIRPORT, DHAKA	VGHS	Y		Y	T		F
Bhutan	PARO/INTL	VQPR	RS	PARO/INTL	VQPR	Y					P
Brunei Darussalam	BRUNEI/INTL	WBSB	RS	BRUNEI/INTL	WBSB	Y			X		F
Cambodia	PHNOM PENH	VDPP	RS	PHNOM PENH	VDPP	Y		Y	T		P
	SIEM REAP	VDSR	AS	PHNOM PENH	VDPP	Y			T		P
China	BEIJING/CAPITAL	ZBAA	RS	BEIJING/CAPITAL	ZBAA	Y		Y	X		F
	CHANGSHA/HUANGHUA	ZGHA	RS	GUANGZHOU/BAIYUN	ZGGG	Y			T		F
	CHENGDU/SHUANGLIU	ZUUU	RS	CHENGDU/SHUANGLIU	ZUUU	Y			T		F
	CHONGQING/JIANGBEI	ZUCK	RS	CHENGDU/SHUANGLIU	ZUUU	Y		Y	T		F

State	Aerodrome (listed in Tables AOP) where meteorological service is to be provided			Responsible aerodrome meteorological office		Observations and forecasts to be provided					METAR/SPECI and TAF availability
	Name	ICAO Location Indicator	Use	Name	ICAO Location Indicator	METAR/SPECI	State of the runway	Trend forecast	TAF	Temperature Tx/Tn	
1	2	3	4	5	6	7	8	9	10	11	12
	DALIAN/ZHOUSHUIZI	ZYTL	RS	SHENYANG/TAOXIAN	ZYTX	Y			T		F
	FUZHOU/CHANGLE	ZSFZ	RS	SHANGHAI/HONGQIAO	ZSSS	Y			T		F
	GAOXIONG	RCKH	RS	TAIBEI CITY/TAIBEI INTL AP	RCTP	Y		Y	X		F
	GUANGZHOU/BAIYUN	ZGGG	RS	GUANGZHOU/BAIYUN	ZGGG	Y		Y	X		F
	GUILIN/LIANGJIANG	ZGKL	RS	GUANGZHOU/BAIYUN	ZGGG	Y			T		F
	HANGZHOU/XIAOSHAN	ZSHC	RS	SHANGHAI/HONGQIAO	ZSSS	Y			T		F
	HARBIN/TAIPING	ZYHB	RS	SHENYANG/TAOXIAN	ZYTX	Y			T		F
	HEFEI/XINQIAO	ZSOF	AS	SHANGHAI/HONGQIAO	ZSSS	Y			T		F
	HUHHOT/BAITA	ZBHH	RS	BEIJING/CAPITAL	ZBAA	Y			T		F
	JINAN/YAOQIANG	ZSJN	RS	SHANGHAI/HONGQIAO	ZSSS	Y			T		F
	KASHI/KASHI	ZWSH	RS	URUMQI/DIWOPU	ZWWW	Y			X		F
	KUNMING/CHANGSHUI	ZPPP	RS	CHENGDU/SHUANGLIU	ZUUU	Y			X		F
	LANZHOU/ZHONGCHUAN	ZLLL	AS	XI'AN/XIANYANG	ZLXY	Y			T		F
	NANJING/LUKOU	ZSNJ	RS	SHANGHAI/HONGQIAO	ZSSS	Y			T		F
	NANNING/WUXU	ZGNN	AS	GUANGZHOU/BAIYUN	ZGGG	Y			T		F
	QINGDAO/LIUTING	ZSQD	RS	SHANGHAI/HONGQIAO	ZSSS	Y			T		F
	SANYA/PHOENIX	ZJSY				Y			T		F
	SHANGHAI/HONGQIAO	ZSSS	RS	SHANGHAI/HONGQIAO	ZSSS	Y		Y	T		F
	SHANGHAI/PUDONG	ZSPD	RS	SHANGHAI/HONGQIAO	ZSSS	Y		Y	X		F
	SHENYANG/TAOXIAN	ZYTX	RS	SHENYANG/TAOXIAN	ZYTX	Y		Y	T		F
	SHENZHEN/BAOAN	ZGSZ	RS	GUANGZHOU/BAIYUN	ZGGG	Y			X		F
	TAIBEI CITY/TAIBEI INTL AP	RCTP	RS	TAIBEI CITY/TAIBEI INTL AP	RCTP	Y		Y	X		F
	TAIBEI/SONGSHAN	RCSS	AS	TAIBEI CITY/TAIBEI INTL AP	RCTP	Y			T		F
	TAIYUAN/WUSU	ZBYN	AS	BEIJING/CAPITAL	ZBAA	Y			T		F
	TIANJIN/BINHAI	ZBTJ	RS	BEIJING/CAPITAL	ZBAA	Y			X		F
	URUMQI/DIWOPU	ZWWW	RS	URUMQI/DIWOPU	ZWWW	Y			X		F
	WUHAN/TIANHE	ZHHH	RS	GUANGZHOU/BAIYUN	ZGGG	Y		Y	T		F
	XIAMEN/GAOQI	ZSAM	RS	SHANGHAI/HONGQIAO	ZSSS	Y		Y	T		F
	XI'AN/XIANYANG	ZLXY	RS	XI'AN/XIANYANG	ZLXY	Y		Y	T		F
	XICHANG/QUINGSHAN	ZUXC	RNS	CHENGDU/SHUANGLIU	ZUUU	Y					F
Cook Islands	RAROTONGA INTL.	NCRG	RS	NADI/INTL	NFFN	Y			T		F
Democratic People's Republic of Korea	SUNAN	ZKPY	RS	SUNAN	ZKPY	Y		Y	T		F
Fiji	NADI/INTL	NFFN	RS	NADI/INTL	NFFN	Y		Y	T		F
	NAUSORI/INTL	NFNA	RS	NADI/INTL	NFFN	Y			T		F

State	Aerodrome (listed in Tables AOP) where meteorological service is to be provided			Responsible aerodrome meteorological office		Observations and forecasts to be provided					METAR/SPECI and TAF availability
	Name	ICAO Location Indicator	Use	Name	ICAO Location Indicator	METAR/SPECI	State of the runway	Trend forecast	TAF	Temperature Tx/Tn	
1	2	3	4	5	6	7	8	9	10	11	12
French Polynesia (France)	TAHITI FAAA	NTAA	RS	TAHITI FAAA	NTAA	Y		Y	T		F
Hong Kong, China (China)	HONG KONG/INTERNATIONAL	VHHH	RS	HONG KONG/INTERNATIONAL	VHHH	Y		Y	X		F
India	AHMEDABAD	VAAH	RS	AHMEDABAD	VAAH	Y			X		F
	AMRITSAR	VIAR	RS	DELHI (IGI)	VIDP	Y			X		F
	BANGALORE INTL. AIRPORT	VOBL	RS	BANGALORE INTL. AIRPORT	VOBL	Y		Y	X		F
	CALICUT	VOCL	RS	THIRUVANANTHAPURAM	VOTV	Y			X		F
	CHENNAI	VOMM	RS	CHENNAI	VOMM	Y		Y	X		F
	COCHIN INTL.	VOCI	RS	THIRUVANANTHAPURAM	VOTV	Y		Y	X		F
	COIMBATORE	VOCB	RS	CHENNAI	VOMM	Y			T		F
	DELHI (IGI)	VIDP	RS	DELHI (IGI)	VIDP	Y		Y	X		F
	GAYA	VEGY	RS	PATNA	VEPT	Y			T		F
	GUWAHATI	VEGT	RS	GUWAHATI	VEGT	Y		Y	T		F
	HYDERABAD INTL. AIRPORT	VOHS	RS	HYDERABAD INTL. AIRPORT	VOHS	Y		Y	X		F
	JAIPUR	VIJP	RS	JAIPUR	VIJP	Y		Y	T		F
	KOLKATA	VECC	RS	KOLKATA	VECC	Y		Y	X		F
	LUCKNOW	VILK	RS	LUCKNOW	VILK	Y		Y	T		F
	MANGALORE	VOML	RS	BANGALORE INTL. AIRPORT	VOBL	Y			T		F
	MUMBAI	VABB	RS	MUMBAI	VABB	Y		Y	X		F
	NAGPUR	VANP	RS	NAGPUR	VANP	Y		Y	T		F
	PATNA	VEPT	RS	PATNA	VEPT	Y			X		F
	THIRUVANANTHAPURAM	VOTV	RS	THIRUVANANTHAPURAM	VOTV	Y			X		F
	TIRUCHIRAPPALLI	VOTR	RS	CHENNAI	VOMM	Y			T		F
	VARANASI	VIBN	RS	LUCKNOW	VILK	Y			X		F
Indonesia	AMBON/PATTIMURA	WAPP	RNS	AMBON/PATTIMURA	WAPP	Y			T		F
	BALI INTL/NGURAH RAI	WADD	RS	BALI INTL/NGURAH RAI	WADD	Y			X		F
	BALIKPAPAN/SEPINGGAN	WALL	RS	BALIKPAPAN/SEPINGGAN	WALL	Y			X		F
	BANJARMASIN/SYAMSUDIN NOOR	WAOO	AS	BANJARMASIN/SYAMSUDIN NOOR	WAOO	Y			T		F
	BATAM/HANG NADIM	WIDD	AS	BATAM/HANG NADIM	WIDD	Y			T		F
	BIAK/FRANS KAISIEPO	WABB	RS	BIAK/FRANS KAISIEPO	WABB	Y		Y	X		F
	JAKARTA INTL/SOEKARNO-HATTA	WIII	RS	JAKARTA INTL/SOEKARNO-HATTA	WIII	Y		Y	X		F
	JAKARTA/HALIM PERDANAKUSUMA	WIHH	RNS	JAKARTA/HALIM PERDANAKUSUMA	WIHH	Y		Y	T		P
	JAYAPURA/SENTANI	WAJJ	RS	JAYAPURA/SENTANI	WAJJ	Y			T		F

State	Aerodrome (listed in Tables AOP) where meteorological service is to be provided			Responsible aerodrome meteorological office		Observations and forecasts to be provided					METAR/SPECI and TAF availability
	Name	ICAO Location Indicator	Use	Name	ICAO Location Indicator	METAR/SPECI	State of the runway	Trend forecast	TAF	Temperature Tx/Tn	
1	2	3	4	5	6	7	8	9	10	11	12
	KUPANG/EL-TARI	WATT	RS	KUPANG/EL-TARI	WATT	Y			T		F
	MAKASSAR/SULTAN HASANUDDIN	WAAA	RNS	MAKASSAR/SULTAN HASANUDDIN	WAAA	Y		Y	X		F
	MANADO/SAMRATULANGI	WAMM	RS	MANADO/SAMRATULANGI	WAMM	Y			X		F
	MEDAN/KUALANAMU	WIMM	RS	MEDAN/KUALANAMU	WIMM	Y		Y	T		F
	MERAUKE/MOPAH	WAKK	RNS	JAYAPURA/SENTANI	WAJJ	Y			T		P
	PALEMBANG/SULTAN MAHMUD BADARUDDIN II	WIPP	RNS	PALEMBANG/SULTAN MAHMUD BADARUDDIN II	WIPP	Y			T		F
	PANDANG/MINANGKABAU	WIPT		PANDANG/MINANGKABAU	WIPT	Y		Y	T		F
	PEKANBARU/SULTAN SYARIF KASIM II	WIBB	RS	PEKANBARU/SULTAN SYARIF KASIM II	WIBB	Y			T		F
	PONTIANAK/SUPADIO	WIOO	RS	PONTIANAK/SUPADIO	WIOO	Y			T		F
	SURABAYA/JUANDA	WARR	RS	SURABAYA/JUANDA	WARR	Y			T		F
	TANJUNG PINANG/RAJA HAJI FISABILILLAH	WIDN	RS	BATAM/HANG NADIM	WIDD	Y			T		P
	TARAKAN/JUWATA	WALR	RS	BALIKPAPAN/SEPINGGAN	WALL	Y			T		P
Japan	CHUBU CENTRAIR INTL	RJGG	RS	TOKYO (CITY)	RJTD	Y		Y	X		F
	FUKUOKA	RJFF	RS	TOKYO (CITY)	RJTD	Y			X		F
	HAKODATE	RJCH	AS	TOKYO (CITY)	RJTD	Y			X		F
	HIROSHIMA	RJOA	RS	TOKYO (CITY)	RJTD	Y			X		F
	KAGOSHIMA	RJFK	RS	TOKYO (CITY)	RJTD	Y			X		F
	KANSAI INTL	RJBB	RS	TOKYO (CITY)	RJTD	Y		Y	X		F
	KUMAMOTO	RJFT	RS	TOKYO (CITY)	RJTD	Y			X		F
	NAGASAKI	RJFU	RS	TOKYO (CITY)	RJTD	Y			X		F
	NAHA	ROAH	RS	TOKYO (CITY)	RJTD	Y			X		F
	NARITA INTL	RJAA	RS	TOKYO (CITY)	RJTD	Y		Y	X		F
	NIIGATA	RJSN	RS	TOKYO (CITY)	RJTD	Y			X		F
	OITA	RJFO	RS	TOKYO (CITY)	RJTD	Y			X		F
	OKAYAMA	RJOB	RS	TOKYO (CITY)	RJTD	Y			X		F
	OSAKA INTL	RJOO	AS	TOKYO (CITY)	RJTD	Y			X		F
	SAPPORO/NEW CHITOSE	RJCC	RS	TOKYO (CITY)	RJTD	Y			X		F
	SENDAI	RJSS	RNS	TOKYO (CITY)	RJTD	Y			X		F
	TAKAMATSU	RJOT	RS	TOKYO (CITY)	RJTD	Y			X		F
	TOKYO INTL	RJTT	AS	TOKYO (CITY)	RJTD	Y		Y	X		F
Kiribati	CHRISTMAS ISLAND	PLCH	RS	NADI/INTL	NFFN	Y			T		F
	TARAWA/BONRIKI INTL	NGTA	RS	NADI/INTL	NFFN	Y			T		F
Lao People's Democratic Republic	VIENTIANE(WATTAY)	VLVT	RS	VIENTIANE(WATTAY)	VLVT	Y		Y	T		P

State	Aerodrome (listed in Tables AOP) where meteorological service is to be provided			Responsible aerodrome meteorological office		Observations and forecasts to be provided					METAR/SPECI and TAF availability
	Name	ICAO Location Indicator	Use	Name	ICAO Location Indicator	METAR/SPECI	State of the runway	Trend forecast	TAF	Temperature Tx/Tn	
1	2	3	4	5	6	7	8	9	10	11	12
Macao, China (China)	MACAO/INTL AIRPORT	VMMC	RS	MACAO/INTL AIRPORT	VMMC	Y		Y	X		F
Malaysia	JOHOR BAHRU/SULTAN ISMAIL	WMKJ	RS	SEPANG/KL INTERNATIONAL AIRPORT	WMKK	Y			T		F
	KOTA KINABALU/INTL	WBKK	RS	KOTA KINABALU/INTL	WBKK	Y		Y	T		F
	KUCHING/INTL	WBGG	RS	KOTA KINABALU/INTL	WBKK	Y			T		F
	PENANG/INTL	WMKP	RS	SEPANG/KL INTERNATIONAL AIRPORT	WMKK	Y			T		F
	PULAU LANGKAWI/INTL	WMKL	RS	SEPANG/KL INTERNATIONAL AIRPORT	WMKK	Y			T		F
	SEPANG/KL INTERNATIONAL AIRPORT	WMKK	RS	SEPANG/KL INTERNATIONAL AIRPORT	WMKK	Y		Y	X		F
Maldives	GAN/GAN INTERNATIONAL AIRPORT	VRMG	AS	IBRAHIM NASIR INTERNATIONAL AIRPORT	VRMM	Y			X		F
	HANIMAADHOO	VRMH	RS	IBRAHIM NASIR INTERNATIONAL AIRPORT	VRMM	Y			X		F
	IBRAHIM NASIR INTERNATIONAL AIRPORT	VRMM	RS	IBRAHIM NASIR INTERNATIONAL AIRPORT	VRMM	Y			X		F
	VILLA AIRPORT MAAMIGILI	VRMV	RS	IBRAHIM NASIR INTERNATIONAL AIRPORT	VRMM	Y					
Marshall Islands	MARSHALL ISLANDS/INTL MAJURO ATOLL	PKMJ	RS	WASHINGTON (NWS NATIONAL MET CENTER), DC.	KWBC	Y			T		P
Micronesia (Federated States of)	POHNPEI INTL,POHNPEI ISLAND	PTPN	RS	WASHINGTON (NWS NATIONAL MET CENTER), DC.	KWBC	Y			T		P
	WENO ISLAND ,FM CHUUK INTL.	PTKK	RS	WASHINGTON (NWS NATIONAL MET CENTER), DC.	KWBC	Y			T		F
	YAP INTL,YAP ISLAND	PTYA	RS	WASHINGTON (NWS NATIONAL MET CENTER), DC.	KWBC	Y			T		F
Mongolia	ULAANBAATAR/CHINGGIS KHAAN	ZMUB	RS	ULAANBAATAR/CHINGGIS KHAAN	ZMUB	Y		Y	X		F
Myanmar	YANGON INTERNATIONAL	VYYY	RS	YANGON INTERNATIONAL	VYYY	Y		Y	T		F
Nauru	NAURU AIRPORT	ANYN	RS	NAURU AIRPORT	ANYN	Y		Y	T		F
Nepal	KATHMANDU	VNKT	RS	KATHMANDU	VNKT	Y		Y	T		F
New Caledonia (France)	NOUMEA LA TONTOUTA	NWWW	RS	NOUMEA LA TONTOUTA	NWWW	Y		Y	T		F
New Zealand	AUCKLAND INTL	NZAA	RS	KELBURN (MET OFFICE)	NZKL	Y		Y	T		F
	CHRISTCHURCH INTL	NZCH	RS	KELBURN (MET OFFICE)	NZKL	Y		Y	T		F
	WELLINGTON INTL	NZWN	RS	KELBURN (MET OFFICE)	NZKL	Y		Y	T		F

State	Aerodrome (listed in Tables AOP) where meteorological service is to be provided			Responsible aerodrome meteorological office		Observations and forecasts to be provided					METAR/SPECI and TAF availability
	Name	ICAO Location Indicator	Use	Name	ICAO Location Indicator	METAR/SPECI	State of the runway	Trend forecast	TAF	Temperature Tx/Tn	
1	2	3	4	5	6	7	8	9	10	11	12
Niue (New Zealand)	NIUE INTL	NIUE	RS	NADI/INTL	NFFN	Y			T		F
Northern Mariana Islands (United States)	ANDERSON AFB,GUAM ISLAND	PGUA	AS	WASHINGTON (NWS NATIONAL MET CENTER), DC.	KWBC	Y			T		F
	FRANCISCO C. ADA/SAIPAN INTERNATIONAL, OBYAN	PGSN	RS	WASHINGTON (NWS NATIONAL MET CENTER), DC.	KWBC	Y			T		F
	GUAM INTERNATIONAL, GUAM ISLAND	PGUM	RS	WASHINGTON (NWS NATIONAL MET CENTER), DC.	KWBC	Y			X		F
	ROTA/INTL,ROTA I.	PGRO	RS	WASHINGTON (NWS NATIONAL MET CENTER), DC.	KWBC	Y			T		P
Pakistan	GWADAR/INTL.	OPGD	RS	KARACHI/JINNAH INT'L	OPKC	Y			T		F
	ISLAMABAD/BENAZIR BHUTTO INT'L	OPRN	RS	ISLAMABAD/BENAZIR BHUTTO INT'L	OPRN	Y		Y	X		F
	KARACHI/JINNAH INT'L	OPKC	RS	KARACHI/JINNAH INT'L	OPKC	Y			X		F
	LAHORE/ALLAMA IQBAL INT'L	OPLA	RS	LAHORE/ALLAMA IQBAL INT'L	OPLA	Y		Y	X		F
	NAWABSHAH	OPNH	AS	KARACHI/JINNAH INT'L	OPKC	Y			T		F
	PESHAWAR/INTL.	OPPS	RS	PESHAWAR/BKIAP INTL	OPPS	Y			X		F
Palau	BABELTHUAP/KOROR, BABELTHUAP ISLAND	PTRO	RS	WASHINGTON (NWS NATIONAL MET CENTER), DC.	KWBC	Y			T		F
Papua New Guinea	PORT MORESBY INTL	AYPY	RS	PORT MORESBY INTL	AYPY	Y			T		F
	VANIMO	AYVN				Y					F
Philippines	DAVAO/FRANCISCO BANGOY INTL	RPMD	RNS	MANILA/NINOY AQUINO INTL	RPLL	Y		N	T		P
	DIOSDADO MACAPAGAL, PAMPANGA	RPLC	RS	MANILA/NINOY AQUINO INTL	RPLL	Y		Y	X		F
	LAOAG, LAOAG INTL	RPLI	AS	MANILA/NINOY AQUINO INTL	RPLL	Y		N	T		P
	LAPU-LAPU/MACTAN INTL	RPVM	RS	MANILA/NINOY AQUINO INTL	RPLL	Y		Y	X		F
	MANILA/NINOY AQUINO INTL	RPLL	RS	MANILA/NINOY AQUINO INTL	RPLL	Y		Y	X		F
	SUBIC BAY,SUBIC BAY INTL	RPLB	ANS	MANILA/NINOY AQUINO INTL	RPLL	Y		Y	T		P
	TAMBLER,GEN. SANTOS,SOUTH COTABATO	RPMR	RNS	MANILA/NINOY AQUINO INTL	RPLL	Y		N	T		P
	ZAMBOANGA INTL	RPMZ	RNS	MANILA/NINOY AQUINO INTL	RPLL	Y		N	T		P
Republic of Korea	CHEONGJU	RKTU	RS	INCHEON INTL	RKSI	Y			T		F
	DAEGU INTL	RKTN	RS	INCHEON INTL	RKSI	Y			T		F
	GIMHAE INTL	RKPK	RS	INCHEON INTL	RKSI	Y			T		F
	GIMPO	RKSS	RS	INCHEON INTL	RKSI	Y		Y	X		F

State	Aerodrome (listed in Tables AOP) where meteorological service is to be provided			Responsible aerodrome meteorological office		Observations and forecasts to be provided					METAR/SPECI and TAF availability
	Name	ICAO Location Indicator	Use	Name	ICAO Location Indicator	METAR/SPECI	State of the runway	Trend forecast	TAF	Temperature Tx/Tn	
1	2	3	4	5	6	7	8	9	10	11	12
	INCHEON INTL	RKSI	RS	INCHEON INTL	RKSI	Y		Y	X		F
	JEJU INTL	RKPC	RS	INCHEON INTL	RKSI	Y			X		F
	MUAN	RKJB	RS	INCHEON INTL	RKSI	Y			X		F
	YANGYANG	RKNY	RS	INCHEON INTL	RKSI	Y			T		F
Samoa	FALEOLO/INTL	NSFA	RS	FALEOLO/INTL	NSFA	Y		Y	T		F
Singapore	PAYA LEBAR (RSAF)	WSAP	AS	SINGAPORE/CHANGI	WSSS	Y			X		F
	SELETAR	WSSL	RS	SINGAPORE/CHANGI	WSSS	Y			X		F
	SINGAPORE/CHANGI	WSSS	RS	SINGAPORE/CHANGI	WSSS	Y		Y	X		F
Solomon Islands	HONIARA (HENDERSON)	AGGH	RS	HONIARA (HENDERSON)	AGGH	Y		Y	T		F
Sri Lanka	HINGURAKGODA/MINNERIYA	VCCH				Y					F
	KATUNAYAKE/BANDARANAIKE INTERNATIONAL AIRPORT COLOMBO	VCBI	RS	KATUNAYAKE/BANDARANAIKE INTERNATIONAL AIRPORT COLOMBO	VCBI	Y		Y	X		F
	MATTALA/MATTALA RAJAPAKSA INTERNATIONAL AIRPORT	VCRI	RS	MATTALA/MATTALA RAJAPAKSA INTERNATIONAL AIRPORT	VCRI	Y		Y	X		F
Thailand	BANGKOK/DON MUEANG INTL AIRPORT	VTBD	RS	BANGKOK/SUVARNABHUMI INTL AIRPORT	VTBS	Y		Y	X		F
	BANGKOK/SUVARNABHUMI INTL AIRPORT	VTBS	RS	BANGKOK/SUVARNABHUMI INTL AIRPORT	VTBS	Y		Y	X		F
	CHIANG MAI/CHIANG MAI INTL. AIRPORT	VTCC	RS	CHIANG MAI/CHIANG MAI INTL. AIRPORT	VTCC	Y		Y	X		F
	CHIANG RAI/MAE FAH LUANG-CHIANG RAI INTL AIRPORT	VTCT	RS	CHIANG MAI/CHIANG MAI INTL. AIRPORT	VTCC	Y		Y	X		F
	KHON KAEN	VTUK	RS	UBON RATCHATHANI	VTUU	Y			T		P
	KRABI	VTSG	RS	PHUKET/PHUKET INTL AIRPORT	VTSP	Y			T		F
	PHITSANULOK	VTPP	RS	CHIANG MAI/CHIANG MAI INTL. AIRPORT	VTCC	Y			T		P
	PHUKET/PHUKET INTL AIRPORT	VTSP	RS	PHUKET/PHUKET INTL AIRPORT	VTSP	Y		Y	X		F
	RAYONG/U-TAPAO PATTAYA INTL AIRPORT	VTBU	RS	RAYONG/U-TAPAO PATTAYA INTL AIRPORT	VTBU	Y			T		F
	SONGKHLA/HAT YAI INTL AIRPORT	VTSS	RS	SONGKHLA/HAT YAI INTL AIRPORT	VTSS	Y		Y	T		F
	SURAT THANI	VTSB	RS	SONGKHLA/HAT YAI INTL AIRPORT	VTSS	Y			T		P
	UBON RATCHATHANI	VTUU	RS	UBON RATCHATHANI	VTUU	Y		Y	T		F
Tonga	FUA'AMOTU INTL.	NFTF	RS	NADI/INTL	NFFN	Y			T		F
	VAVA'U	NFTV	RS	NADI/INTL	NFFN	Y			T		F
Tuvalu	FUNAFUTI/INTL	NGFU	RS			Y			T		F

State	Aerodrome (listed in Tables AOP) where meteorological service is to be provided			Responsible aerodrome meteorological office		Observations and forecasts to be provided					METAR/SPECI and TAF availability
	Name	ICAO Location Indicator	Use	Name	ICAO Location Indicator	METAR/SPECI	State of the runway	Trend forecast	TAF	Temperature Tx/Tn	
1	2	3	4	5	6	7	8	9	10	11	12
United States	ANCHORAGE/ELMENDORF AFB,AK.	PAED	AS	WASHINGTON (NWS NATIONAL MET CENTER), DC.	KWBC	Y			T		F
	COLD BAY,AK.	PACD	AS	WASHINGTON (NWS NATIONAL MET CENTER), DC.	KWBC	Y			T		F
	FAIRBANKS INTERNATIONAL, AK.	PAFA	RS	WASHINGTON (NWS NATIONAL MET CENTER), DC.	KWBC	Y			X		F
	FAIRBANKS/EIELSON AFB,AK.	PAEI	AS	WASHINGTON (NWS NATIONAL MET CENTER), DC.	KWBC	Y			T		F
	HILO INTERNATIONAL, HILO HI.	PHTO	AS	WASHINGTON (NWS NATIONAL MET CENTER), DC.	KWBC	Y			T		F
	HONOLULU INTERNATIONAL, OAHU, HI.	PHNL	RS	WASHINGTON (NWS NATIONAL MET CENTER), DC.	KWBC	Y			X		F
	KAHULUI, HI.	PHOG	AS	WASHINGTON (NWS NATIONAL MET CENTER), DC.	KWBC	Y			T		F
	KING SALMON,AK.	PAKN	AS	WASHINGTON (NWS NATIONAL MET CENTER), DC.	KWBC	Y			T		F
	TED STEVENS ANCHORAGE INTERNATIONAL, AK.	PANC	RS	WASHINGTON (NWS NATIONAL MET CENTER), DC.	KWBC	Y			X		F
Vanuatu	PORT VILA/BAUERFIELD	NVVV	RS	PORT VILA/BAUERFIELD	NVVV	Y			T		F
	SANTO/PEKOA	NVSS	RS	PORT VILA/BAUERFIELD	NVVV	Y			T		F
Viet Nam	CAM RANH	VVCR	RS	CAM RANH	VVCR	Y		Y	T		F
	CAN THO	VVCT	RS	CAN THO	VVCT	Y		Y	T		F
	DA NANG	VVDN	RS	DA NANG	VVDN	Y		Y	T		F
	HA NOI/NOI BAI	VVNB	RS	HA NOI/NOI BAI	VVNB	Y		Y	T		F
	HO CHI MINH/TAN SON NHAT	VVTS	RS	HO CHI MINH/TAN SON NHAT	VVTS	Y		Y	X		F
	HUE/PHU BAI	VVPB	RS	HUE/PHU BAI	VVPB	Y		Y	T		F
	PHU QUOC	VVPQ	RS	PHU QUOC	VVPQ	Y		Y	T		F
Wallis and Futuna Islands (France)	WALLIS HIHIFO	NLWW	RS	NADI/INTL	NFFN	Y			T		F

TABLE MET II-3 – VOLMET BROADCASTS

EXPLANATION OF THE TABLE

The transmitting station appears at the top of each block.

Names in lower case letters indicate aerodromes for which reports (routine or selected special) are required.

Names in upper-case letters indicate aerodromes for which forecasts are required.

Tokyo	Hong Kong	Auckland	
10–15 40–45	15–20 45–50	20–25	50–55
Tokyo (Narita) Tokyo (Haneda) Sapporo Chubu Osaka Fukuoka Incheon	Hong Kong Naha Taibei Gaoxiong Manila Mactan Guangzhou	Auckland Christchurch Wellington Nadi Faleolo Nouméa Rarotonga Tahiti	Auckland Christchurch Wellington Nadi Faleolo Nouméa Pago Pago Tahiti
TOKYO (NARITA) TOKYO (HANEDA)	HONG KONG	NADI NOUMÉA	AUCKLAND CHRISTCHURCH

Honolulu		
10–15 40–45	15–20 45–50	20–25 50–55
Honolulu Hilo Kahului Agana	San Francisco Los Angeles Seattle Portland Sacramento Ontario Las Vegas	Anchorage Fairbanks King Salmon Elmendorf Cold Bay Vancouver
SIGMET	SIGMET	SIGMET
HONOLULU HILO AGANA	SAN FRANCISCO SEATTLE LOS ANGELES	ANCHORAGE FAIRBANKS VANCOUVER COLD BAY

Sydney	Kolkata	Bangkok	Karachi	Singapore	Mumbai
00–05 30–35	05–10 35–40	10–15 40–45	15–20 45–50	20–25 50–55	25–30 55–60
Sydney Brisbane Melbourne Townsville Adelaide Alice Springs Darwin Perth	Kolkata Delhi Dhaka Yangon Kathmandu	Bangkok Yangon Ha Noi Ho-Chi-Minh Phnom-Penh Utapao Vientiane	Karachi Islamabad Lahore Delhi Mumbai	Singapore Sebang Jakarta Kuching Brunei Kota Kinabalu Denpasar Penang	Mumbai Ahmadabad Chennai Colombo Karachi Male
00–05 SYDNEY BRISBANE	KOLKATA DELHI	BANGKOK YANGON	KARACHI LAHORE MUMBAI DELHI	20–25 SINGAPORE SEBANG	MUMBAI COLOMBO MALE
30–35 MELBOURNE PERTH	HO-CHI-MINH		SINGAPORE	50–55 SINGAPORE JAKARTA	

Guangzhou			Beijing		
00–05 30–35	05–10 35–40	10–15 40–45	15–20 45–50	20–25 50–55	25–30 55–60
Xiamen	Guangzhou Nanning GUANGZHOU	Changsha Chengdu Kunming Wuhan CHENGDU	Beijing Harbin Dalian Shenyang Hohhot Taiyuan Tianjin BEIJING	Hangzhou Shanghai SHANGHAI	Lanzhou Xían Urumqi XÍAN

APAC ANP, VOLUME II

PART VI - SEARCH AND RESCUE (SAR)

1. INTRODUCTION

1.1 This part of the APAC ANP, Volume II, complements the provisions in ICAO SARPs and PANS related to Search and Rescue (SAR). It contains dynamic plan elements related to the assignment of responsibilities to States for the provision of SAR facilities and services within a specified area in accordance with Article 28 of the *Convention on International Civil Aviation* (Doc 7300); and mandatory requirements related to the SAR facilities and services to be implemented by States in accordance with regional air navigation agreements. Such agreement indicates a commitment on the part of the State(s) concerned to implement the requirement(s) specified.

2. GENERAL REGIONAL REQUIREMENTS

2.1 The Rescue Coordination Centres (RCCs) and Rescue Sub-centres (RSCs) for the Asia and Pacific Regions are listed in **Table SAR II-1** and depicted in **Chart SAR II-1**.

2.2 In cases where the minimum SAR facilities are temporarily unavailable, alternative suitable means should be made available.

2.3 In cases where a SAR alert is proximate to a Search and Rescue Region (SRR) boundary (e.g. 50 NM or less), or it is unclear if the alert corresponds to a position entirely contained within an SRR, the adjacent RCC or RSC should be notified of the alert immediately.

3. SPECIFIC REGIONAL REQUIREMENTS

3.1 None.

TABLE SAR II-1 - RESCUE COORDINATION CENTRES (RCCS) AND RESCUE SUB-CENTRES (RSCS) IN THE ASIA AND PACIFIC REGIONS

EXPLANATION OF THE TABLE

Column

1. State
2. Name of the Rescue Coordination Centre (RCC) and Rescue Sub-Centre (RSC).
3. SAR points of contact (SPOC). Name of the SPOC.
4. Remarks. Supplementary information such as the type of RCC (e.g. maritime or aviation or joint).

- SPOC – SAR Point of contact for the reception of alert messages detected by the COSPAS-SARSAT system (for complete contact information, go to https://www.cospas-sarsat.int/en/contact-lists-mccs-and-spocs)
- SRU – Search and Rescue Unit
- Extra long-range (ELR) – aircraft with a radius of action of 2 780 km (1 500 NM) or more, plus 2 ½ hours search remaining.
- Very long range (VLR) – aircraft with a radius of action of more than 1 850 km (1 000 NM) plus 2 ½ hours search remaining.
- Long range (LRG) – aircraft with a radius of action of 1 390 km (750) plus 2 ½ hours search remaining.
- Medium range (MRG) – aircraft with a radius of action of 740 km (400 NM) plus 2 ½ hours search remaining.
- Short range (SRG) – aircraft with a radius of action of 280 km (150 NM) plus ½ hour search remaining.
- Helicopter (HEL-L) – light helicopter with a radius of action for rescue purposes of up to 185 km (100NM) and a capacity for evacuating 1 to 5 persons.
- Helicopter (HEL-M) – medium helicopter with a radius of action for rescue purposes of 185 to 370 km (100 to 200 NM) and a capacity for evacuating 6 to 15 persons.
- Helicopter (HEL-H) – heavy helicopter with a radius of action for rescue purposes of more than 370 km (200 NM) and a capacity for evacuating more than 15 persons.
- Rescue boat (RB) – short-range coastal or river craft with an approximate speed of 14 knots or higher.
- Rescue vessel (RV) – vessel possessing sea-going qualities, long range and reasonable speed. Patrol, customs, pilotage and other craft fulfil the purpose if assigned a high priority for search and rescue operations.

State	Name of and RCC/RSC	SPOC	Remarks
1	2	3	4
AFGHANISTAN		CENTAF-AUAB CAOC JSRC Associated MCC: TRMCC	

AUSTRALIA	JRCC Australia	JRCC Australia	JRCC Australia is a Joint Aeronautical and Maritime RCC located in Canberra Thursday Island: HEL-M, RV Cairns: MRG/HEL-M, RV Townsville: VLR/HEL-M, RV Yeppoon: HEL-M, RV Whitsunday Islands: HEL-M, RV Brisbane: ELR/HEL-M, RV Coffs Harbour: RV Newcastle: HEL-M, RV Sydney: ELR/HEL-M, RV Melbourne: MRG/HEL-M, RV Hobart: HEL-M, RV Adelaide: ELR/HEL-M, RV Perth: MRG/HEL-M, RV Port Headland: RV Broome: HEL-H, RB Darwin: ELR/HEL-M, RV
BANGLADESH	Dhaka RCC	Dhaka RCC	Dhaka: SRG, RV
BRUNEI DARUSSALAM		NSARCC Associated MCC: SIMCC	
CAMBODIA	Phnom-Penh RCC	Air Navigation and Safety Department, State Secretariat of Civil Aviation Cambodia (SSCA)	Phnom-Penh: MRG, RV
CHINA	Beijing RCC Guangzhou RCC Kunming RCC Lanzhou RCC Shanghai RCC Shenyang RCC Taibei RCC Uramqi RCC Wuhan RCC	CNMCC (China Maritime Search and Rescue Centre)	Beijing: MRG/SRG, RV Tianjin: RV Guangzhou: MRG/SRG, RV Sanya: RV Shantou: RV Zhanjiang: RV Kunming: SRG, RV Lanzhou: SRG, RV Fuzhou: RV Lianyungang: RV Shanghai: MRG/SRG, RV/ RB Qingdao: RV Yantai: RV Wenzhou: RV Xiamen: RV Dalian: RV Qinhuangdao: RV Chiayi: LRG/HEL-M Chilung: RV Hsinghu: LRG/HEL-M Hualien: RV Uramqi: SRG Wuhan: SRG
DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA (DPRK)	Pyongyang RCC	MRCC	Pyongyang: MRG/HEL-M, RV
FIJI	Nadi RCC	Nadi RCC Associated MCC: AUMCC	Nadi: ELR/HEL-M, RV/RB
FRENCH POLYNESIA	Tahiti RCC	Tahiti RCC Associated	Papeete: MRG/HEL-M, RV/RB

		MCC: FMCC	
HONG KONG, CHINA	Hong Kong RCC	HKMRCC	Hong Kong: MRG/HEL-M, RV/RB
INDIA	Mumbai RCC Kolkata RCC Delhi RCC Chennai RCC	INMCC	Mumbai: ELR/HEL-M, RV/RB Kolkata: ELR/HEL-M Delhi: ELR/HEL-M, RV/RB Chennai: ELR/HEL-M
INDONESIA	Biak RCC Jakarta RCC Medan RSC Padang RSC Pekanbaru RSC Pontianak RSC Tanjung RSC Pinang RSC Surabaya RCC Balikpapan RSC Banjarmasin RSC Denpasar RSC Kupang RSC Ujung Pandang RCC Ambon RSC Manado RSC	IDMCC	Biak: LRG Jayapura: SRG/HEL-M, RB Merauke: RB Sorong: SRG/HEL-M, RB Jakarta: LRG/HEL-M, RB Medan RSC: LRG/HEL-M, RV/RB Padang RSC: SRG, RV/RB Pekanbaru RSC: SRG/HEL-L, RB Pontianak RSC: SRG/HEL-L, RB Tanjung RSC: SRG, RB Pinang RSC: Surabaya: LRG/HEL-L, RV/RB Balikpapan RSC: SRG/HEL-M, RV/RB Banjarmasin RSC: SRG, RB Denpasar RSC: LRG, RV/RB Kupang RSC: SRG/HRL-M, RB Ujung Pandang: LRG/HEL-L, RV/RB Ambon RSC: SRG, RV/RB Manado RSC: SRG/HEL-L, RV/RB
JAPAN	Tokyo RCC	JAMCC	Kushiro: HEL-M, RV Hakodate: HEL-M, RV Hachinohe: LRG, RV Niigata: HEL-M, RV Tokyo: LRG/HEL-M, RV Komatsu: LRG, RV Miho: HEL-M, RV Iwakuni: LRG Fukuoka: MRG/HEL-M, RV Nagasaki; HEL-M, RV Kagoshima: HEL-M Naha: LRG/MRG, RV Ishigaki: HEL-M, RV Kushiro: HEL-H, RV Chitose: MRG Hakodate: HEL-H, RV Shiogama: HEL-H, RV Niigata: HEL-H, RV Tokyo: MRG, ELR Yokohama: HEL-H, RV Nagoya: HEL-H, RV Kobe: HEL-H, RV Iwakuni: LRG Fukuoka: HEL-H, RV Kagoshima: HEL-H, RV Naha: MRG
LAO PDR	Vientiane RCC	Vientiane RCC Associated MCC: VNMCC	Vientiane: MRG/HEL-M
MACAO, CHINA		Macao Marine Department Associated MCC: HKMCC	RV/RB

MALAYSIA	Kuala Lumpur RCC Butterworth RSC Kuantan RSC Kota Kinabaku RCC Kuching RSC Labuan RSC	ARCC Kuala Lumpur Associated MCC: SIMCC	Alor Setar: SRG Butterworth RSC: ELR/HEL-H, RV/RB Kota Bharu: ELR/HEL-H Kuantan RSC: ELR/HEL-H, RB Klung: HEL-H Kuala Lumpur: ELR/HEL-H, RV/RB Brunei: SRG/HEL-M, RV/RB Kota Kinabalu Kuching RSC: MRG/HEL-H, RV/RB Labuan RSC: MRG/HEL-H, RV Miri: MRG/HEL-M, RB Sandakan: MRG/HEL-M Sibu: MRG/HEL-M Tawau: MRG/HEL-H
MALDIVES	Male RCC	Maldives Airport Company Ltd Associated MCC: INMCC	Male: SRG/HEL-M, RV/RB
MONGOLIA	Ulaanbatar RCC	ARCC Associated MCC: CMCC	
MYANMAR	Yangon RCC	Associated MCC: SIMCC	Yangon: MRG/SRG/HEL-M, RV/RB
NAURU	Nauru RCC	Nauru RCC Associated MCC: AUMCC	Nauru: ELR/VLR/SRG, RV/RB
NEPAL	Kathmandu RCC	Department of Civil Aviation Associated MCC: INMCC	Kathmandu: MRG/HEL-M
NEW CALEDONIA	New Caledonia RSC	RSC Tontouta Associated MCC: AUMCC	Noumea: SRG/HEL-L, RV/RB
NEW ZEALAND	New Zealand RCC	RCCNZ Associated MCC: AUMCC	Auckland: ELR/HEL-M, RVRB Christchurch: MRG/HEL, RB Wellington: HEL-M, RB
PAKISTAN	Karachi RCC Lahore RCC	PAMCC	Karachi: MRG, RV Lahore: MRG
PAPUA NEW GUINEA	Port Moresby RCC	MRCC Port Moresby Associated MCC: AUMCC	Lae: MRG, RB Madang: SRG, RB Port Moresby: ELR, RV Rabaul: RB Wewak: SRG
PHILIPPINES	Manila RCC	CAAP ORCC Associated MCC: HKMCC	Manila: LRG/HEL-M, RB Mactan: LRG/HEL-L, RV Zamboanga: RV
REPUBLIC OF KOREA	Incheon RCC	KOMCC	Chuncheon: SRG Daegu: MRG/HEL-L Gangneung: SRG Gimhae: SRG/HEL-M, RV Gimpo: SRG/HEL-M Gunsan: HEL-M Gwangju: MRG/HEL-M Incheon: MRG/HEL-M, RV Jeju: SRG/HEL-M, RV Mokpo: HEL-M Mukho: RV Osan: MRG/HEL-H Pohang: HEL-M, RV Yangyang RSC, RB
SINGAPORE	Singapore RCC	SIMCC	Singapore: LRG/HEL-H, RV/RB

SOLOMON IS.	Honiara RCC	MRCC Honiara Associated MCC: AUMCC	Honiara: ELR/VLR/SRG, RV/RB
SRI LANKA	Colombo RCC	Colombo RCC Associated MCC: INMCC	Colombo/Ratmalana: LRG/HEL-M, RV
THAILAND	Bangkok RCC	THMCC	Bangkok: MRG/HEL-L Sattahip: MRG/HEL-L Songkhla: SRG/HEL-L Khok Kathiam: SRG/HEL-L Prachuap Kiri-Khan: SRG
UNITED STATES	Elmendorf RCC Honolulu RCC Juneau RCC Langley RCC Long Beach RCC Seattle RCC	USMCC	Anchorage: ELR Fairbanks: ELR Guam I: ELR Hito: HEL-M, RV Honolulu: VLR/HEL-L, RV/RB Adak: VLR Juneau: RV Ketchikan: RV Kodiak: VLR/HEL-L/ HEL-M, RV Sitka: HEL-M, RV Eureka: HEL-L Long Beach: VLR Los Angeles: ELR/SRG/ HEL-L, RV Sacramento: VLR Sandiego: ELR/SRG/HEL-L, RV San Francisco: HEL-M, RV Astoria: SRG/HEL-L, RV Port Angeles: HEL-L, RV
VANUATU	Port Vila RCC	Vanuatu Ports and Marine Department Associated MCC: AUMCC	Port Vila: SRG, RV/RB
VIET NAM	Ha Noi RCC Ho Chi Minh RCC Da Nang RSC	VNRCC	Cat Bi: HEL-M, RV/RB Gia Lam: LRG/SRG/HEL-H Hoa Lac: HEL-H/HEL-M Noi Bai: LRG/MRG/HEL-H Vinh:MRG/HEL-M, RV/RB Can Tho: SRG/HEL-M, RV/RB Da Lat/Lien Khuong: SRG/HEL-M Da Nang RSC: LRG/MRG/SRG/HEL-L/HEL-M, RV/RB Nha Trang: MRG/HEL-H, RV/RB Phu Cat: SRG/HEL-H Phu Quoc: SRG/HEL-H/HEL-M, RV/RB Tan Son Nhat: LRG/SRG/HEL-L Vung TauHEL-H, RV

CHART SAR II-1

RESCUE COORDINATION CENTRES (RCCS) AND RESCUE SUB-CENTRES (RSCS) FOR THE ASIA AND PACIFIC REGIONS

TBD

APAC ANP, VOLUME II

PART VII - AERONAUTICAL INFORMATION MANAGEMENT (AIM)

1. INTRODUCTION

1.1 This part of the APAC ANP, Volume II, complements the provisions in ICAO SARPs and PANS related to AIS/AIM and aeronautical charts (MAP). It contains dynamic plan elements related to the assignment of responsibilities to States for the provision of AIS/AIM facilities and services within a specified area in accordance with Article 28 of the *Convention on International Civil Aviation* (Doc 7300); and mandatory requirements related to the AIS/AIM facilities and services to be implemented by States in accordance with regional air navigation agreements. Such agreement indicates a commitment on the part of the State(s) concerned to implement the requirement(s) specified.

2. GENERAL REGIONAL REQUIREMENTS

2.1 The responsibility for the provision of AIS/AIM facilities and services in the Asia and Pacific Regions, is reflected in the Asia and Pacific Regions **Table AIM II-1,** which shows the list of designated international NOTAM Office (NOF), designated State for AIP production, designated State for aeronautical charts (MAP) production, designated State for the provision of the authoritative Integrated Aeronautical Information Database (IAID) and designated State for the provision of the pre-flight information services.

2.2 States should designate and implement an authoritative Integrated Aeronautical Information Database (IAID) where data sets are integrated and used to produce current and future AIS/AIM products and services, which is a fundamental step in the transition to AIM. The designation of authoritative databases should be clearly stated in the Aeronautical Information Package AIP.

2.3 The national plans for the transition from AIS to AIM identifying clearly the timelines for the implementation of the different elements of the ICAO Roadmap for the transition from AIS to AIM should be submitted by States to the ICAO Asia and Pacific Regions Regional Office. States should also inform the ICAO APAC Regional Office of any update.

2.4 States should take necessary measures to ensure that aeronautical information and data they provide meet the regulatory Aeronautical Data quality requirements.

2.5 The Quality Management System (QMS) in AIS/AIM should define procedures to meet the safety and security objectives associated with the management of aeronautical data and information.

2.6 Recognizing the need to maintain or enhance existing safety levels of operations, States should ensure that any change to the existing systems or the introduction of new systems used for processing aeronautical data and/or information are preceded by a safety assessment.

2.7 Technical services responsible for origination of the raw aeronautical information should be acquainted with the requirements for promulgation and advance notification of changes that are operationally significant as established in Annexes 11 and 14 and other relevant ICAO documentation. They should take due account of the time needed by AIS/AIM for the preparation, production and issue of the relevant material, including the compliance with the AIRAC procedures.

2.8 AIS/AIM personnel should be involved in the air navigation planning processes. This should ensure the timely preparation of appropriate AIS documentation and that the effective dates for changes to the air navigation system and procedures are satisfied.

2.9 States should produce relevant aeronautical charts required for civil air operations employing visual air navigation independently or in support of other forms of air navigation. The production responsibility

for sheets of the World Aeronautical Chart (WAC) — ICAO 1: 1 000 000 or Aeronautical Chart — ICAO 1: 500 000 (*as an alternative to the World Aeronautical Chart — ICAO 1:1 000 000)* is set out in **Table AIM II-2**.

3. SPECIFIC REGIONAL REQUIREMENTS

3.1 The priority regional requirements for AIM implementation are:

a) Establishment of AIS either as a separate entity within or, ideally, separated from the civil aviation administration in accordance with the guidance provided in ICAO Doc 8126 – AIS Manual Chapter 3;

b) Implementation of quality management systems for aeronautical information;

c) Establishment of formal agreements between AIS providers and aeronautical data originators specifying the content, quality, maintenance and timing of provision of aeronautical data that is required to be promulgated in AIP, and the quality management process that shall be applied;

d) Implementation of internet-accessible electronic AIP generated from a digital database of aeronautical information;

Note: some existing aeronautical information products may not be suitable for migration into digital datasets

e) The taking of all necessary measures to develop and implement AIM training programs for AIS personnel, including training in digital data management, and end-to-end quality management processes; and

f) Provision of full access to the relevant ICAO Annexes and Documents to all personnel having responsibility for the origination, reception, management and/or distribution of aeronautical information and aeronautical data.

TABLE AIM II-1 - RESPONSIBILITY FOR THE PROVISION OF AIS/AIM FACILITIES AND SERVICES IN THE ASIA AND PACIFIC REGIONS

Note: To be completed

EXPLANATION OF THE TABLE

Column:

1 Name of the State or territory
2 Designated international NOTAM Office (NOF)
3 Designated State for AIP production
4 Designated State for aeronautical charts (MAP) production
5 Designated State for the provision of the authoritative Integrated Aeronautical Information Database (IAID)
6 Designated State for the provision of pre-flight information services
7 Remarks — additional information, as appropriate.

State	NOF	AIP	MAP	IAID	Pre-flight briefing	Remarks
1	2	3	4	5	6	7
Afghanistan						
Australia	Sydney					
Bangladesh	Dhaka					
Bhutan	Paro					
Brunei Darussalam						
Cambodia	Phnom Penh					
China	Beijing					
Hong Kong, China	Hong Kong					
Macao, China						
Cook Islands						
Democratic People's Rep. of Korea	Pyongyang					
Fiji	Nadi					
French Polynesia	Tahiti					
India	Chennai Delhi Kolkata Mumbai					
Indonesia	Jakarta					
Japan	Tokyo					
Kiribati						
Lao Peoples' Democratic Republic	Vientiane					
Malaysia	Kota Kinabalu Kuala Lumpur					
Maldives	Male					
Marshall Islands						
Micronesia (Federated States of)						
Mongolia	Ulaanbaatar					
Myanmar						
Nauru	Nauru					
Nepal	Kathmandu					
New Caledonia						
New Zealand	Apia					

	Christchurch					
Pakistan	Karachi					
Palau						
Papua New Guinea	Port Moresby					
Philippines	Manila					
Republic of Korea	Incheon					
Samoa						
Singapore	Singapore	Singapore	Singapore	Singapore	Singapore	
Solomon Islands	Honiara					
Sri Lanka	Colombo					
Thailand	Bangkok					
Timor-Leste						
Tonga						
United States of America						
Vanuatu	Port Vila					
Viet Nam	Ho Chi Minh					

TABLE AIM II-2 - PRODUCTION RESPONSIBILITY FOR SHEETS OF THE WORLD AERONAUTICAL CHART - ICAO 1:1 000 000 OR AERONAUTICAL CHART — ICAO 1: 500 000

EXPLANATION OF THE TABLE

Column:

1 Name of the State accepting production responsibility.

2 World Aeronautical Chart — ICAO 1:1 000 000/Aeronautical Chart — 1: 500 000 sheet number(s) for which production responsibility is accepted.

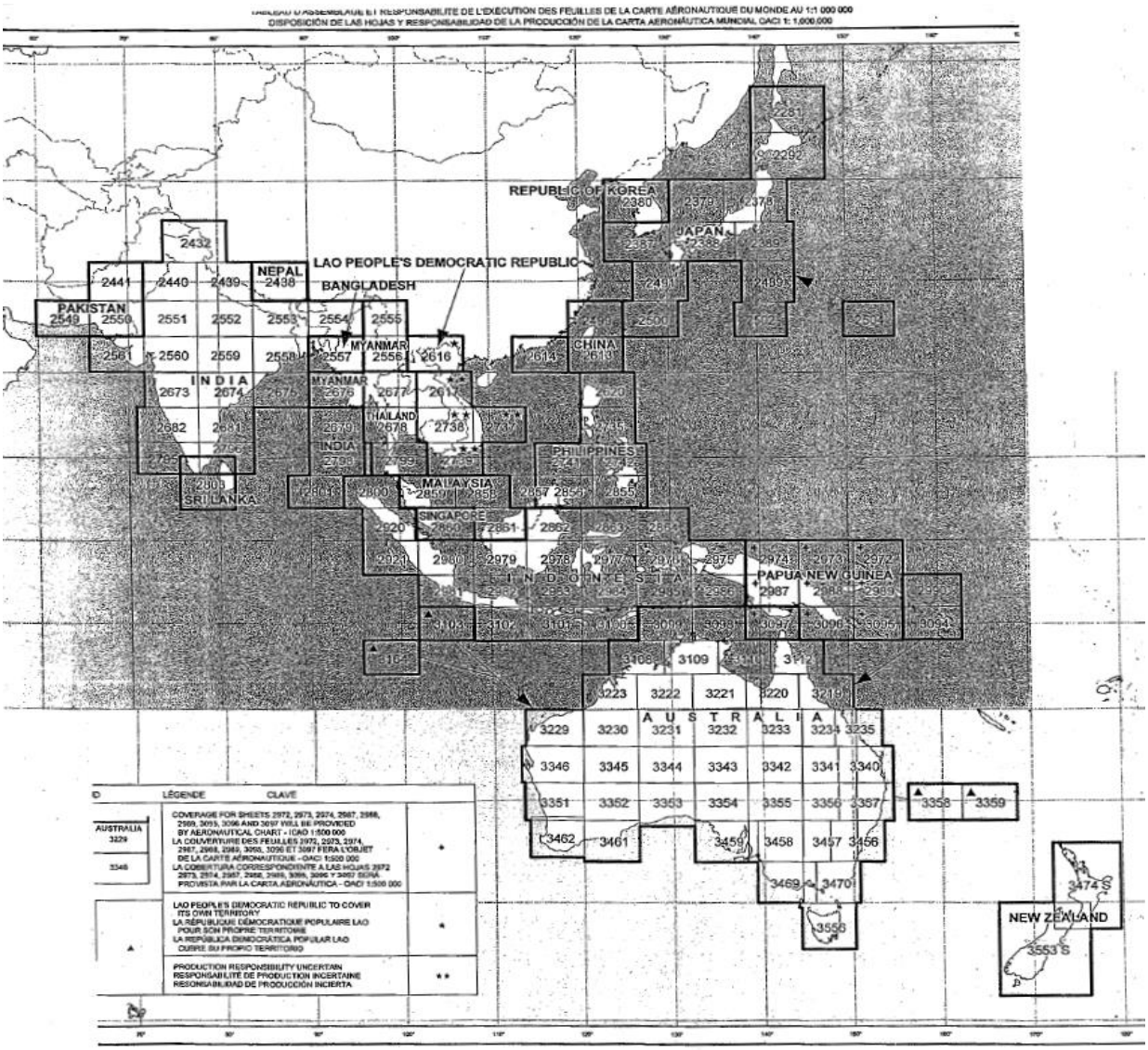
3 Remarks.

Note — In those instances where the production responsibility for certain sheets has been accepted by more than one State, these States by mutual agreement should define limits of responsibility for those sheets. This should be reflected in the Remarks column.

State	Sheet number(s)	Remarks
1	2	3
Afghanistan	2336, 2337, 2430, 2431, 2442	
Australia	3097, 3098, 3099, 3103, 3108, 3109, 3110, 3111, 3112, 3164, 3219, 3220, 3221, 3222, 3223, 3229, 3230, 3231, 3232, 3233, 3234, 3235, 3340, 3341, 3342, 3343, 3344, 3345, 3346, 3351, 3352, 3353, 3354, 3355, 3356, 3357, 3358, 3359, 3456, 3457, 3458, 3459, 3461, 3462, 3469, 3470, 3556	
Solomon Islands	2990, 3094	
Bangladesh	2557	
Bhutan		
Brunei Darussalam		
Cambodia		
China		
Hong Kong, China		
Macao, China		
Cook Islands		
Democratic People's Rep. of Korea		
Fiji		
French Polynesia		
India	2432, 2439, 2440, 2551, 2552, 2553, 2554, 2558, 2559, 2560, 2561, 2673, 2674, 2675, 2679, 2681, 2682 2795 2796 2798, 2801	With western sheet edge extended to meridian 71 E With western sheet edge extended to meridian 71E Excluding Sri Lanka

Indonesia	2800, 2862, 2863, 2864, 2920, 2921, 2975, 2976, 2977, 2978, 2979, 2980, 2981, 2982, 2983, 2984, 2985, 2986, 3100, 3101, 3102	
Japan	2281, 2292, 2378, 2379, 2387, 2388, 2389, 2489, 2491, 2500, 2502, 2504	
Kiribati		
Lao Peoples' Democratic Republic	2616 2617	Lao PDR to cover its own territory Lao PDR to cover its own territory and Viet Nam to cover Ho Chi Minh
Malaysia	2858, 2859, 2861	
Maldives		
Marshall Islands		
Micronesia (Federated States of)		
Mongolia		
Myanmar	2555, 2556, 2676	
Nauru		
Nepal	2438	
New Caledonia		
New Zealand	3474, 3553	
Pakistan	2441, 2549, 2550	
Palau		
Papua New Guinea	2972, 2973, 2974, 2987, 2988, 2989, 3095, 3096	
Philippines	2620, 2735, 2741, 2742, 2855, 2856	
Republic of Korea	2380	
Samoa		
Singapore	2860	
Sri Lanka	2803	With sheet lines extended to include the whole of Sri Lanka
Thailand	2677, 2678, 2799	
Timor-Leste		
Tonga		
Vanuatu		
Viet Nam	2617, 2737, 2738, 2739	Lao PDR to cover its own territory and Viet Nam to cover Ho Chi Minh FIR

Note: a scan of the AIM FASID chart follows for checking purposes


DISPOSICIÓN DE LAS HOJAS Y RESPONSABILIDAD DE LA PRODUCCIÓN DE LA CARTA AERONÁUTICA MUNDIAL OACI 1: 1,000,000
REPUBLIC OF KOREA
JAPAN
LAO PEOPLE'S DEMOCRATIC REPUBLIC
BANGLADESH
NEPAL
PAKISTAN
MYANMAR
CHINA
INDIA
THAILAND
PHILIPPINES
MALAYSIA
SINGAPORE
SRI LANKA
INDONESIA
PAPUA NEW GUINEA
AUSTRALIA
NEW ZEALAND
LÉGENDE
CLAVE
AUSTRALIA 3329
3346
COVERAGE FOR SHEETS 2972, 2973, 2974, 2987, 2988, 2989, 3095, 3096 AND 3097 WILL BE PROVIDED BY AERONAUTICAL CHART - ICAO 1:500 000
LA COUVERTURE DES FEUILLES 2972, 2973, 2974, 2987, 2988, 2989, 3095, 3096 ET 3097 FERA L'OBJET DE LA CARTE AÉRONAUTIQUE - OACI 1:500 000
LA COBERTURA CORRESPONDIENTE A LAS HOJAS 2972, 2973, 2974, 2987, 2988, 2989, 3095, 3096 Y 3097 SERÁ PROVISTA POR LA CARTA AERONÁUTICA - OACI 1:500 000
LAO PEOPLE'S DEMOCRATIC REPUBLIC TO COVER ITS OWN TERRITORY
LA RÉPUBLIQUE DÉMOCRATIQUE POPULAIRE LAO POUR SON PROPRE TERRITOIRE
LA REPÚBLICA DEMOCRÁTICA POPULAR LAO CUBRE SU PROPIO TERRITORIO
PRODUCTION RESPONSIBILITY UNCERTAIN
RESPONSABILITÉ DE PRODUCTION INCERTAINE
RESPONSABILIDAD DE PRODUCCIÓN INCIERTA