International Civil Aviation Organization

Twenty Seventh Meeting of the Communications/ Navigation and Surveillance Sub-group (CNS SG/27) of APANPIRG

Bangkok, Thailand, 28 August – 01 September 2023

Agenda Item 2: Review outcomes of 41st Session of ICAO Assembly, APANPIRG, APAC ANSP Committee, ATM Sub-group, MET Sub-group and other meetings relevant to CNS Sub-group

AIR TRAFFIC MANAGEMENT AND AIRSPACE SAFETY MONITORING OUTCOMES

(Presented by Secretariat)

SUMMARY

This paper presents key outcomes from the technical working groups established under the oversight of the Air Traffic Management and Regional Airspace Safety Monitoring Advisory Sub-Groups of APANPIRG, and other information relevant to CNS Sub-Group.

1. INTRODUCTION

1.1 The Tenth Meeting of the Air Traffic Management Sub-Group of APANPIRG (ATM/SG/10) was held from 17 to 21 October 2022.

1.2 ATM/SG/11, scheduled to be held from 02 to 06 October 2023, will consider outcomes from the following meetings:

- The Second Meeting of the South Asia, Indian Ocean and Southeast Asia ATM Coordination Group (SAIOSEACG/2, 20 to 24 March 2023);
- Thirteenth Meeting of the ATFM Steering Group (ATFM/SG/13, 03 to 07 April 2023); and
- The Eighteenth Meeting of the Aeronautical Information Services (AIS) – Aeronautical Information Management (AIM) Implementation Task Force (AAITF/18, 19 to 23 June 2023).

1.3 The Thirteenth Meeting of the Future Air Navigation Services (FANS) Interoperability Team – Asia (FIT-Asia/13) was held from 06 to 09 June 2023).

2. DISCUSSION

ATM/SG/10 Outcomes

ATM-Related Regional Guidance and Plans Update Cycle, Standardised Reporting Format and Reporting Date

2.1 The meeting considered a proposal for a revised document review cycle for ATM-related Regional guidance material and plans, and a revised common due date (28 February each year) and standardised format for implementation status reporting of their performance expectations.

2.2 The meeting agreed to the following Conclusion:

Conclusion ATM/SG/10-1: Revised Reporting Date for ATM Regional Plans' Implementation Status Monitoring

That,

1. *States are urged to report their implementation status of the performance expectations of the following regional plans by not later than 28 February each year:*
   a) *Regional ATM Contingency Plan;*
   b) *Regional Framework for Collaborative ATFM;*
   c) *Regional Plan for Collaborative AIM; and*
   d) *Regional SAR Plan; and*
2. *The implementation reporting forms for each of these regional plans be updated to provide for reporting in percentages of implementation.*

This Conclusion supersedes the status reporting requirements of Conclusions ATM/SG 5-3, 5-8 and 7-16

2.3 The meeting agreed to the proposed document review cycle for ATM-related plans that were subsidiary to the Seamless ANS Plan. (**Figure 1**)

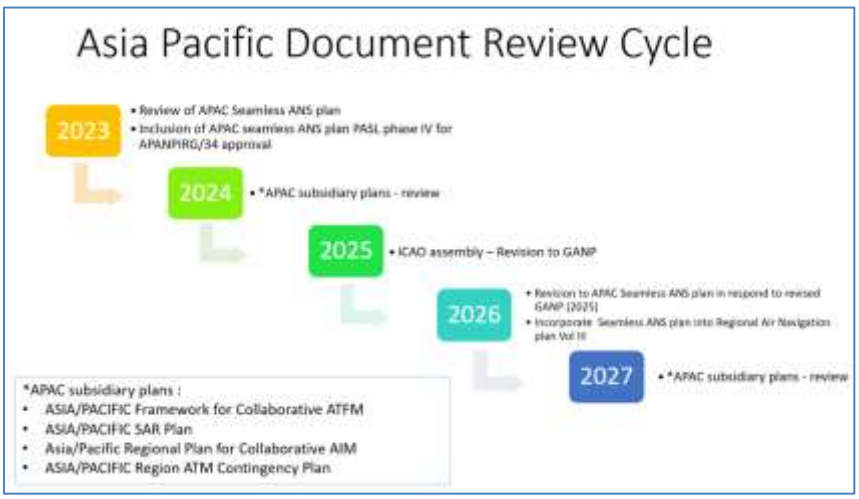

Figure 1: ATM-Related Document Review Cycle

Application of ATC Separation Minimums

2.4 The Secretariat provided information on the Seamless ATM survey conducted to determine which Air Traffic Control (ATC) separation minima were being applied within the Asia/Pacific Region. The survey measured the minimum horizontal separation standard within State/Administration's FIR in Category R, Category S and Category T airspace[1]. **Figures 2** and **3** illustrated the efficiency of ATC spacing between aircraft at the same level as it is theoretically being applied inbound at FIR TOC Points, and within FIRs.

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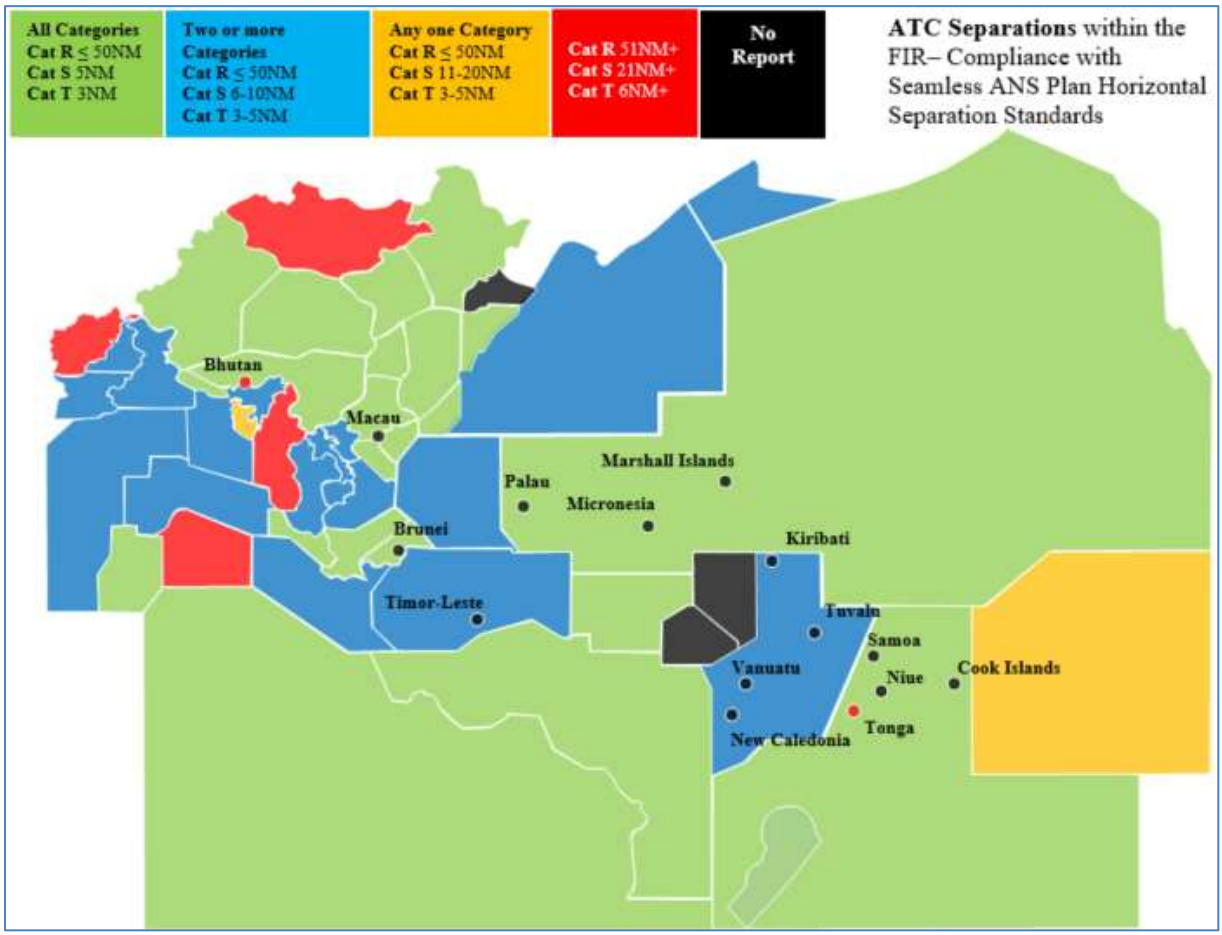

Figure 2: Horizontal Separation Minima within the FIR, September 2022

[1] Asia/Pacific Seamless ANS Plan paragraph 1.4:

Category R: remote en-route airspace with Air Traffic Services (ATS) HF or CPDLC communications and outside the coverage of ground-based surveillance coverage; or

Category S: serviced (or potentially serviced) en-route airspace – by direct (not dependent on a Communication Service Provider (CSP) ATS communications and surveillance; or

Category T: terminal operations serviced by direct ATS communications and surveillance.

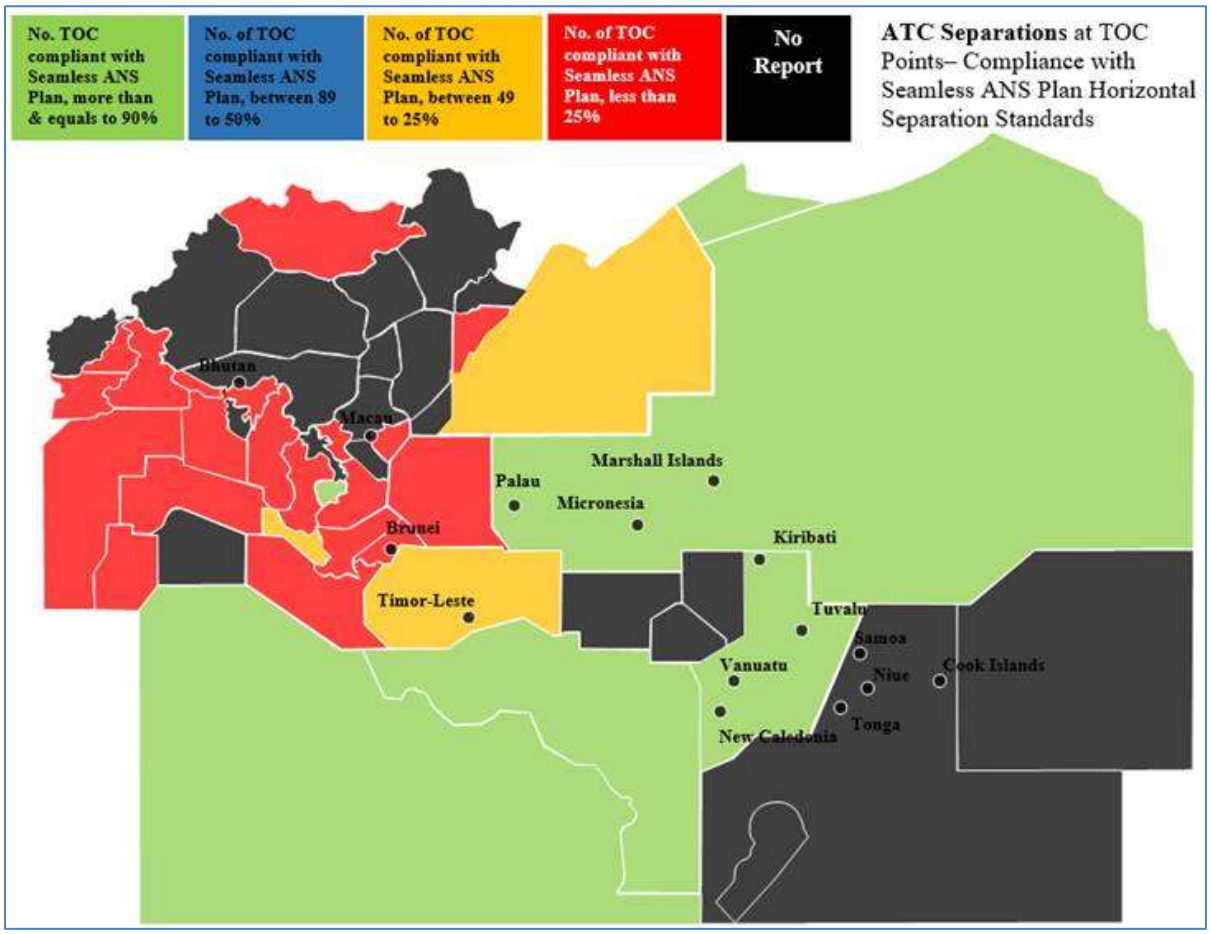

Figure 3: ATC Horizontal Spacing at Inbound FIR TOC points, September 2022

2.5 The survey results also revealed that for those compliant TOC points 'Category R/S airspace to Category S' FIR TOC Point had the highest rate of compliance in APAC region whereas for the non-compliant TOC points, the most prevalent were 'Category S airspace to Category S' FIR TOC Points with 432 TOC points reported. Even with surveillance coverage, separation minima of more than 10NM were currently applied at TOC points in the APAC region. All Administrations were urged to complete the ATC separations survey and to implement separation minima and update their Air Traffic Services (ATS) LOAs to meet the expectations of the Asia/Pacific Seamless ANS Plan.

ANS USOAP Update

2.6 The average ANS Effective Implementation (EI) of APAC region was 64.24%, as at October 2022. **Figure 4** illustrated the EI ratings for ANS-related PQs of the 37 APAC States that had been audited or received USOAP activity:

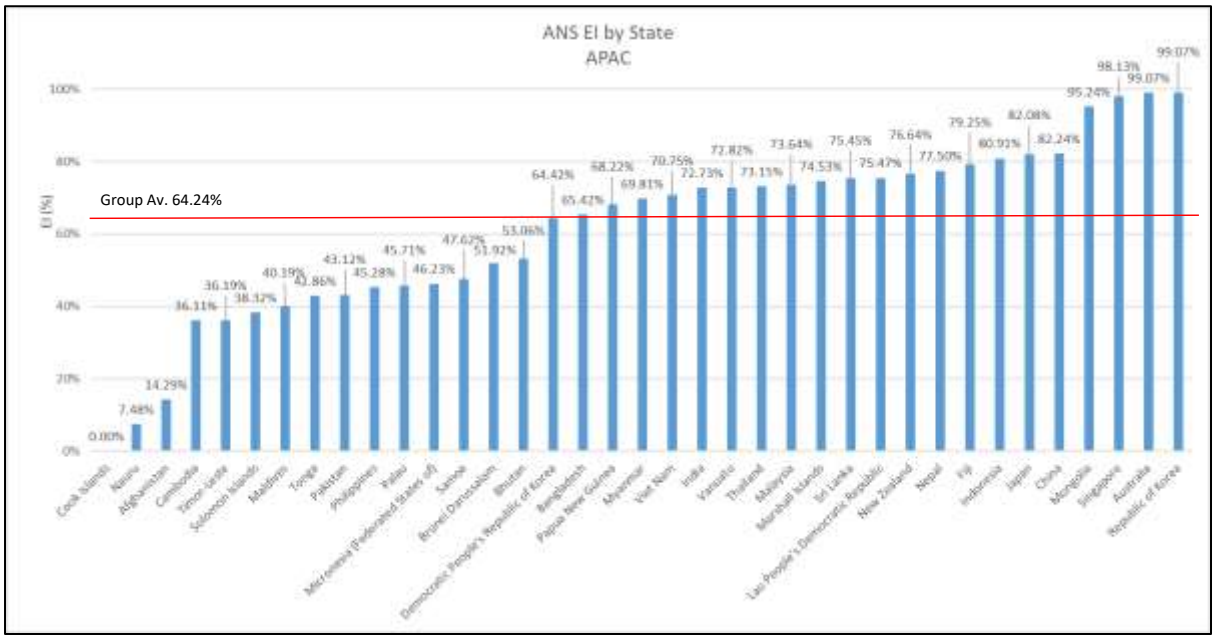

Figure 4: USOAP ANS EI Comparisons by State (October 2022)

ICAO Doc 7030 Regional Supplementary Procedures Publication Guidance

2.7 The meeting discussed on PfAs to ICAO Doc 7030 Regional Supplementary Procedures (SUPPS), jointly submitted by several States, for the implementation of ADS-B In Trail Procedure (ITP) and ADS-C Climb and Descent Procedure (CDP). In its review ICAO Headquarters had determined parts of the PfAs were unnecessary.

2.8 ATM/SG/10 agreed to Draft Conclusion ATM/SG/10-2, which was subsequently adopted by APANPIRG/33:

Conclusion APANPIRG/33/5: Provide clear direction on Doc 7030 Regional SUPPs publication requirements

That, ICAO provides clear direction on which separation minima require Doc 7030 Regional SUPPS publication to provide consistency in the information published in the different ICAO Regions.

2.9 A State letter in response to the Conclusion APANPIRG/33/5 will be promulgated after final consultation with ICAO HQ and EURNAT office. The ATM/SG/11 in October 2023 could discuss the matter further if needed.

Establishment of a Study Group to Prepare a Set of Harmonised Operational Requirements of FF-ICE for Asia/Pacific

2.10 Japan, Singapore, USA and Thailand proposed the establishment of a Study Group to prepare a set of harmonised operational requirements of Flight and Flow Information for a Collaborative Environment (FF-ICE) and recommend an approach to devise an FF-ICE implementation strategy for Asia/Pacific, aligned with the Asia/Pacific Seamless ANS objective. FF-ICE would require changes in operational processes and flight planning procedures. New processes would be required to cater to a mixed mode environment where both current flight plan (FPL2012) and FF-ICE flight plan co-exist. The interaction of FF-ICE with other ATM initiatives such as Air Traffic Flow Management (ATFM) would also need to be studied.

2.11 The meeting agreed to the following Decision:

Decision ATM/SG/10-3: Establish FF-ICE Operational Requirements Small Working Group

That, ATM/SG establishes the FF-ICE Operational Requirements Small Working Group, that will:

a) study ICAO global TBO and FF-ICE provisions and the outcomes of relevant ICAO technical panels and regional technical groups; to

b) prepare a set of draft harmonised regional operational requirements of FF-ICE/R1, and related operational processes and procedures;

c) present related information to the FF-ICE seminar to be organised by ATMAS TF in 2023;

d) recommend an appropriate approach to devise a FF-ICE implementation strategy for the APAC region; and

e) recommend priority ASBU elements and develop draft regional performance objectives for consideration for inclusion in the Asia/Pacific Seamless ANS Plan version 4.0.

2.12 Singapore volunteered to organise the first meeting of the small working group. The following States/Administrations and international organization expressed interest to participate in this small working group: Australia, China, Hong Kong China, India, Japan, Mongolia, New Zealand, Thailand, USA and IATA. The rapporteur of the SWG would report the outcomes to ATM/SG for consideration.

Alphanumeric Call Signs

2.13 Following up on ***Conclusion APANPIRG/31/11: Alphanumeric Call Sign Initiative***, which had been drafted by the Twenty-Fifth Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/25) and cited the extreme safety risks associated with pilot-ATC miscommunication and the number of Category D (ATC Loop Error) LHDs, ATM/SG Action item 5/5 had been updated by ATM/SG/9 to include CANSO and ACI among the responsible parties, and to reference the APANPIRG Conclusion.

2.14 As a result of offline consultation on the Action Item between ACI, CANSO, IATA and ICAO, a regional webinar was conducted with a view to provide information on the need for Alpha Numeric Call Signs to mitigate call sign confusion in ATC communications, implementation challenges, and benefits to all stakeholders. The webinar, hosted by CANSO as a joint activity with ACI, and supported by IATA, was held on 01 June 2022. The webinar details and presentations were available on the CANSO website at:

https://canso.org/event/regional-focus-safety-significance-and-implementation-of-alphanumeric-call-signs/

AKARA Corridor Progress and Update

2.15 The meeting was informed that Republic of Korea would work closely with China and Japan to improve the situation regardless of the Phase 2 implementation delay, including:

- Efficient FLAS operation: formulating measures and discussion with Japan;
- AIDC implementation: with Shanghai ACC targeted by 3Q 2023; and

- Reducing longitudinal separation minima: 10 minutes (currently with Shanghai ACC).

2.16 ICAO mentioned that since Phase 2 had been delayed, ICAO would like to support such initiatives.

SAIOSEACG/2 Outcomes

2.17 The objective of the SAIOSEACG is to identify the need for, plan and implement Air Traffic Management (ATM) improvements in the Indian Ocean, South Asia and Southeast Asia areas.

2.18 The meeting discussed on:

- improvements to airspace and Air Traffic Services (ATS) route structures, in order to optimise safety and efficiency;
- improvements to ATS facilities such as communication and surveillance capability in support of flight operations; and
- airspace and facility requirements based on future technologies, Performance-based Navigation (PBN) and other advanced capabilities.

ATFM/SG/13 Outcomes

The CANSO Air Traffic Flow Management (ATFM) Data Exchange Network for Cooperative Excellence (CADENCE)

2.19 The meeting was informed of the CANSO Air Traffic Flow Management (ATFM) Data Exchange Network for Cooperative Excellence Task Force (CADENCE TF), created to support regional ATFM and Collaborative Decision Making (CDM) among Caribbean and Latin American States.

2.20 The meeting was informed of the CADENCE OIS developed by CANSO and CGH Technologies, Inc. The platform would enable ANSPs, airlines and potentially other airspace users to share information, facilitate situational awareness, and engage all stakeholders in the development of collaborative approaches to address issues included, but not limited to:

a) Regional Traffic Management Measures
b) Active Reroutes and Route database
c) Airport Delays (arrival and departure)
d) Advisories (Urgent or FYI)
e) NOTAMs
f) ATFM Daily Plan
g) Email Push Notification
h) Contingency Forms
i) Airport/Airspace Capacity
j) Other unique information such as briefings related to commercial space operations or volcanic eruptions and their related impacts.

2.21 Since further discussion on possible use cases of CADENCE OIS beyond the scope of ATFM was required. CANSO was therefore asked to provide a similar briefing to the upcoming ATM/SG/11 for further discussion.

2.22 The Chair of the MET/R WG presented updates related to the MET/R WG ad-hoc group consisting of MET and ATFM. Membership, key deliverables, and Terms of Reference of the ad-hoc group, including SWIM-Based MET information Services supporting ATFM, were shared with the meeting. In addition, examples of use case scenarios to support ATFM such as typhoon detours and volcanic ash avoidance were introduced to the meeting.

AAITF/17 Outcomes

NOTAM Proliferation Analysis

2.23 Detailed statistical data on old NOTAMs and very old NOTAMs was provided for Asia/Pacific Administrations. **Table 1** listed the 10 top NOTAM-promulgating APAC Administrations at 10 June 2022.

No	Administrations	Total NOTAM	Old NOTAM	Very Old NOTAM	Percent of old and very old NOTAM
1	China	1145	125	41	14.5%
2	Japan	1113	3	1	0.4%
3	India	935	73	394	49.9%
4	Australia	585	64	1	11.1%
5	Republic of Korea	583	1	0	0.2%
6	Philippines	471	54	43	20.6%
7	Malaysia	283	16	2	6.4%
8	Indonesia	191	0	83	43.5%
9	Thailand	163	1	9	6.1%
10	New Zealand	132	5	0	3.8%
		5601	**342**	**574**	**16.4%**

Table 1: Top 10 NOTAM-producing Administrations

2.24 APAC Administrations were invited to take immediate action to ensure full compliance with NOTAM procedures in ICAO Doc 10066 *Procedures for Air Navigation Services – Aeronautical Information Management* (PANS-AIM) and ***Conclusion ATM/SG/6-14***, and to ensure the consistent distribution of NOTAMN, NOTAMR, NOTAMC and NOTAM Checklists to international NOTAM Offices and multinational NOTAM processing units.

FIT-Asia/13 Meeting Outcomes

2.25 The RASMAG List of Competent Airspace Safety Monitoring Organizations (Last updated 25 July 2022) was reviewed and updated by the FIT-Asia/13 meeting. The FIT-Asia was informed that ICAO had learned that not all FIT-Asia member administrations had formal service agreements with APANPIRG-recognized Central Reporting Agencies (CRAs). **Table 2** shows the current formal CRA service agreements.

	APANPIRG-recognized CRA	**Scope of application**	**formal service agreement**
IPACG, ISPACG (United States)	CRA Boeing	IPACG States, ISPACG States, and NAT States	Yes
Japan	CRA Japan	Japan	Yes

SEASMA (Singapore)	CRA Boeing	Singapore, Philippines, and Viet Nam	Yes
India	CRA Boeing	India	Yes (Not for 2023)

Table 2: Current formal CRA service agreements

2.26 Subsequent to the FIT-Asia/13 meeting, ICAO reviewed the situation and considered that, given the importance of data link problem reporting in States' performance monitoring obligations under Annex 6 Operation of Aircraft Part I[2] and Annex 11 Air Traffic Services[3], the following Draft Conclusion be considered by RASMAG/28 (21 to 24 August 2023):

Draft Conclusion RASMAG/28-X: Formal Service Arrangements with CRA

That, States are urged to ensure that formal arrangements are made with an APANPIRG-recognized, competent Central Reporting Agency for the submission and analysis of data link problem reports. *Asia/Pacific Region Combined PBCS Monitoring Report*

Asia/Pacific Region Combined PBCS Monitoring Report

2.27 The report highlighted consolidated performance data and issues associated with Actual Surveillance Performance (ASP) and Actual Communications Performance (ACP) for the region. Overall ASP for the region had met the 95% criterion (**Table 3**). Overall ACP for the region met the 95% criterion (**Table 4**).

ACTUAL SURVEILLANCE PERFORMANCE - FIR AGGREGATE (ALL MEDIA TYPES)						
Region	Asia-Pacific Region					
Performance Criteria	RSP180					
Time Period	2022 January-June			2022 July-December		
	Message Counts	Criteria		Message Counts	Criteria	
		95%	99.90%		95%	99.90%
FIR		% <= 90sec	% <= 180sec		% <= 90sec	% <= 180sec
PAZA	1342364	98.94%	99.70%	1477614	98.94%	99.68%
RJJJ	1843788	98.49%	99.66%	2417297	98.69%	99.69%
KZAK	4301850	98.81%	99.66%	4831234	98.90%	99.72%
NFFF	186590	99.31%	99.69%	175745	99.13%	99.63%
NTTT	69699	99.76%	99.90%	72521	99.64%	99.84%
NZZO	196553	99.15%	99.83%	344849	98.91%	99.69%
YBBB	517841	99.93%	99.97%	952694	99.60%	99.88%
YMMM	306436	99.84%	99.93%	745742	99.47%	99.76%
RPHI	27832	99.25%	99.76%	344955	98.89%	99.58%
VCCF	385121	99.31%	99.83%	463887	99.55%	99.91%
VOMF	182599	98.44%	99.32%	241622	98.24%	99.19%
VECF	349179	98.96%	99.61%	364483	98.92%	99.54%
VVTS	154613	98.81%	99.83%	194999	99.06%	99.83%
WAAF	90840	99.42%	99.80%	121362	99.38%	99.75%
WSJC	408788	99.18%	99.87%	608655	99.12%	99.84%
ZLLL	188643	98.90%	99.60%	238034	98.80%	99.70%
ZWWW	103500	98.70%	99.60%	101848	98.80%	99.70%
WMFC	169757	98.89%	99.72%	390920	99.23%	99.80%

Table 3: Asia/Pacific Region ASP (RSP180)

[2] Annex 6 Part I 7.1.5 and 7.3.4

[3] Annex 11 2.29 and 3.3.5.2

ACTUAL COMMUNICATION PERFORMANCE - FIR AGGREGATE (ALL MEDIA TYPES)										
Region	Asia-Pacific Region									
Performance Criteria	RCP240									
Time Period	2022 January-June					2022 July-December				
		ACP Criteria		ACTP Criteria			ACP Criteria		ACTP Criteria	
FIR	Message Counts	95% % <= 180sec	99.90% % <= 210sec	95% % <= 120sec	99.90% % <= 150sec	Message Counts	95% % <= 180sec	99.90% % <= 210sec	95% % <= 120sec	99.90% % <= 150sec
PAZA	81331	98.89%	98.89%	98.77%	99.18%	95762	99.31%	99.54%	99.36%	99.57%
RJJJ	112574	99.63%	99.75%	99.79%	99.85%	151986	99.57%	99.71%	99.72%	99.82%
KZAK	246180	99.22%	99.49%	99.35%	99.60%	311405	99.38%	99.60%	99.59%	99.73%
NFFF	6607	99.51%	99.72%	99.65%	99.72%	6685	99.26%	99.41%	99.55%	99.62%
NTTT	4492	99.81%	99.83%	99.95%	99.97%	7138	99.57%	99.64%	99.92%	99.94%
NZZO	36564	99.21%	99.47%	99.58%	99.74%	65032	99.18%	99.43%	99.58%	99.72%
YBBB	11278	99.81%	99.88%	99.82%	99.88%	24371	99.57%	99.73%		
YMMM	12812	99.34%	99.51%	99.52%	99.69%	32204	99.01%	99.71%		
RPHI	9782	98.40%	98.58%	98.96%	99.19%	17065	98.12%	98.36%	98.62%	98.84%
VCCF	20125	98.22%	99.71%	99.91%	100.00%	25443	98.57%	99.49%	99.90%	99.96%
VOMF	66300	99.82%	99.89%	99.87%	99.92%	95889	99.82%	99.86%	99.88%	99.92%
VECF	20325	99.15%	99.35%	99.44%	99.64%	27629	99.08%	99.36%	99.40%	99.58%
VVTS	84045	95.94%	96.48%	99.62%	99.79%	60881	95.20%	95.79%	99.57%	99.73%
WAAF	17664	99.01%	99.22%	99.67%	99.75%	20604	99.27%	99.48%	99.77%	99.86%
WSJC	28819	99.00%	99.24%	99.10%	99.34%	40453	99.07%	99.32%	99.18%	99.39%
ZLLL	867	97.80%	97.92%	99.53%	99.53%	761	98.51%	98.66%	98.40%	98.80%
ZWWW	31	100.00%	100.00%	100.00%	100.00%	4	100.00%	100.00%	100.00%	100.00%
WMFC	52457	98.81%	99.17%	99.06%	99.41%	74495	99.17%	99.43%	99.38%	99.59%

Table 4: Asia/Pacific Region ACP (RCP240)

Large Height Deviation Hot Spots

2.28 RASMAG/27 (22 – 25 August 2022) included, in its airspace safety analysis, discussion of Large Height Deviation (LHD) Hot Spots.

2.29 **Table 11** summarizes current Large Height Deviation (LHD) Hot Spots, the FIRs involved, the year of identification, and status remarks.

Hot Spot	Involved FIRs	Identified	Remarks
A1	Kolkata/Dhaka-Yangon	2015	Cat. E LHDs. Risk reduced.
A2	Chennai – Yangon/Kuala Lumpur	2015	Cat. E LHDs reduced. Risk reduced. Potential non-hotspot 2023 (RASMAG/28)
B	Incheon (AKARA Airspace)	2015	Cat. E LHDs reduced. Risk reduced.
D	Manila – all adjacent FIRs	2015	Cat. E & F LHDs reduced. Risk reduced. Except Manila-Kobe/Fukuoka boundary.
F	Mogadishu – Mumbai	2015	Cat. E LHDs reducing. Risk reducing.
G	Sanaa/Muscat – Mumbai	2015	Cat. E LHDs. Risk reducing.
J	Jakarta – Singapore/Kota Kinabalu	2018	Cat. E LHDs.
M	Colombo – Melbourne	2019	LHDs and risk reducing. Awaiting response to establish a POC before removing from the hot spot list.
N	Oakland USA – Hawaii CEP	2019	Cat. E LHDs increasing. Risk increasing
O		2023	Cat. E LHDs.

Table 11: LHD Hot Spots in the Asia/Pacific Region

2.30 RASMAG/28 is expected to consider a proposal for potential non-hotspot to be identified this year, and to monitor them for another year (2024) before determining whether they can be removed.

2.31 CNS SG is invited to note that Air Traffic Services (ATS) Interfacility Data Communication (AIDC), while not a new technology, can be a significant mitigator of LHD incidents. However, there appeared to be cases where alerts to controllers when AIDC messaging had failed may have been either not presented, not seen, or not responded to. At the RASMAG/27 meeting IFATCA stressed the need for robust ATC training to ensure compliant use of new technology and application of contingency procedures when system operation failed.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) Note the information provided on:

i. ATM/SG/10 and subsequent APANPIRG Conclusions;

ii. SAIOSEACG/2;

iii. AAITF/18;

iv. ATFM/SG/13; and

v. RASMAG/28 (Conclusions RASMAG/28-x).

b) Discuss any other relevant matters, as appropriate.

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