FINAL REPORT

THE THIRTY-SECOND MEETING OF THE ASIA/PACIFIC AIR NAVIGATION PLANNING AND IMPLEMENTATION REGIONAL GROUP (APANPIRG/32)

Video Teleconference, 1 – 3 December 2021

The views expressed in this Report should be taken as those of the APANPIRG and not of the Organization. This Report will be presented to the Air Navigation Commission/Council and any formal action taken will be published in due course as a supplement to the Report.

Approved by the Meeting
and published by the ICAO Asia and Pacific Office

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PART I – HISTORY OF THE MEETING

1.1 Introduction

1.1.1 The Thirty-second Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/32) was held as a video teleconference from 1 to 3 December 2021.

1.2 Attendance

1.2.1 The Meeting was attended by **277** participants from **28** Member States, **2** Special Administrative Regions of China, and **8** International Organizations (AAPA, ACI, CANSO, IATA, ICAO, IFALPA, IFATCA and PASO).

1.2.2 A list of participants is provided at **Attachment 1** to the Report.

1.3 Opening of the Meeting

1.3.1 Mr. Tao Ma, Regional Director, ICAO Asia/Pacific Office welcomed the participants from the Member States and International Organizations, and delivered the welcome address. The full text of the address by the ICAO Regional Director is included as **Attachment 2** to this Report.

1.3.2 Mr. Kevin Shum, Deputy Secretary (Strategy, Sustainability & Technology) Ministry of Transport of Singapore and the Chairperson of APANPIRG, delivered a welcome address to the delegations.

1.4 Officers and Secretariat

1.4.1 Mr. Kevin Shum, Deputy Secretary (Strategy, Sustainability & Technology) Ministry of Transport and the Chairperson of APANPIRG presided over the Meeting.

1.4.2 Mr. Tao Ma, Regional Director, ICAO Asia/Pacific Office, was the Secretary of the Meeting.

1.4.3 The Meeting was assisted by Mr. Herman Pretorius, Mr. Martin Maurino, Ms. Chrystelle Damar, Mr. Hervé Forestier from Air Navigation Bureau of ICAO Headquarters, Mr. Manjit Singh, Deputy Regional Director, Mr. Raphael Guillet, Chief of RSO and Regional Officers from ICAO APAC Office and RSO.

1.5 Agenda of the Meeting

1.5.1 The meeting adopted the following Agenda:

Agenda Item 1A: Progress Update on Beijing Declaration Commitments

Agenda Item 1B: Follow-up on the Outcome of APANPIRG/31 Meeting

1B.1: Review of the action taken by the ANC/Council on the Report of APANPIRG/31

1B.2: Review status of implementation of APANPIRG/31 Conclusions and Decisions

1B.3: Review status of implementation of APANPIRG outstanding Conclusions and Decisions

Agenda Item 1C: ICAO APAC COVID-19 Contingency and Recovery Planning Group (ACCRPG) Activities

Agenda Item 1D: Aviation Safety and RASG-APAC activities

Agenda Item 2: Global and Inter Regional Activities

Agenda Item 3: Performance Framework for Regional Air Navigation Planning and Implementation

3.0: Regional and National Performance Framework

3.1: AOP

3.2: ATM

3.3: RASMAG

3.4: CNS

3.5 MET

3.6: Other Air Navigation Matters

Agenda Item 4: Regional Air Navigation Deficiencies

Agenda Item 5: Future Work Programme

Agenda Item 6: Any Other Business

1.6 Working Arrangements, Language and Documentation

1.6.1 The working language of the meeting was English inclusive of all documentation and this Report. Information Papers (IP) and Working Papers (WP) considered by the meeting are listed in the **Attachment 3** to this Report and available at APAC website.

1.7 Conclusions and Decisions - Definition

1.7.1 The APANPIRG records its actions in the form of Conclusions and Decisions with the following significance:

1) Conclusions deal with matters which, in accordance with the Group's Terms of Reference, require the attention of States or actions by ICAO in accordance with established procedures; and

2) Decisions deal with matters of concern only to the APANPIRG and its contributory bodies.

1.7.2 Lists of Conclusions and Decisions are given on pages i-4 to i-5.

1.8 Terms of Reference of APANPIRG

1.8.1 The revised Terms of Reference of APANPIRG approved by the President of the ICAO Council on 20 April 2020 is available in **Attachment 4**.

1.9 Adoption of Draft Report

1.9.1 On 3 December 2021, the meeting reviewed and adopted the draft report which has been finalized after incorporating some minor editorial comments received from States/Administrations and International Organisations.

1.10 Closing Remarks

1.10.1 In closing the meeting, the Chair thanked all delegates for their cooperation and active participation and the Secretariat for their contribution over the year in multiples meetings of subgroups and working groups and smooth and efficient organization of the meeting despite it being held virtually.

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List of Conclusions

Conclusion 32/2	**–**	**GRF Implementation Monitoring and Status**
Conclusion 32/3	**–**	**Implementation of Efficient ATS Horizontal Separations and Transfer of Control Aircraft Spacing**
Conclusion 32/6	**–**	**RVSM Approvals Data and Filing of RVSM Indicator in Flight Plans of State Aircraft**
Conclusion 32/7	**–**	**Implementation of CRV for small Pacific Island and small ANSP in the region using CRV Solution, PCCWG SLA Package D**
Conclusion 32/8	**–**	**Interrogator Code (IC) Planning and Coordination**
Conclusion 32/9	**–**	**Transition from II code to II and SI mixed code**
Conclusion 32/10	**–**	**The APAC Regional Roadmap for Mode S Implementation**
Conclusion 32/11	**–**	**Updating Online Register of IWXXM Exchange Status**
Conclusion 32/13	**–**	**Update on the provision of Space Weather Advisory**
Conclusion 32/14	**–**	**Update of Information in APANPIRG Air Navigation Deficiencies Reporting Form**

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List of Decisions

Decision 32/1	**–**	**Dissolution of the APA-CDM/TF**
Decision 32/4	**–**	**Revised ATFM/SG Terms of Reference**
Decision 32/5	**–**	**Combining SAIOACG and SEACG Groups to form the South Asia, Indian Ocean and Southeast Asia ATM Coordination Group (SAIOSEACG)**
Decision 32/12	**–**	**Meteorological expert contribution to SWIM/TF**

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Agenda Item 1A: Progress Update on Beijing Declaration Commitments

Where does APAC Stand with the Beijing Declaration Commitments? (WP/02)

1A.1 The Meeting noted ICAO's updates on Beijing Declaration Commitments proposing to review the current status of the APAC States' commitments in the field of Air Navigation Services, specifically Aeronautical Information Management (AIM), Performance Based Navigation (PBN), ground telecommunication infrastructure (CRV), civil military cooperation, surveillance capability (ADS-B), Air Traffic Flow Management (ATFM) / Collaborative Decision Making (CDM), and National Air Navigation Plan (NANP).

1A.2 The Beijing Declaration was the high-level commitment to public, industry and investors, which was adopted in the first *Asia Pacific Ministerial Conference on Civil Aviation* (Beijing, China, 31 January – 1 February 2018). All delegations from 36 States unanimously agreed to commit on improving the Aviation Safety and Air Navigation Services formalizing their commitments as high-priority with aviation safety and efficiency objectives. The Beijing Declaration could help the Civil Aviation Authorities to make their Ministers well aware of the current challenges and needs in human resources and funding to cope with the traffic growth.

1A.3 The Meeting was informed the current status of the States' commitments in the field of Air Navigation Services for the APAC Region, noting that some improvements have been made but in slow pace.

1A.4 For example, slight increase of overall progresses in Transition from AIS to AIM with Phase I increased to 54% from 51% in 2020, Phase II kept at 38% and Phase III increased to 12% from 10% in 2020.

1A.5 India and Japan published new PBN procedures for international airports. ICAO APAC Regional Office wants to remind States that the number of international aerodromes not listed in the APAC ANP is getting higher each year. As recalled at APANPIRG/30 Meeting, States are urged to provide information related to international aerodromes to update Table AOP I-1: International Aerodromes required in the Asia/Pacific Region and Table AOP II-1: Requirements and Capacity Assessment in International Aerodromes in the Asia and Pacific Regions of APAC ANP Volume I and Volume II.

1A.6 Improvement was seen in CRV implementation with two new States/Administrations who joined CRV, namely Malaysia and Papua New Guinea, compared to 2020. Besides, one more State implemented ADS-B compared to 2020.

1A.7 Thus, States were invited to continue their efforts on complying with the Beijing Declaration Commitments in a timely manner and by the target year 2022. ICAO encouraged States to ensure the submission of correct data to the Regional Office for effective compliance monitoring.

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Agenda Item 1B: Follow-up on the Outcome of APANPIRG/31 Meeting

Review of the Action Taken by the ANC and the Council on the Report of APANPIRG/31 and RASG-APAC/10 Meetings (WP/03)

1B.1 The Meeting was presented with the outcome of the review by the ANC and the Council of the Report of the Thirty-first Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/31) and the Report of the Tenth Meeting of the Regional Aviation Safety Group Asia and Pacific (RASG-APAC/10) (AN-WP/9487) and the relevant actions taken. It was noted that the Commission identified APAC Effective Implementation (EI) score (63.9 per cent) was below the global average of 68.6 per cent in 2020. The Commission informed the Council that the EI score of Pacific Small Islands Developing States (PSIDS) remains significantly challenging with low participation in the PIRG and RASG activities. It was also noted that the development of National Aviation Safety Plans (NASPs) is slow. The Commission informed the Council that that there is low interest in the region to establish a Regional Accident and Incident Authority.

1B.2 The Council noted with concern that two APAC States now have significant safety concerns (SSCs), namely Bhutan and Pakistan. It was noted that progress related to the removal of the SSCs is slow. The Council was informed that APAC States were facing difficulties in certifying military aerodromes used for international operations. With regards to GRF, it was noted that not all States and aerodrome operators would be ready for the transition to the new reporting format by the applicability date of 4 November 2021.

1B.3 The Commission noted that certain military aerodromes in States are undertaking limited civil international operations and the certification of such aerodromes by civil aviation authorities may prove to be difficult, therefore an alternative safety oversight framework may be appropriate in consideration of the low level of civil international operations at such aerodromes. The meeting was informed that Doc 9774 Manual of certification of aerodromes would be updated and contain guidance related to certification on military aerodromes used for international operations.

Status of Implementation of APANPIRG/31 Conclusions and Decisions (WP/04)

1B.4 The Meeting reviewed the actions taken by ICAO and the progress made on the APANPIRG/31 Conclusions and Decisions.

1B.5 The Meeting noted that actions on 17 Conclusions and 3 Decisions had been taken to close/complete, which resulted in 100 % completion of the planned action. The updated status on implementation of APANPIRG/31 Conclusions and Decisions provided in **Appendix A** to the Report on Agenda Item 1B.

Status of Implementation of Outstanding APANPIRG Conclusions and Decisions (WP/05)

1B.6 The Meeting reviewed the action taken by ICAO and progress made on the APANPIRG Outstanding Conclusions and Decisions up to its 30th Meeting.

1B.7 APANPIRG noted that out of the 3 outstanding Conclusions up to APANPIRG/30 [C28/19, C30/13 and C30/14], the follow-up actions taken by ICAO on Conclusions C30/13 and C30/14 had been completed. Action on Conclusion 28/19 was still in progress and remained open.

1B.8 The updated status on outstanding Conclusions up to APANPIRG/30 provided in **Appendix B** to the Report on Agenda Item 1B.

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Agenda Item 1C: ICAO APAC COVID-19 Contingency and Recovery Planning Group (ACCRPG) Activities

ICAO APAC COVID-19 Contingency and Recovery Planning Group (ACCRPG) Activities (WP/06)

1C.1 The Meeting noted that ten (10) online plenary meetings of the ACCRPG had been convened since June 2020. The Meeting also noted that, to follow the CART Recommendations and guidance structure, ACCRPG established three technical sub-groups: (1) aviation safety-related measures sub-group (SAF/SG), (2) aviation public health-related measures sub-group (PH/SG) and (3) aviation security- and facilitation-related measures sub-group (AVSEC-FAL/SG), and convened more than thirty (30) online technical meetings supporting the work of the ACCRPG. Furthermore ICAO APAC Office had convened two online meetings on COVID-19-related ATM Operations and Contingency Coordination, which also informed the ACCRPG on the crucial need to coordinate efforts on international aviation recovery with ATM capacity.

1C.2 Further to the two progress reports delivered by ACCRPG which discussed in APANPIRG/31 on total 16 recommendations related to the CART Phase I and II , ICAO APAC Office convened the Fourth COVID-19 Information Sharing Session with APAC DGCAs online on 6 July 2021, and the Co-chairs of ACCRPG presented the first ACCRPG Annual Report to APAC DGCAs, including proposed revisions to the ACCRPG terms of reference, and additional recommendations related to the CART III on the migration from COVID-19 Contingency Related Differences (CCRD) to the ICAO's Targeted Exemptions System (TES) for the most important and urgent segments of States' Industry.

1C.3 The Meeting noted that to address the challenges faced by States in implementing the CART Recommendations and guidance, ICAO established the COVID-19 Response and Recovery Implementation Centre (CRRIC) website. Maintaining engagement in sharing up-to-date information in the CRRIC continues to be a significant challenge for States. In addition, removing impediments to aviation recovery and strengthening public confidence in air travel, especially the successful roll-out of the Public Health Corridors (PHCs) as recommended by CART in establishing the enhanced collaboration necessary between civil aviation and public health authorities was identified to be challenging to States as well.

1C.4 ACCRPG identified the need to promote the establishment by States of PHCs and to encourage States to implement ICAO PHC iPack. ACCRPG would keep monitoring and adjusting assistance to DGCAs, and would focus on helping States to safely resume international travel through best facilitation practices. ACCRPG would keep informing its outcomes in various forums including RASG-APAC, APANPIRG, RASCF, CAPSCA-AP.

1C.5 The meeting agreed to encourage States to continue to participate directly in the meetings of the ACCRPG and its sub-groups and nominate States' Focal Points to the ICAO APAC Office, and report up-to-date progress on the implementation of the CART Recommendations and guidance through the CRRIC.

Outcomes of the High-Level Conference on COVID-19 (HLCC 2021) – Safety Stream (WP/16)

1C.6 The Meeting was informed of the overview of the recommendations of the HLCC-2021 under the Safety Stream, relevant to the RASG-APAC and APANPIRG Work Programme. The HLCC recommendations could be found in the Yellow Cover Report, available on the ICAO website, at https://www.icao.int/Meetings/HLCC2021/Pages/yellow-cover-report.aspx.

1C.7 The HLCC 2021 made 147 recommendations under the Safety Stream on matters related to its agenda. Most of the recommendations consist of two parts: a) calls for action addressed directly to States, with some also addressed to international organizations; and b) calls for action by ICAO.

1C.8 The Safety Stream noted the interest for the Planning and Implementation Regional Groups (PIRGs) and Regional Aviation Safety Groups (RASGs) to include the management of COVID-19 impact in their agenda and work programmes, to support a safe recovery.

1C.9 The Safety Stream recommended States to develop and implement their National Aviation Safety Plan (NASP) and provide the most recent version of their NASP for posting on the ICAO GASP public website. ICAO would submit a global report regarding the development of NASPs at the 41st Session of the Assembly.

1C.10 The Safety Stream discussed and highlighted the importance of strengthening Regional Safety Oversight Organizations (RSOOs), Regional Accident and Incident Investigation Organizations (RAIOs), and other regional cooperation mechanisms by providing them with the necessary resources to ensure sustainability, as well as encouraging these organizations to actively participate in the RSOO Cooperative Platform (RSOO CP); the Global Aviation Safety Oversight System (GASOS); and the coordination of assistance activities under the Aviation Safety Implementation Assistance Partnership (ASIAP).

1C.11 As recovery is critical to the economic, social and connectivity of the Pacific Island States, the Safety Stream recognized the importance of increased assistance and continued support for the Pacific Island States and the Pacific Aviation Safety Office (PASO) to ensure a safe, secure, resilient and sustainable aviation system. The Safety Stream noted the massive impact of COVID-19 on the Pacific Island States and the restart and recovery of the aviation sector. It also noted that ICAO should work closely with PASO and its Member States by providing support and assistance to ensure the viability of the region's economic and social well-being through the sustainability of the commercial aviation sector. To maintain public confidence in the aviation system, the Safety Stream emphasized that effective implementation of the ICAO Council Aviation Recovery Task Force (CART) Recommendations, technical assistance and guidance are critical in enabling the Pacific Island States to recover from the effects of the COVID-19 pandemic.

1C.12 The Safety Stream also agreed on the need for ICAO to promote the proposed model of collaboration between States and industry to establish protocols into the work of the PIRGs and RASGs, to support global aviation safety.

1C.13 The meeting noted the Ministerial Declaration on "One Vision for Aviation Recovery, Resilience and Sustainability beyond the Global Pandemic" reviewed and adopted by ministers and deputy ministers at the Ministerial Plenary (Closing) on 22 October 2021. The Declaration was published on the conference website at: https://www.icao.int/Meetings/HLCC2021/Pages/ministerial-plenary.aspx.

Economics during COVID Recovery (WP/07)

1C.14 Presented by IATA the paper discussed the continuing financial challenges confronted by airlines whilst the world began to emerge from the disruption caused by the COVID-19 pandemic. Without international operations, ANSPs had lost a majority of their revenue, which led to funding reliance from Governments, and some might seek to increase their charges in order to recoup lost revenue in a short timeframe. Some States invoked charges and taxes, such as administrative fees for flight approvals, contradicting to the ICAO Policies on Charges for Airports and Air Navigation Services.

1C.15 Reminded of the Conclusion *APANPIRG/31/10: Review of National Air Navigation Plans (NANPs)* for service provision review that could support reduction for ANSP cost-base, the paper invited the meeting to provide updates on their NANP review progress. IATA reminded States that IATA remains available and eager to assist in the review process.

1C.16 The *ICAO Doc. 9161 Manual on Air Navigation Service Economics* provides practical guidance to States and air navigation services providers to assist in the efficient management of air navigation services and in implementing ICAO's policies on charges for airports and air navigation Services as set out in Article 15 of the Convention on International Civil Aviation (Doc 7300). ICAO recognizes that all States are fully within their rights to recover, through charges, the costs incurred in the provision of airport and air navigation facilities and services; however, the substance of this principle is in fact that a State should not charge solely for granting an authorization for a flight to operate into, out of or over its territory.

1C.17 Charging unnecessary fees and taxes, or increasing ANS charges before airlines could re-establish scheduled flights, would result in a slower recovery from COVID-19 and ultimately mean less ANS and other revenue.

1C.18 The Secretariat informed the meeting that the CART Recommendation -10 is for Member States to consider appropriate extraordinary emergency measures to support financial viability to maintain an adequate level of operations including a transparent approach consistent with ICAO's policies during the pandemic. Ministerial Declaration of the High-level Conference on COVID-19, confirmed the importance of support provided for the aviation sector, including economic and financial support, to sustain operations and ensure the provisions of essential services while safeguarding fair competition and equal opportunities.

1C.19 ICAO issued "Guidance on Economic and Financial Measures to mitigate the impact of the Coronavirus outbreak on Aviation" in December 2020 and had introduced Key Principles of State Economic and Financial matters. Two such Principles are "Transparency and consultation" and "Striking appropriate balance among all stakeholders". The underlying principle of this guidance had already been captured in APANPIRG Conclusion 31/10, which had been referred to in this paper. It mentioned that States should include airspace user consultation to determine post COVID-19 service provision levels. Therefore States should pay due attention to the above APANPIRG Conclusion.

1C.20 "ICAO Guidance on Economic and Financial Measures" issued in December 2020 can be accessed at: https://www.icao.int/sustainability/Pages/Economic-and-financial-measures.aspx.

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Agenda Item 1D: Aviation Safety and RASG-APAC Activities

Updates on RASG-APAC/10 and RASG-APAC/11 Meeting Outcomes (WP/08)

1D.1 The Meeting reviewed the updates on the Tenth and Eleventh Meetings of the Regional Aviation Safety Group – Asia and Pacific Regions (RASG-APAC). RASG-APAC/10 was held on 17-18 December 2020 after the APANPIRG/31 meeting and RASG-APAC/11 was held on 25-26 November 2021, right before the APANPIRG/32 meeting. RASG-APAC/11 meetings adopted eight Decisions and two Conclusions, with its final report awaiting approval at the time of APANPIRG/32 meeting. RASG-APAC/11 also reviewed and proposed closure of the eight Decisions and two Conclusions adopted in RASG-APAC/10. The Meeting noted the outcomes that were summarized in the **Attachment A** to **WP/08**.

1D.2 The Meeting also noted RASG-APAC/11 approved new Work Programme for 2021/2022. Coordination with APANPIRG and its relevant sub-groups was an item featured. The status of 2020/2021 Work Programme and approved 2021/2022 RASG-APAC Work Programme were provided in the **Attachments B & C** to **WP/08**.

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Agenda Item 2: Global and Inter Regional Activities

Nil.

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Agenda Item 3: Performance Framework for Regional Air Navigation Planning and Implementation

3.0 Regional and National Performance Framework

Nil.

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Agenda Item 3: Performance Framework for Regional Air Navigation Planning and Implementation

3.1 AOP

Report on the Fifth Meeting of AOP Sub Group (WP/09)

History of the Meeting

3.1.1 The Fifth Meeting of the Aerodrome Operations and Planning Sub Group (AOP/SG/5) was held from 29 June – 2 July 2021 as a video teleconference.

3.1.2 Based on the outcome of discussions, AOP/SG/5 adopted 6 Conclusions and 3 Decisions that were of a technical or purely operational nature. AOP/SG/5 also formulated 1 Draft Conclusion and 1 Draft Decision for further consideration by APANPIRG/32. The full report of AOP/SG/5 is available at the following URL: https://www.icao.int/APAC/Meetings/Pages/2021-AOP-SG5.aspx.

Amendment of Asia/Pacific Air Navigation Plan (ANP) Volume I, Table AOP I-1 and ANP Volume II, Table AOP II-1

3.1.3 A template of the Proposal for the Amendment of the APAC ANP Volume I and II could be accessed at https://www.icao.int/APAC/Pages/APAC-eANP.aspx.

3.1.4 States and Administrations were reminded of the following items when preparing the Proposal for Amendment of Table AOP II-1 of APAC ANP Volume II:

a) The required level of protection expressed by means of an aerodrome rescue and firefighting (RFF) category number, determined in accordance with Annex 14, Volume I, 9.2, would be provided under column 2.

b) Changes in the level of protection normally available at an aerodrome for RFF would not be detailed in this Table, but shall be notified to the appropriate air traffic services unit and aeronautical information services units, in accordance with Annex 14, Volume I, 2.11.3 and 2.11.4. Further guidance was available in ICAO Doc 9137 Airport Services Manual, Part 1 – Rescue and Firefighting, Chapter 16.

c) The aerodrome reference code (RC) selected for aerodrome planning purposes in accordance with Annex 14, Volume I, 1.6 would be provided under column 3.

d) The critical design aircraft selected for determining RC, RFF category and pavement strength would be provided under column 6. Only one critical aircraft type would be shown if it was used to determine all three elements. Otherwise, different critical aircraft types would need to be shown for different elements.

3.1.5 APANPIRG/32 noted that as of 14 November 2021 there were 266 aerodromes used for international operations listed in Asia/Pacific Region ANP Volume I. However, the number of international aerodromes used for international operations in Asia/Pacific Region had reached to 353 based on information gather from Doc 7910 (Location Indicator), States Aeronautical Information Publication (AIP), CAA Websites and ICAO Missions.

3.1.6 APANPIRG/32 recalled Conclusion AOP/SG/3-1 and urged concerned States to provide information related to international aerodromes to update *Table AOP I -1: International Aerodromes required in the Asia/Pacific Regions* and *Table AOP II – 1: Requirements and Capacity Assessment in International Aerodromes in the Asia and Pacific Regions* of Asia Pacific Air Navigation Plans Volume I and Volume II.

Report of the Sixth Meeting of the Asia Pacific Airport Collaborative Decision Making Task Force (APA-CDM/TF/6)

3.1.7 AOP/SG/5 had reviewed the Report of the Sixth Meeting of the Asia Pacific Airport Collaborative Decision Making Task Force (APA-CDM/TF/6) held as a video teleconference from 28 to 30 April 2021. The report of the Task Force meeting can be accessed at https://www.icao.int/APAC/Meetings/Pages/2021-APA-CDM-TF6.aspx.

3.1.8 APANPIRG/32 noted that AOP/SG/5 had adopted 3 (Three) Conclusions relating to A-CDM matters, as proposed by APA-CDM/TF/6:

Conclusion AOP/SG/5-1: A-CDM Frequently Asked Questions (FAQs)

That:

1. the Frequently Asked Questions (FAQs) on A-CDM at **Appendix B to the AOP/SG/5 Report** be uploaded to the ICAO Asia/Pacific Regional Office Website for reference; and

2. the document be updated when and as required to include new FAQs and answers.

Conclusion AOP/SG/5-2: Framework for Monitoring the Implementation of A-CDM

That, the survey questionnaire at **Appendix C and Appendix D to the AOP/SG/5 Report** be uploaded to the ICAO Asia/Pacific Regional Office website for use by States for self-assessment of their A-CDM implementation projects and to report the progress of A-CDM implementation to APAC Office in the format provided in **Appendix D**.

Conclusion AOP/SG/5-3: Amendment to APAC A-CDM Implementation Plan

That, the Asia Pacific A-CDM Implementation Plan, Second Edition, 2021, at **Appendix E to the AOP/SG/5 Report** be made available on the ICAO Asia/Pacific Regional Office Website for reference by States/Administrations.

3.1.9 APANPIRG/32 also noted that above mentioned documents were made available on the ICAO Asia/Pacific Regional Office eDocuments web-page: https://www.icao.int/APAC/Pages/eDocs.aspx under AGA heading.

3.1.10 Noting that the Asia Pacific Airport Collaborative Decision Making Task Force had achieved its objectives and accomplished the most of the tasks assigned under its Terms of Reference, APANPIRG/32 adopted the following Decision formulated by APA-CDM/TF/6 and supported by AOP/SG/5 and ATM/SG/9:

<table>
<tr><td colspan="3">Decision APANPIRG/32/1 (AOP/SG/5-4): Dissolution of the APA-CDM/TF</td></tr>
<tr><td colspan="2">What: that:
a) the Airport Collaborative Decision Making Task Force (APA-CDM/TF), having completed most of the tasks assigned under its Terms of Reference, be dissolved, and any further Asia/Pacific Regional work in the A-CDM field (including Task List in Appendix A to the AOP/SG/5 Report) be undertaken by the Air Traffic Flow Management Steering Group (ATFM/SG); and

b) A-CDM Experts nominated by States and International Organisations are encouraged to attend the ATFM/SG Meetings.</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: To dissolve the APA-CDM/TF and merge with the ATFM/SG so that further coordination on matters related to A-CDM implementation and the integration and interoperability of A-CDM with ATFM and with other systems be undertaken by ATFM/SG.</td><td colspan="2">Follow-up: ☒Required from States</td></tr>
<tr><td>When: 3 Dec-21</td><td colspan="2">Status: Adopted by PIRG</td></tr>
<tr><td colspan="3">Who: ☒Sub groups ☐APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other:</td></tr>
</table>

Report of the Third Meeting of the Asia/Pacific Wildlife Hazard Management Working Group (AP–WHM WG/3)

3.1.11 APANPIRG/32 noted that Australian Aviation Wildlife Hazard Group (AAWHG) had supported ICAO APAC in conducting Webinar on Wildlife Hazard Management on 23 September 2020 and 18 May 2021. Webinars on "Reporting and Recording Data on Wildlife Strikes" and "Wildlife Safety Risk Assessment" were also delivered on 20 July and 14 September 2021, respectively.

3.1.12 APANPIRG/32 also noted that the AOP/SG/5 had adopted 2 (Two) Conclusions formulated by the AP-WHM/WG/3:

Conclusion AOP/SG/5-5: Asia Pacific Guidance for Establishment of a National Procedure for Recording and Reporting Wildlife Strikes to Aircraft

That, Asia Pacific Guidance for Establishment of a National Procedure for Recording and Reporting Wildlife Strikes to Aircraft provided in **Appendix G to the AOP/SG/5 Report** be published on ICAO APAC Website.

Conclusion AOP/SG/5-6: Asia/Pacific Guidance for Evaluation of Aerodrome Wildlife Hazard Management Programme (AWHMP)

That, Asia/Pacific Guidance for Evaluation of Aerodrome Wildlife Hazard Management Programme (AWHMP) provided in **Appendix H to the AOP/SG/5 Report** be published on ICAO APAC Website.

3.1.13 APANPIRG/32 further noted that the above mentioned documents were made available on the ICAO Asia/Pacific Regional Office eDocuments web-page: https://www.icao.int/APAC/Pages/eDocs.aspx under AGA heading.

3.1.14 Noting supports for the proposed extension of AP-WHM/WG until September 2023 by Australia, India, Philippines, Nepal and WBA, and no objection received from other Members at AP-WHM/WG/3 Meeting, AOP/SG/5 Meeting had adopted the following Decision formulated by the AP-WHM/WG/3:

Decision AOP/SG/5-7: TOR of AP-WHM /WG

That, the Terms of Reference of the Asia/Pacific Wildlife Hazard Management Working Group be amended as in **Appendix I to the AOP/SG/5 Report.**

Report of the Third Meeting of Asia/Pacific Aerodrome Assistance Working Group (AP-AA/WG/3)

3.1.15 AOP/SG/5 had noted that the AP-AA/WG/3 had developed the following generic documents:

a) Generic Aerodrome Certification Specific Operating Regulations;

b) Generic Organization Structure of the Aerodrome Regulatory Unit;

c) Generic Aerodrome Inspector Handbook;

d) Generic Document for Training Program and Training Plan for Aerodrome Inspectors;

e) Generic Surveillance Programme at Aerodromes; and

f) Generic Aerodrome Manual.

3.1.16 APANPIRG/32 noted that the AOP/SG/5 had adopted the following Conclusion formulated by AP-AA/WG/3:

Conclusion AOP/SG/5-8: Generic Documents related to Aerodrome Certification

That, the generic documents in **Appendix K, L, M, N, O** and **P to the AOP/SG/5 Report** be made available on the ICAO APAC Office Website for the reference by States in the APAC Regions.

3.1.17 The above mentioned documents were made available on the ICAO Asia/Pacific Regional Office eDocuments web-page: https://www.icao.int/APAC/Pages/eDocs.aspx under AGA heading.

3.1.18 Noting supports for the proposed extension of AP-AA/WG until September 2023 by DPR Korea, India, Nepal and Philippines, and no objection had been received from other Members at AP-AA/WG/3, AOP/SG/5 adopted the following Decision formulated by AP-AA/WG/3:

Decision AOP/SG/5-9: TOR of AP-AA/WG

That, the Terms of Reference of the Asia/Pacific Aerodrome Assistance Working Group be amended as in **Appendix R to the AOP/SG/5 Report.**

Report of the Second Meeting of the Asia/Pacific Aerodrome Design and Operations Task Force (AP-ADO/TF/2)

3.1.19 AOP/SG/5 had noted that the AP-ADO/TF had started developing the preliminary draft on the *Regional Guidance for the Design and Operation of Altiports* including: (i) Table of Content; (ii) Determination of Runway Length for Altiports; (iii) Sample Runway Profile for Altiports; and (iv) Obstacles Limitation Surface (OLS) for Altiports.

3.1.20 Recognizing the need to allow additional time to complete the tasks assigned to the Task Force, as well as to provide flexibility in the mode of meetings and also to amend the name of "Asia/Pacific Seamless ATM Plan", as it had been renamed to "Asia/Pacific Seamless ANS Plan" with version 3.0 in November 2019, and to make some minor editorial changes in the TOR of AP-ADO/TF, AOP/SG/5 adopted the following Decision formulated by AP-ADO/TF/2:

Decision AOP/SG/5-10: TOR of AP-ADO/TF

That, the Terms of Reference of the Asia/Pacific Aerodrome Design and Operations Task Force be amended as in **Appendix T to the AOP/SG/5 Report.**

Implementation of Requirements for Certification of Aerodromes in the Asia Pacific Region

Status on Certification of Aerodromes in Asia Pacific States

3.1.21 In June 2021, AOP/SG/5 had noted that approximately 11% of aerodromes used for international operations (38 out of 342 International Aerodromes) in Asia and Pacific Regions had yet to be certified.

3.1.22 APANPIRG/32 noted that some States had certified their aerodromes without full compliance with ICAO requirements on aerodrome certification process. Those States had been recommended to recertify their aerodromes in full compliance with those ICAO requirements.

3.1.23 APANPIRG/32 noted that on 16 July 2021 Japan provided satisfactory evidences for the certification of all military aerodromes used for international operations and listed them in AIP AD 1.5.

3.1.24 APANPIRG/32 also noted that as of 14 November 2021, there were **266** international aerodromes listed in Asia/Pacific Region ANP Volume I. The total number of international aerodromes used for international operations in Asia/Pacific Region had increased and reached to **353** based on information gathered from Doc 7910 (Location Indicator), States' Aeronautical Information Publications (AIPs), CAA / Airport Websites, flight tracking data and ICAO Missions. **319** out of **353** aerodromes used for international operations were certified aerodromes.

Status of Certification of Aerodromes in AIP

3.1.25 APANPIRG/32 noted a number of States / Administrations that have yet to publish the status of certification of aerodromes in AIP AD 1.5.

3.1.26 APANPIRG/32 further noted that Fiji, Lao PDR, Japan, Pakistan and Philippines provided satisfactory evidences on the promulgation of the information on the status of certification of aerodromes in their AIP. An updated summary was shown in Table 3.1 below:

States	North Asia (5 States & 2 SARs)	South East Asia (11 States)	South Asia (8 States)	Pacific (15 States & 8 OTs)
No aerodromes listed in AD 1.5/ AD 1.5 missing in AIP	--	1) Brunei Darussalam 2) Timor Leste	1) Afghanistan	1) American Samoa (US) 2) Cook Is. 3) Guam (US) 4) Kiribati 5) Nauru 6) Niue (NZ) 7) N. Mariana Is. (US) 8) Samoa 9) Tonga 10) Tuvalu 11) Vanuatu
Some but not all aerodromes listed in AD 1.5	1) China	1) Malaysia 2) Viet Nam	1) India	--
Status listed but not under AD 1.5	--	--	--	1) New Zealand
AIP cannot be located	--	--	--	1) Marshall Is. 2) Micronesia (Federated States of) 3) Palau 4) Solomon Is.
Total	**1 State**	**4 States**	**2 States**	**16 States / OTs**

Table 3.1 – Status of AIP AD 1.5 in Sub Regions of Asia/Pacific Region

3.1.27 APANPIRG/32 noted that APAC States and their aerodrome operators that had yet to certify aerodromes used for international operations to take an effective action on the 55th DGCA Action Item 55/42. In addition, APANPIRG/32 urged States to provide periodic updates on the progress of the certification of aerodromes and AIP AD 1.5 to the ICAO APAC Office.

ICAO Universal Safety Oversight Audit Programme (USOAP) and AGA Findings

3.1.28 APANPIRG/32 noted that the States/ Administrations in the APAC Region required more efforts to meet the 75% EI target by 2022 as set forth in the ICAO *Global Aviation Safety Plan (GASP) 2020-2022* (Doc 10004).

3.1.29 APANPIRG/32 noted that APAC States to arrange necessary resources to recruit, train and retain qualified and experienced technical staff to effectively perform safety oversight of aerodromes and approach respective COSCAPs, Pacific Aviation Safety Office (PASO) or ICAO APAC Office if State(s) require assistance in USOAP CMA.

USOAP CMA Protocol Questions – 2020 Edition and State Safety Programme Implementation Assessments (SSPIAs)

3.1.30 APANPIRG/32 noted that APAC States to review the 2020 edition of USOAP CMA PQs and update their responses in PQ Self-Assessment and to note the criteria for the prioritization of SSPIAs.

Enhanced Global Reporting Format for Assessing and Reporting Runway Surface Conditions (GRF)

3.1.31 AOP/SG/5 had recalled Conclusion APANPIRG/31/5 and urged States / Administrations to submit GRF Implementation Action Plan to ICAO APAC Office, if they had yet to do so, and provide periodic updates (at least monthly basis, at the end of each month) on actual implementation of GRF Action Items (Milestones) in accordance with GRF Implementation Action Plan developed by States until full implementation of the GRF.

3.1.32 APANPIRG/32 noted ICAO publication providing global guidance on GRF, such as, Circular 355 *Assessment, Measurement and Reporting of Runway Surface Conditions* and the *Aeroplane Performance Manual* (Doc 10064) available through ICAO Secure Portal at https://portal.icao.int/ICAO-NET/Pages/default.aspx. Additional guidance addressing specific aspects of the GRF, developed by ICAO's EUR office for global use could be found at: EUR Doc.041_SNOWTAM_Guidance_V1.1_December_2020_EN.pdf. A flyer providing additional information, clarification and 'best practice' on ATIS available at: ATIS Flyer_V1.0.pdf.

3.1.33 APANPIRG/32 noted that at AOP/SG/5 the Secretariat had demonstrated the GRF implementation monitoring tool and map developed based on GRF Implementation Action Plan and actual implementation status provided by States through the Regional Office.

3.1.34 In order to reflect the actual progress towards the GRF implementation, a periodic update by APAC States/Administration on actual implementation of the GRF Action Plan/Milestones was required. As implementation of GRF by all concerned stakeholders envisaged an enhancement of runway safety, e.g., reduction in runway excursions in future, and considering that only 14 APAC States/Administrations had implemented GRF on 4 November 2021 (GRF applicability date), APANPIRG/32 adopted the following Conclusion formulated by AOP/SG/5:

Conclusion APANPIRG/32/2 (AOP/SG/5-11): GRF Implementation Monitoring and Status	
That, Asia Pacific States/Administrations are urged to: 1) submit GRF Implementation Action Plan to ICAO APAC Office, if they have yet to do so (Conclusion APANPIRG/31/5 refers); 2) provide to ICAO APAC Office a periodic status update (at least monthly basis, at the end of each month) on actual implementation of GRF Action Items (Milestones) in accordance with GRF Implementation Action Plan developed by States until its full implementation; and 3) support ICAO portal on GRF implementation monitoring and status, including maps and charts, to be made available in ICAO Public Website.	**Expected impact:** ☒ Political / Global ☐ Economic ☐ Environmental ☐ Inter -Regional ☒ Ops/Technical

Why: For periodic update of GRF implementation status on ICAO portal and transparency.	Follow-up: ☒Required from States
When: 3 Dec. 2021	**Status:** Adopted by PIRG
Who: ☒Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other	

3.1.35 APANPIRG/32 also noted that 28 States submitted their GRF Implementation Action Plan to APAC Office, 18 States/Administrations provided status update in response to ICAO APAC *State Letter Ref.: AN 3/3 – AP168/21 (AGA)* dated 20 October 2021 and 14 States implemented GRF on 4 November 2021. The status on the implementation of the GRF depicted on the map developed by ICAO and provided on ICAO Website at https://www.icao.int/safety/Pages/GRF.aspx.

3.1.36 APANPIRG/32 further noted that two webinar on GRF Implementation were conducted on 30 August 2021 and 24 September 2021, one with the support from ICAO FTF, ACI, IFALPA, IFAIMA and IFATCA and another one with the support from Japan Civil Aviation Bureau.

3.1.37 APANPIRG/32 noted that at AOP/SG/5 the Secretariat had reminded the meeting that the GRF being a human-centric methodology with the runway assessment performed by trained aerodrome operations staff, it was not mandatory for airports to invest in dedicated tools or equipment. However, the GRF and its global deployment in November 2021 would provide a baseline for the development of systems that may in the future augment, even replace, human observations. Attachment to Chapter 2, Part II of PANS-Aerodromes would be helpful for guidance in this respect.

3.1.38 IATA supported the ***Conclusion APANPIRG/32/02 (AOP/SG/5-11): GRF Implementation Monitoring and Status*** and informed the meeting that fragmented implementation of GRF worldwide posed problems for the airlines. IATA encouraged States/Administrations to submit information to provide airlines with a fuller picture to enhance safety.

Runway Safety Team and Runway Safety Go-Team

3.1.39 AOP/SG/5 had noted that as of 18 June 2021, out of 342 aerodromes used for international operations in Asia Pacific Regions, only 95 aerodromes had participated in ICAO RST Survey.

3.1.40 AOP/SG/5 had recalled "Conclusion APANPIRG/31/6: Runway Safety Team" and urged States / Administrations to take actions on runway safety team (RST) establishment and participation in ICAO RST Survey at:
https://www.icao.int/safety/RunwaySafety/Pages/Runway%20Safety%20Team%20Register.aspx.

3.1.41 The 2020 edition of USOAP CMA Protocol Questions (PQs) had been made available through USOAP CMA online framework. It was noted that RST establishment had been included in a new AGA PQ.

3.1.42 ICAO RS Go-Team Methodology posted on ICAO Website at the following URL: https://www.icao.int/safety/RunwaySafety/Pages/Documents%20and%20Toolkits.aspx provided the detailed information on RS Go-Team.

3.1.43 States and Administrations in need of assistance in the areas of runway safety were urged to request for Runway Safety Go-Team Missions through ICAO APAC Office and/or its corresponding COSCAPs and PASO Office.

Airport Autonomous Transport System at Hong Kong International Airport

3.1.44 At AOP/SG/5 Hong Kong, China had updated the development and plans to adopt driverless transportation in Hong Kong International Airport (HKIA) and shared HKIA's experience in putting driverless technology for baggage conveyance into live operations through a multi-phased and collaborative approach, as well as ongoing plans in expanding the technology's application to cargo conveyance and airside staff shuttle services. It had also envisioned the applications of autonomous buses for passenger conveyance in the vicinity of HKIA subject to driverless technology advancement and local regulatory framework.

Application of Digital Tower and Surveillance Technology for Apron Efficiency at Hong Kong International Airport

3.1.45 Leveraging optical sensors installed at the HKIA and an Augmented Visual Presentation integrated with essential flight information and real-time operational data, the Digital Apron and Tower Management System being developed jointly by Hong Kong Civil Aviation Department and Airport Authority Hong Kong marked an aim to enhance safety and operational efficiency at airfield, apron and tower for supporting HKIA's Interim Two-Runway System operation in 2022 and Three-Runway System operation in 2024.

Draft Regional Guidelines for Design and Operation of Plateau Airports

3.1.46 At AOP/SG/5 China had shared its experience in the design, construction and operation of plateau airports, discussed the typical instance of the plateau airports and put forward suggestions for further improvement of the design and operation of plateau restricted airports.

Status of Air Navigation Deficiencies in AOP Field

3.1.47 AOP/SG/5 reviewed the list of Air Navigation Deficiencies in the AOP field endorsed by APANPIRG/31. Fiji, Japan, Lao PDR, Malaysia, Myanmar, Nepal, Pakistan, Philippines, Thailand, Timor-Leste and Viet Nam provided updates on their air navigation deficiencies in the AOP field.

3.1.48 At AOP/SG/5 the Secretariat had reminded States / Administrations to provide written correspondences to ICAO APAC Office with evidences on corrective action taken before APANPIRG/32.

3.1.49 Post AOP/SG/5, on 16 July 2021 Japan provided satisfactory evidences for the certification of all military aerodromes used for international operations and listed them in AIP AD 1.5. Lao PDR and Fiji provided satisfactory evidences on publication of status of certification in AIP AD 1.5 on 1 September 2021 and 10 November 2021, respectively.

3.1.50 The List of Air Navigation Deficiencies in AOP Field placed at **Appendix B to the Report on Agenda Item 4.**

ICAO Committee on Aviation Environmental Protection (CAEP), Working Group 2 (WG2) – Current work on Airports and Operations

3.1.51 APANPIRG/32 noted that the Secretariat presented an overview of the current environmental work of ICAO on airports and operations, focusing on Green Airports, including the work of the Committee on Aviation and Environmental Protection (CAEP) Working Group 2.

3.1.52 In anticipating the work progress of ICAO long term global aspirational goal for international aviation to be presented in ICAO Assembly 2022, ACI had recently made a pledge on

Long Term Carbon Goal, which was: *"ACI member airports at a global level commit to reach Net Zero Carbon emissions by 2050 and urge governments to provide the necessary support in this endeavour."*

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Agenda Item 3: Performance Framework for Regional Air Navigation Planning and Implementation

3.2: ATM

ATM/SG/9 Outcomes (WP10)

3.2.1 The Ninth Meeting of the Air Traffic Management Sub-Group (ATM/SG/9) of the Asia Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) was held by Video Teleconference (VTC) from the ICAO Asia and Pacific Regional Office, Bangkok, Thailand.

3.2.2 The meeting was attended by 292 registered participants from 27 States, two Special Administrative Regions of China and six International and Air Traffic Management-related organizations, including Afghanistan, Australia, Bangladesh, Bhutan, Brunei Darussalam, China, Hong Kong China, Macao China, Fiji, India, Indonesia, Japan, Kiribati, Lao People's Democratic Republic (PDR), Malaysia, Maldives, Mongolia, Myanmar, Nepal, New Zealand, Pakistan, Philippines, Republic of Korea (ROK), Singapore, Sri Lanka, Tajikistan, Thailand, USA, Viet Nam, CANSO, IATA, IFAIMA, IFALPA, IFATCA, and ICAO.

3.2.3 A total of 36 Working Papers (WPs), ten Information Papers (IPs), three flimsies and three presentations were considered by ATM/SG/9.

3.2.4 The full ATM/SG/9 meeting report and all associated papers and presentations are available on the ICAO Asia/Pacific (APAC) Regional Office website at:

https://www.icao.int/APAC/Meetings/Pages/2021-ATM-SG-9.aspx

FIT-Asia and RASMAG Outcomes

3.2.5 ICAO had provided a summary to ATM/SG/9 of the outcomes from the Eleventh Meeting of the FANS Interoperability Team-Asia (FIT-Asia/11, VTC, 23 to 26 August 2021) and the Twenty-Sixth Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/26, VTC, 20 to 23 September 2021).

3.2.6 ATM/SG/9 had been informed of RASMAG/26 discussion regarding verification of the Reduced Vertical Separation Minimum (RVSM) approval status of State aircraft (military and other government aircraft performing non-commercial, sovereign functions) and their relation to civil authorities. 'Rogue' aircraft (those that included 'W' in flight plans but did not have matching RVSM approval) that persistently remained on the list were mostly State aircraft. In order for the rogue State aircraft to be removed from the list either the State aircraft's approval data had to be provided to the designated RMA, or the State aircraft operator had to stop using 'W' in item 10 of the ICAO flight plan.

3.2.7 ***Draft Conclusion RASMAG/26-3: RVSM Approvals Data and Filing of RVSM Indicator in Flight Plans of State Aircraft*** had been presented for endorsement, but was not endorsed by ATM/SG/9 which considered there would be considerable difficulty in sharing data on State aircraft outside the State.

Note: The States that expressed non-support of the Draft Conclusion at ATM/SG/9 were present at the RASMAG/26 meeting and had supported the Draft Conclusion at that time. The Draft Conclusion was presented for APANPIRG/32 consideration under Agenda Item 3.3.

Seamless ANS Plan and Monitoring Update

3.2.8 ATM/SG/9 had been informed of the current status of *Asia/Pacific Seamless Air Navigation Services (ANS) Plan* (formerly the Seamless ATM Plan) reporting, and the implementation progress of air navigation improvements in the APAC Region. Due to the lack of a current reporting system the ICAO Regional Office was not able to update the current implementation status; the reporting portal had not been updated to match the 6th Edition of GANP and the current Version 3.0 of the Seamless ANS Plan. Implementation status information provided in the paper was as of March 2019, and therefore unchanged since reported to ATM/SG/8 and APANPIRG/31 in 2020. The meeting was reminded of ***APANPIRG Conclusion 30/6 - ICAO HQ Support for Regional ANS Implementation***.

3.2.9 ATM/SG/9 had been reminded that implementation of the ten priority regional targets for Phase I of the Seamless ANS Plan (November 2015 to November 2019) had in general not been achieved. There were now 16 priority ASBU Block 0 and Block 1 and regional elements.

3.2.10 Information had been provided on the need for States to develop a National Air Navigation Plan (NANP) as detailed in Section 9 of the Seamless ANS Plan and included among the *specific regional requirements* of the Regional Air Navigation Plan (ANP) Vol II.

3.2.11 The following Draft Conclusion was proposed, introducing a NANP reporting form for use by States and APANPIRG to track NANP implementation progress.

Draft Conclusion ATM/SG/9-X: National Air Navigation Plan Reporting Form

That, the National Air Navigation Plan Reporting Form at ***ATM/SG/9 WP/5 Attachment A*** *be adopted, and uploaded to the ICAO Asia/Pacific Regional Office Website. States are urged to report the status of NANP at least once annually, by 31 January each year.*

3.2.12 China had not supported the Draft Conclusion. ATM/SG/9 was therefore unable to reach consensus on this proposal. The meeting was reminded that ANP Vol II placed a requirement on States to report their NANP implementation progress and the status of its applicable global and regional elements at least once each year[1].

Application of ATC Separation Standards

3.2.13 ICAO had presented ATM/SG/9 with data on surveyed ATC separation standards that were being applied within the APAC Region compared to the provisions in elements 7.34 and 7.35 of the *Asia/Pacific Seamless ANS Plan*. The response from APAC States and Administrations to the latest survey had been poor, with only 12 responses received (28%).

3.2.14 **Figures 1 and 2** illustrated the efficiency of ATC spacing between aircraft at the same level as it is theoretically being applied inbound at FIR Transfer of Control (TOC) points, and within FIRs, as at March 2021.

[1] Asia/Pacific Regional Air Navigation Plan Vol II Part I Section 3 – Specific Regional Requirements 3.1.

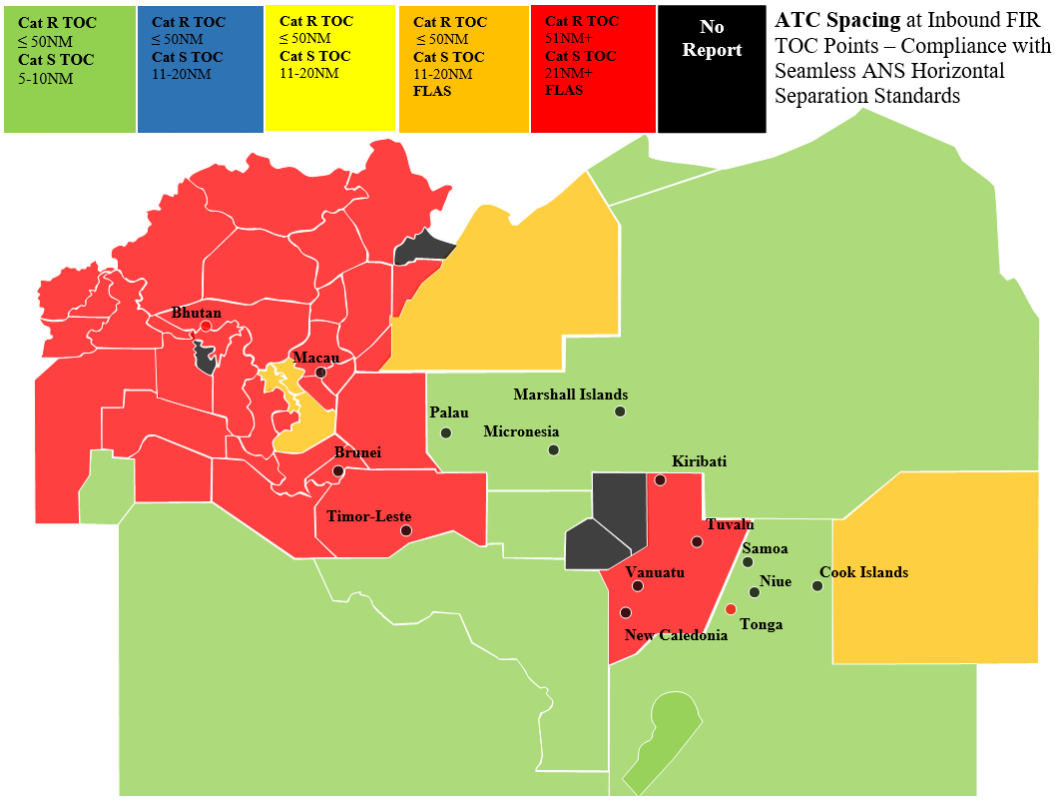

Figure 1: ANS Horizontal Spacing at Inbound FIR TOC points, March 2021

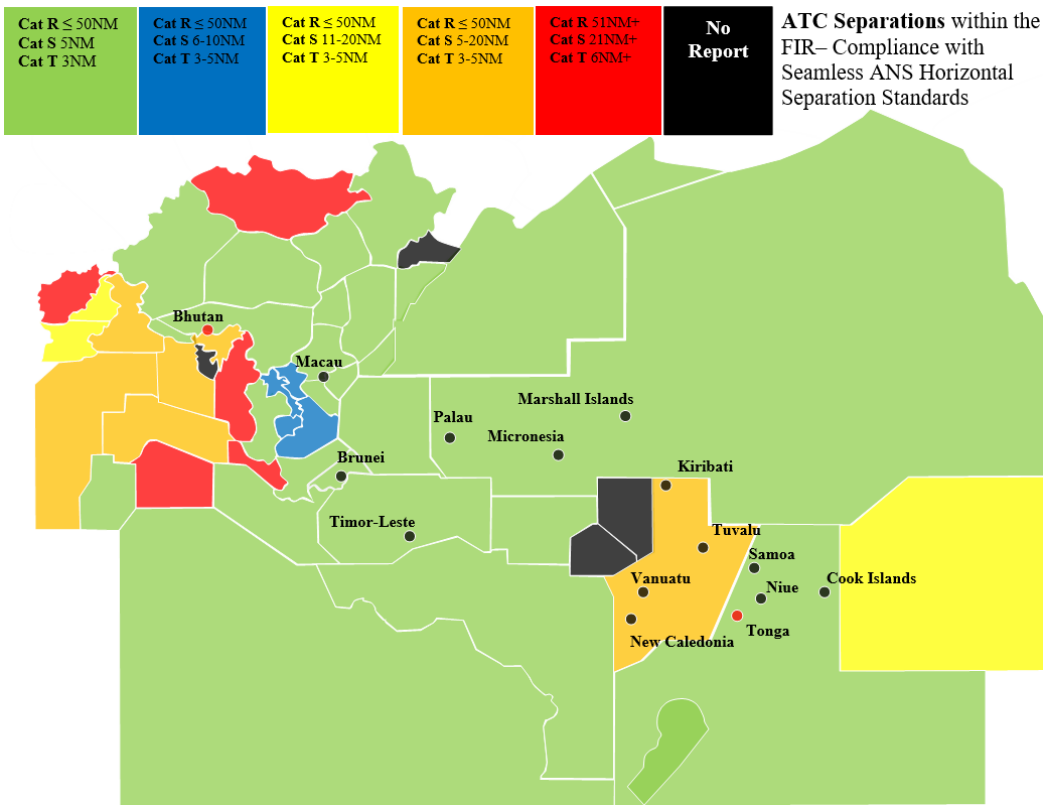

Figure 2: Horizontal Separation Minimums within the FIR, March 2021

3.2.15 To better analyse the separation minimums used in the APAC Region, the Regional Office, with valuable inputs from Thailand, had developed a new, replacement survey, also examining spacing applied at each TOC point in order to identify 'bottleneck' FIR Boundary TOC points in the region.

3.2.16 All Administrations were urged to review Letters of Agreement (LOAs) with adjacent FIR, both periodically and whenever there was an improvement in CNS/ATM systems, given the urgent need to ensure the most efficient ATM systems to support the fragile recovery of the aviation industry after severe financial losses during the COVID-19 pandemic.

3.2.17 The meeting agreed to the following Conclusion, drafted by SAIOACG/10 and SEACG/27:

<table>
<tr><td colspan="3">Conclusion APANPIRG/32-3: Implementation of Efficient ATS Horizontal Separations and Transfer of Control Aircraft Spacing</td></tr>
<tr><td colspan="2">What: That, given the global priority to support airlines' recovery from the unprecedented negative economic consequences of the COVID-19 pandemic and the suitable low traffic environment:
a) States/Administrations are strongly urged to review and update their National Air Navigation Plans (NANPs) to ensure that Air Navigation Service Providers (ANSPs) fully implement the horizontal separation and aircraft spacing elements in the Asia/Pacific Seamless ANS Plan V3.0; and
b) ICAO considers the need for seminars, workshops and other educational material to support this implementation.</td><td>Expected impact:
☒ Political / Global
☐ Inter-regional
☒ Economic
☒ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: Due to the non-implementation by many APAC State/Administrations of the expectations of the Asia/Pacific Seamless ANS Plan regarding horizontal separation and spacing standards, and to support airline recovery.</td><td colspan="2">Follow-up: ☒Required from States</td></tr>
<tr><td>When: 3-Dec-21</td><td colspan="2">Status: Adopted by PIRG</td></tr>
<tr><td colspan="3">Who: ☐Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☒Other: ICAO APAC RSO</td></tr>
</table>

Civil-Military Cooperation and Designation of Special Use Airspace

3.2.18 Indonesia had informed ATM/SG/9 of corrective action to eliminate its APANPIRG ATM and Airspace Deficiency recorded for the designation of a restricted area within international airspace. Deletion of the deficiency was recommended by ATM/SG/9, and discussed under APANPIRG/32 Agenda Item 4.

3.2.19 In discussing the designation of Special Use Airspace (SUA) in airspace over the high seas ATM/SG/9 had been informed of the standard in Annex 11 2.33.3, defining the identification of special use airspace.

Air Traffic Flow Management Steering Group Outcomes

3.2.20 The meeting was informed of the outcomes of the 11th Meeting of the Air Traffic Flow Management Steering Group (ATFM/SG/11), held by VTC from 02 to 06 August 2020.

3.2.21 The Sixth Meeting of the Asia/Pacific Airport Collaborative Decision-Making Task Force (APA-CDM/TF/6, 28 – 30 April 2021) had agreed to develop a regional model for the integration of ATFM and A-CDM. Noting the planned dissolution of the APA-CDM/TF the associated action items 5/2 and 5/3 from the APA-CDM/TF Task List had therefore been recorded in the ATFM/SG Task List pending APANPIRG agreement that ATFM/SG continue regional A-CDM work on the dissolution of APA-CDM/TF (discussed under APANPIRG/32 Agenda Item 3.1).

3.2.22 The meeting agreed to the following Decision:

Decision APANPIRG/32-4: Revised ATFM/SG Terms of Reference	
What: That, noting the dissolution of the APA-CDM/TF under ***Decision APANPIRG/32-1***, ongoing APAC regional A-CDM work be conducted by ATFM/SG, and the revised ATFM/SG Terms of Reference at **Appendix A to the Report on Agenda Item 3.2** be adopted.	Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
Why: To ensure the continuity of regional A-CDM activity conducted under APANPIRG	Follow-up: ☐Required from States
When: 3-Dec-21	Status: Adopted by PIRG
Who: ☒Sub groups ☒APAC States ☐ICAO APAC RO ☐ICAO HQ ☐Other:	

3.2.23 ATFM/SG/11 had been provided with an operational analysis and overview of westbound flights through the Kabul FIR associated with the Bay of Bengal Cooperative ATFM (BOBCAT) system for the two-year period from July 2019 to June 2021. **Figure 3** illustrated the BOBCAT slot request volume for the period.

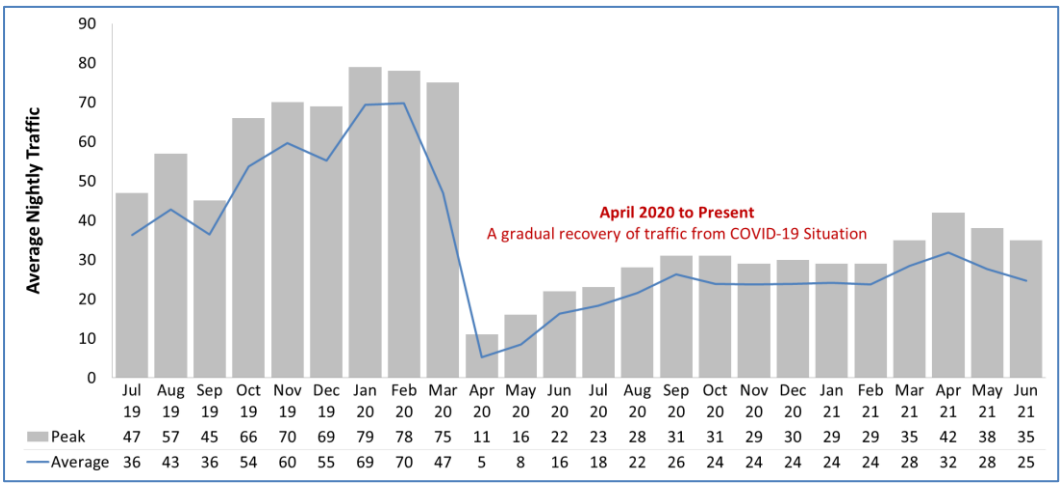

Figure 3: BOBCAT Traffic Demand from Slot Request: July 2019 – June 2021

3.2.24 The meeting was informed that due to the current ATM contingency situation in the Kabul FIR BOBCAT system operations had been temporarily suspended until such time as demand for overflights of Afghanistan resumed.

3.2.25 Updates were provided on progress in the Asia/Pacific Cross-Border Multi-Nodal ATFM Collaboration (AMNAC), and the ATFM collaboration that had been established with the East-Asia Air Traffic Management Coordination Group (EATMCG) using the multi-nodal ATFM Concept of Operations (CONOPS). Other collaborative efforts included those between Hong Kong China and Japan, Republic of Korea, and Taipei ACC.

3.2.26 Hong Kong China had conducted nine Ground Delay Programme (GDP) operational trials to provide continuous training and familiarization to Hong Kong ATFM personnel and regional partners. The trials were conducted once or twice per month since January 2021, distributing CTOTs to AMNAC and EATMCG ANSPs.

3.2.27 India's Central Air Traffic Flow Management System (C-ATFM) was planned to be implemented in three phases. The C-ATFM system would be provided with cross-border multi-nodal ATFM information exchange capability in accordance with the APAC AFTN/AMHS-based ICD for ATFM. C-ATFM was receiving Space-Based ADS-B surveillance data for oceanic airspace through the ATM automation system. Extended coverage would be considered to facilitate future long range ATFM. The distribution of ATFM measures for cross-border ATFM would commence in C-ATFM Phase III.

3.2.28 India had estimated that, following the significant impact of COVID-19 on traffic levels, traffic may recover to 70% of December 2019 levels by the end of 2021.

3.2.29 Japan and Republic of Korea had informed ATFM/SG/11 of flow management changes made to the 'AKARA Corridor'**.** **Table 1** summarized the changes in coordination and communications between China, Japan and Republic of Korea, according to new agreements replacing or revising the previous Letters of Agreement:

ATFM in the Corridor	Before	After (as of March 25 2021)
Coordination	China ↔ Japan ↔ ROK	China ↔ ROK ↔ Japan
Communication Network	Commercial line between Fukuoka ATMC and Shanghai ATCC	Commercial line between Shanghai ATCC and Daegu ATCC, between Daegu ATCC and Fukuoka ATMC

Table 1: Coordination and Communication in the AKARA Corridor (Incheon FIR)

3.2.30 ATFM/SG/11 had been updated on progress of the Northeast Asia Regional ATFM Harmonization Group (NARAHG), formed by China, Japan, and Republic of Korea. Information was provided on normal traffic volumes (2019), information exchange, data connection testing and ICD, the NARAHG CONOPS, the planned ATFM connection utilizing the APAC Common AeRonautical Virtual Private Network (CRV), the establishment of a task force for severe weather reroute coordination, and recent major activities.

3.2.31 A summary of the ATFM implementation status of APAC Administrations was provided, reported against the performance objectives of the Regional Framework for Collaborative ATFM. It was noted that COVID-19-pandemic-related disruption to ICAO meeting planning and associated APAC ANSP activities may have contributed to the lack of reporting in 2020 and 2021.

3.2.32 Based on reports received States were assessed as having Robust (90-100%), Marginal (70-89%) or Incomplete (0-69%) implementation. .

- India, Singapore, Thailand and USA were assessed as having Robust implementation.
- Australia, China, Hong Kong China, Japan, Indonesia, Pakistan and Republic of Korea were assessed as having Marginal implementation.

- Bangladesh, Cambodia, Macao China, Malaysia, Maldives, Mongolia, Myanmar, Nepal, New Caledonia, New Zealand, Papua New Guinea, Philippines and Viet Nam's implementation status were assessed as Incomplete.

3.2.33 The following APAC States had never provided an implementation status report, and their implementation status was recorded as Did Not Report:

- Afghanistan, Bhutan, Brunei Darussalam, Cook Islands, Fiji, France (French Polynesia), DPR Korea, Kiribati, Lao PDR, Marshall Islands, Micronesia, Nauru, Palau, Samoa, Solomon Islands, Sri Lanka, Timor-Leste, Tonga, Tuvalu.

Regional Air Navigation Plan Update

3.2.34 ICAO had presented ATM/SG/9 with an update on the ANP for the APAC Region. Noting that the previous ICAO Doc 9673 *Asia and Pacific Regions Regional Air Navigation Plan* did not provide a legal description of FIRs in the first place, it was important for States to understand that the process of checking, alignment and validation was crucial to provide a formal basis for their FIRs.

3.2.35 As FIRs were considerably more difficult to establish than Search and Rescue Regions (SRRs), the review of FIRs had been commenced first. ICAO anticipated that the SRR Table would be completed by October 2022, to be entered into the ANP by APANPIRG/33.

3.2.36 There were four areas affecting the resolution of 11 FIRs, each with a political dimension and therefore appropriately involving APANPIRG in terms of overseeing the process used to resolve issues. The four areas were detailed in **APANPIRG/32 WP/10 Attachments C to F.**

3.2.37 Regarding as-yet uncirculated PfAs for FIRs with coordinates the same as historical data, the meeting was informed that due to the requirement for Regional Air Navigation Agreement the PfAs submitted for adjacent FIRs must also be in alignment. This process was necessary to ensure that objections did not obstruct the process at the later crucial stage of reaching such agreement.

3.2.38 30 FIR PfAs had been approved by the President of the Council and the data incorporated in ANP Vol. I Table ATM I-1. Three FIR PfAs had been received by the ICAO Regional Office and were expected to be circulated shortly for ICAO HQ review. 12 FIR PfAs had been submitted to the Regional Office but required further clarification/justification with adjacent States. **Figure 4** showed the FIR review status in October 2021.

3.2.39 Further details of the ATM/SG/9 discussion of this matter and comments by States may be found in **APANPIRG/32 WP/10**

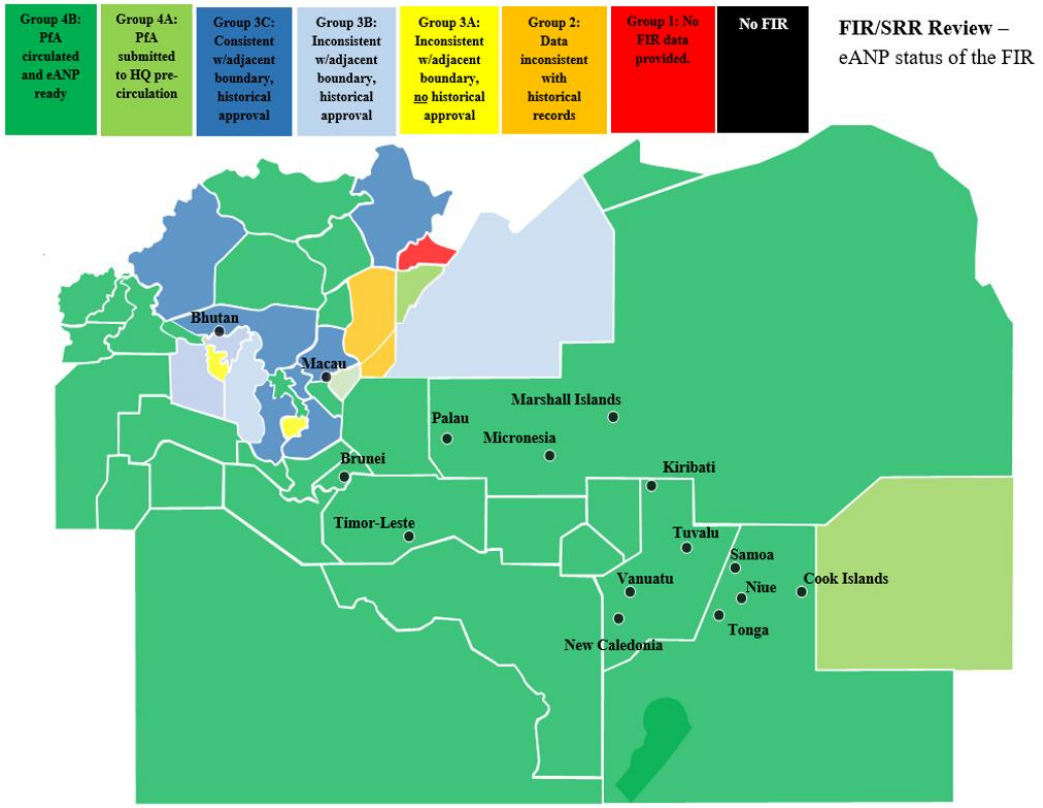

Figure 4: FIR Review Status, October 2021

3.2.40 The current status of SRR PfAs is reported in paragraphs 3.2.90 – 3.2.91.

Amendments to Annexes and PANS Relating to the Global Reporting Format for Runway Surface Conditions

3.2.41 ICAO had reminded ATM/SG/9 of the applicability, from 04 November 2021, of ICAO provisions in various Annexes and Procedures for Air Navigation Services (PANS) for the reporting of runway surface conditions using the Global Reporting Format (GRF), SNOWTAM and revised ATC phraseology. Further information on this topic is provided in paragraphs 3.2.99 and 3.2.100, and was also discussed under Agenda Item 3.1.

3.2.42 IATA informed the meeting that there were some States that would not implement the GRF and associated procedures, some States would implement in accordance with ICAO provisions, and some States would implement a different form of GRF and/or procedure. It was very important that the aerodrome user had clear information in this regard.

Implementation of Status of SID/STAR Phraseology

3.2.43 ICAO had informed ATM/SG/9 of the results of a survey of States on the implementation status of the Standard Instrument Departure/Standard Arrival Route (SID/STAR) phraseology changes published in Amendment 7 to ICAO Doc 4444 –PANS-ATM, applicable from 10 November 2016.

3.2.44 ATM/SG/9 was reminded of ***Conclusion ATM/SG/6-4: Asia/Pacific Regional SID/STAR Phraseology Implementation Strategy***.

3.2.45 15 Administrations had responded to a May 2021 survey:

Australia, Hong Kong China, French Polynesia, India, Indonesia, Japan, Nepal, Pakistan, Papua New Guinea, Philippines, Republic of Korea, Singapore, Sri Lanka, Thailand and USA.

3.2.46 Of the responding Administrations, 11 had implemented the phraseology, three had partially implemented, one had planned but not yet implemented. 29 Administrations did not respond.

SAIOACG and SEACG Outcomes

3.2.47 ATM/SG/9 had considered the key outcomes of the Combined Tenth Meeting of the South Asia/Indian Ocean ATM Coordination Group (SAIOACG/10) and Twenty-Seventh Meeting of the South East Asia ATS Coordination Group (SEACG/27), held from 29 March to 02 April 2021.

3.2.48 Noting the need to support airlines' recovery from the severe financial losses caused by the COVID-19 pandemic and the suitable low traffic environment SAIOACG/10 and SEACG/27 had developed ***Draft Conclusion SAIOACG/10 and SEACG/27-1: Implementation of Efficient ATS Horizontal Separations and Transfer of Control Aircraft Spacing***, as reported in paragraph 3.2.17.

3.2.49 SAIOACG/10 and SEACG/27 had discussed the results of the Future Meeting Modalities Survey conducted by the ICAO APAC Regional Sub-Office, which requested respondents to advise on the preferred modality and conduct of future SAIOACG and SEACG meetings.

3.2.50 The meeting agreed to the following Decision, drafted by SAIOACG/10 and SEACG/27 to ensure future meetings of these bodies were conducted more effectively and economically:

<table>
<tr><td colspan="3">Decision APANPIRG/32-5: Combining SAIOACG and SEACG Groups to form the South Asia, Indian Ocean and Southeast Asia ATM Coordination Group (SAIOSEACG)</td></tr>
<tr><td colspan="2">What: That, noting the:
1. large cross-over in work between the SAIOACG and SEACG, with about 90% of the papers being developed by the Secretariat and virtually the same content; and
2. resource challenges to States/Administrations in terms of participant's travel and attendance costs attending two separate meetings;
the two groups be combined to form the South Asia, Indian Ocean and Southeast Asia ATM Coordination Group (SAIOSEACG), with Terms of Reference as provided in Appendix B to the Report on Agenda Item 3.2.</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: To consolidate two meetings the which the majority of business is duplicated, thereby leading to better efficiencies for States and ICAO.</td><td colspan="2">Follow-up: ☐Required from States</td></tr>
<tr><td>When: 3-Dec-21</td><td colspan="2">Status: Adopted by PIRG</td></tr>
<tr><td colspan="3">Who: ☒Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☒Other: ICAO APAC RSO</td></tr>
</table>

ATS Route Catalogue

3.2.51 The ICAO APAC Regional Sub-Office had reviewed the Asia/Pacific Region ATS Route Catalogue, including correspondence with all concerned States/Administration and IATA requesting status updates on relevant route proposals. Feedback had been incorporated into the draft Asia/Pacific Region ATS Route Catalogue, which was reviewed by SAIOACG/10 and SEACG/27, and had been uploaded to the APAC website as Version 21.

3.2.52 Some cross-border airspace improvement projects were delayed, possibly due to a lack of validation tools to support the decision-making process. Feedback received by ICAO following a survey to identify validation methods and tools commonly used in the APAC region had led to the conclusion that the ICAO APAC Regional Sub-Office should conduct a webinar for States to share their knowledge and experiences and the benefits gained by using validation tools. The webinar was tentatively planned to be held in January 2022.

3.2.53 IATA had also presented its 2021 review of the Asia/Pacific ATS Route Catalogue, and requested States to urgently carry out a detailed review of routes in their area of responsibility for possible implementation, given the changed COVID-19 pandemic environment and expected 'new normal' for aviation operations. Priority routes for airlines were those that gave the most benefit to operations and the environment in terms of CO2 savings.

3.2.54 IATA had particularly stressed the importance of three routes identified in the review: Himalaya 02 (potential to save 19 to 25 minutes and assist in decongesting A599/Lashio), BOB 01 (to provide a more efficient connection of traffic from the south west Bay of Bengal to the Far East) and BOB 02 (providing more efficient connectivity over the Bay of Bengal and assisting the decongestion of several other ATS routes.).

3.2.55 Nepal had supported IATA's suggestion on the Himalaya 2 route as it was crucial to support the airline community under the circumstances of the COVID-19 pandemic, by contributing significant track-mile savings, and urged that all other stakeholders consider IATA's suggestion positively. China had stated that a new entry waypoint to the Kunming FIR to support Himalaya 02 was impossible. IATA had acknowledged China's position from a previous review, noting that was why an amendment to the proposal was now included and requested consideration again by all parties.

Implementation of Enhanced Wake Turbulence Separation at Hong Kong International Airport

3.2.56 ATM/SG/9 had been informed of a project initiated by Hong Kong China for the implementation of a revised wake turbulence separation scheme to improve the runway delivery rate at Hong Kong International Airport (HKIA). Considering the similarity of the scheme and the new ICAO wake turbulence separation scheme published during the period of the project, Hong Kong China had implemented the ICAO scheme on 05 November 2020.

3.2.57 Information was provided on the development of the HKIA project, collection and analysis of data, the project safety plan and local safety case, implementation plan and mitigating measures, operational experience and benefits, and stakeholders' collaboration.

3.2.58 Hong Kong China proposed that appropriate sessions should be arranged for the sharing of experience and lessons learnt with others to assist in project initiation. This was subsequently included in the ATM/SG Task List.

3.2.59 This project was also discussed separately under **APANPIRG/32 Agenda Item 3.2 WP/17**.

Consideration of FLAS Elimination in AKARA Corridor

3.2.60 Japan had presented to ATM/SG/9 updates of safety improvement, and a proposal for the elimination of the Flight Level Allocation Scheme (FLAS) in the AKARA – FUKUE Corridor airspace.

3.2.61 The FLAS operation in the AKARA corridor airspace was depicted in **Figure 5**.

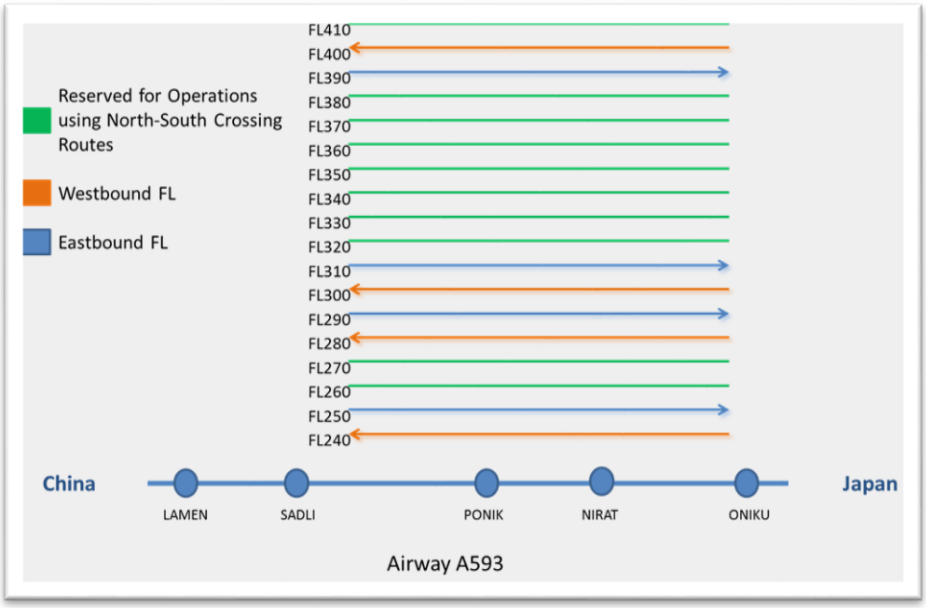

Figure 5: Flight Level Allocation Scheme (FLAS) in the AKARA Corridor airspace

3.2.62 ATM/SG/9 was informed of discussion at RASMAG/26 relating to Seamless ANS Plan element 7.35, and the discussion outcomes of the RASMAG/26 breakout session on the AKARA corridor airspace.

3.2.63 Republic of Korea stated that the consensus on 25 December 2020 was that Republic of Korea would consider Japan in ensuring fair and equitable use of optimum flight levels, the new single ATC unit at crossing points in the Incheon FIR was applying the increased use of non-FLAS flight levels, and that the FLAS issue should be discussed in a bilateral meeting.

3.2.64 While ICAO considered FLAS in Category S airspace should not be necessary, the current AKARA airspace project was the primary consideration. Completion of Phase 2 of that project should be the first priority, with the FLAS issue addressed separately and at a later time.

Activation of Danger Areas over High Seas for Prolonged Duration (WP/27)

3.2.65 ATM/SG/9 had discussed IATA concerns regarding continued prolonged hours of Danger Area activation over the high seas (over international waters outside territorial seas), and suggested there was a need to enhance processes for the management of such areas in line with the *as civil as possible, as military as necessary* principle of the ICAO Doc 10088 *Manual on Civil-Military Cooperation in Air Traffic Management*.

3.2.66 ATM/SG/9 was reminded that ICAO Doc 10066 PANS-Aeronautical Information Management (PANS-AIM) procedure required that NOTAMs for Danger Area activation shall be published for all affected FIRs with at least seven days' advance notice. The activation window should be the minimum needed to successfully complete the planned exercise/event. Japan supported the application of seven days' advance notice.

3.2.67 It was critical that, where any temporary Special Use Airspace (SUA) extended into other FIRs, NOTAMs were published by all FIRs, with the seven days' advance notice as was required in the PANS-AIM procedure.

3.2.68 In relation to the case study provided by IATA, one of the States concerned informed ATM/SG/9 that States may declare Danger Areas in high seas airspace, there was a standard operating procedure applied to reduce negative impacts, it was a sensitive matter, and the only issue was that it did not align with Annex 15 requirements. ICAO responded that the non-alignment with Annex 15 standard was a critical safety issue which had been discussed in multiple ICAO APAC meetings since March 2018 (SAIOACG/8), and was the subject of an APANPIRG Air Navigation Deficiency, agreed by APANPIRG/29 in September of that year and which had not yet been addressed by the State concerned.

3.2.69 ATM/SG/9 had agreed to the following technical Conclusion:

Conclusion ATM/SG/9-4: Management of Danger Areas situated over the High Seas

That, acknowledging that safe and sustainable aviation is the prime goal of all stakeholders, and that airspace is a very important shared resource, States are urged to:

1. *act in accordance with the ICAO DOC 10088 principle as civil as possible, as military as necessary; and refrain from prolonged activation of Danger Areas over the High Seas, particularly activations that are repetitive in nature and impact almost all useable flight levels within the given volume of airspace;*
2. *give due consideration to the requirements of other airspace users (e.g. air traffic density, flight levels, enroute weather factors) during the planning, promulgation and activation of Danger Areas;\establish robust co-ordination between civil and military authorities, as well as with neighboring FIRs; and*
3. *ensure all affected FIRs provide appropriate AIS (NOTAM) notification regarding activation of the Danger Area*

Airline Feedback to Airspace Closures and Contingency Response and the Importance of Contingency Planning

3.2.70 ATM/SG/9 was provided with airline feedback on recent interruptions to ATS in APAC FIRs, provided by IATA, emphasizing the importance of contingency planning for all States. ATM Contingency events in 2021 had served as good reminders for all States to have relevant, updated and practiced ATM contingency plans in place at all times, with clear agreements and instructions for their timely activation.

3.2.71 IATA provided information on the Yangon (Myanmar) FIR contingency response to the unavailability of ATC services from 08 to 16 February 2021, and on the current, ongoing contingency operations in the Kabul (Afghanistan) FIR that had commenced on 16 August 2021.

3.2.72 Feedback was provided on positive aspects of the contingency operations, challenges, and on the additional costs to airlines. Operational and safety challenges included limited contingency routes and flight levels, increased en-route holding, confusion as to applicable Traffic Information Broadcast by Aircraft (TIBA) frequencies, restricted communication with States, and confusing NOTAM management at the resumption of normal operations.

3.2.73 **Table 2** summarized additional costs to airlines avoiding the Kabul FIR:

Costs*	Time (mins)	Fuel (ton)	Distance (NM)	CO2 (ton)	Fuel (USD)
Max	120	13.7	825	206.1	10378
Min	5	0.5	26.8	51	2168
Ave	55	4	245	111	5574
Mean	39	3	109	96	4958
Median	47.5	3.8	71.5	92.6	5116.5
* columns are not always directly related to each other - they represent a range of individual figures provided for each category.					

Table 2: Summary of Additional Flight Costs – Avoidance of Kabul FIR

3.2.74 IATA feedback included a list of considerations for future contingency planning. IATA was available to coordinate international airline input into the development and review of plans.

Regional ATM Contingency Planning and Status Reporting

3.2.75 ICAO presented information on the *Asia/Pacific Regional ATM Contingency Plan* with regard to State reporting of implementation of its performance expectations, a brief outline of recent ATM contingency events in the APAC Region, and a proposal to conduct an update of the Regional contingency plan.

3.2.76 Implementation status was assessed as *robust* (90 – 100% of expectations implemented), *marginal* (70 – 89%) or *incomplete* (0 – 69%).

3.2.77 Only Indonesia, Singapore and United States were assessed as having robust implementation.

3.2.78 22 Administrations had <u>never</u> provided an implementation status report.

Afghanistan, Bhutan, Brunei Darussalam, China, Cook Islands, Fiji, France (French Polynesia), DPR Korea, India, Kiribati, Lao PDR, Marshall Islands, Micronesia, Nauru, New Zealand, Palau, Samoa, Solomon Islands, Timor Leste, Tonga, Tuvalu, Vanuatu, Maldives, Cambodia, Papua New Guinea, Sri Lanka, Bangladesh, New Caledonia, Nepal, Myanmar, Macao, China, Japan, Mongolia, Philippines, Thailand, Malaysia, Pakistan, Hong Kong, China, Republic of Korea, Viet nam, Australia, Singapore, United States, Indonesia

3.2.79 **Figure 6** illustrated the overall regional implementation status:

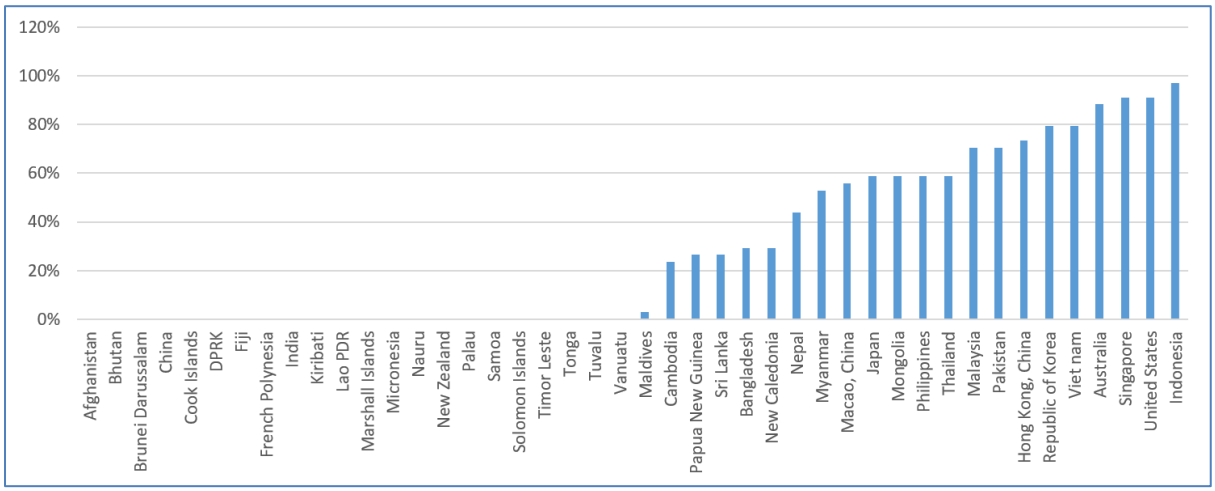

Figure 6: Regional ATM Contingency Plan – Overall Implementation Status

3.2.80 The meeting was reminded of COVID-19 pandemic-related contingency information, and the *APAC Regional Strategy for COVID-19-related ATM Contingency Recovery*.

3.2.81 Relevant States were invited to update their Contingency Coordination Team (CCT) details for the *Inter-Regional Afghanistan Contingency Arrangements* and the East Asia and North Pacific CCT.

3.2.82 ATM/SG/9 was provided with the ICAO APAC Regional Office summary of the Yangon FIR contingency operations of February 2021, including discussion of Annex 11 provisions and the formation of CCTs, the communications (or lack thereof) during the contingency operation, CCT bulletins, the validity, update and publication of the Myanmar Level 2 contingency plan, CCT teleconference, NOTAM management, operational impact and key issues to be considered among lessons learned.

3.2.83 A Regional Office summary of the current, ongoing ATM contingency operations in the Kabul FIR had also been provided to ATM/SG/9. Information provided included the sequence of events leading up to the withdrawal of all ATS and AIS on 16 August 2021 and the formation of the Kabul FIR CCT, current flight operations in the Kabul FIR, CCT bulletins and key issues for lessons learned.

3.2.84 The Asia/Pacific Region had experienced three major ATM contingency events in the last three years. Some lessons learned from the 2019 Pakistan airspace closure had been included in a 2019 update of the Regional ATM Contingency Plan. Lessons learned from the Yangon and Kabul FIRs' contingency operations would be included in a planned review of the Regional contingency plan, which would also include editorial corrections and amendments where necessary to ensure full alignment with Annex 11 provisions.

Refresher Training to Support Resumption of Traffic Demand

3.2.85 Noting the unprecedented disruption to global air travel and associated drastic and sustained drop in air traffic volume, Singapore's experience in the implementation of continuous and preparatory training for ATC readiness to handle post-COVID-19 traffic surges had been shared with ATM/SG/9.

3.2.86 Singapore had proposed that the experience of ANSPs be shared either through an update of the *Asia/Pacific Regional Strategy for COVID-19-related ATM Contingency Recovery*, or other platform as appropriate.

Asia/Pacific Search and Rescue Update

3.2.87 ATM/SG/9 had been provided with an update of Search and Rescue (SAR) matters for the Asia/Pacific Region, including outcomes from the Asia/Pacific SAR Working Group (APSAR/WG).

3.2.88 Information provided on global SAR developments included Autonomous Distress Tracking (ADT) implementation and the Location of Aircraft in Distress Repository (LADR), the status of the Cospas-Sarsat programme, air operators workshops, and the SAR operation following the crash of Sriwijaya Air flight SJ182 on 09 January 2021.

3.2.89 **Figure 7** illustrated the implementation status of the 41 elements of the Asia/Pacific Regional SAR Plan as at 04 May 2021. Only 10 APAC Administrations had reported *robust* implementation of 90% or more:

Australia, Hong Kong China, India, Indonesia, Japan, New Zealand, Republic of Korea, Singapore, USA and Viet Nam

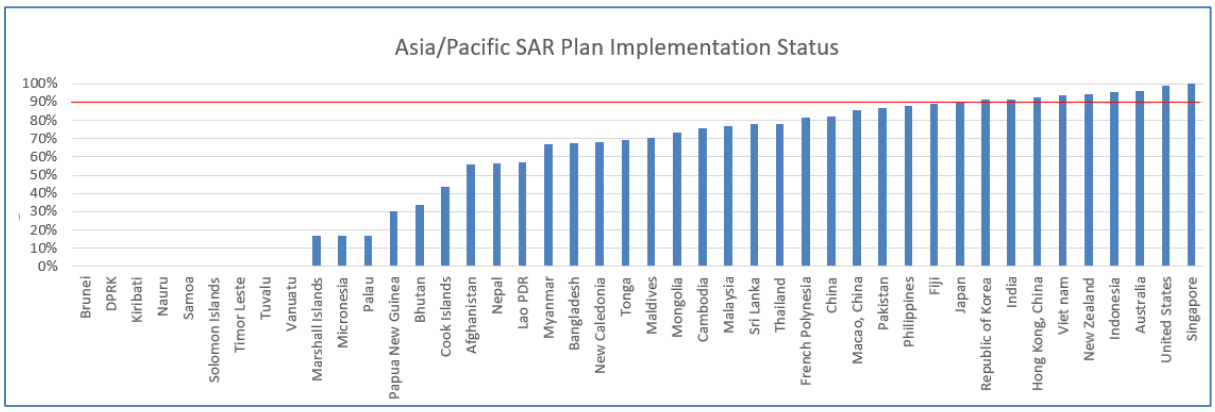

Figure 7: Asia/Pacific SAR Plan Implementation Status as at 04 May 2021

3.2.90 All other APAC Administrations had APANPIRG Air Navigation Deficiencies recorded in the field of SAR Capability, as further discussed in Agenda Item 4.

3.2.91 Regarding SRR verification, the following Administrations (21 of 42 in APAC) had submitted Proposals for Amendment (PfAs) to the Asia/Pacific Regional Air Navigation Plan (ANP) Volume I, which were pending circulation to ICAO Headquarters Secretariat for approval before circulation to all States:

Afghanistan, Australia, China, Fiji, French Polynesia, India, Indonesia, Lao PDR, Malaysia, Maldives, Mongolia, Nauru, Nepal, New Zealand, Pakistan, Papua New Guinea, Philippines, Singapore, Solomon Islands, Sri Lanka and USA.

3.2.92 **Figure 8** indicated the status of SRR verification as at 04 May 2021:

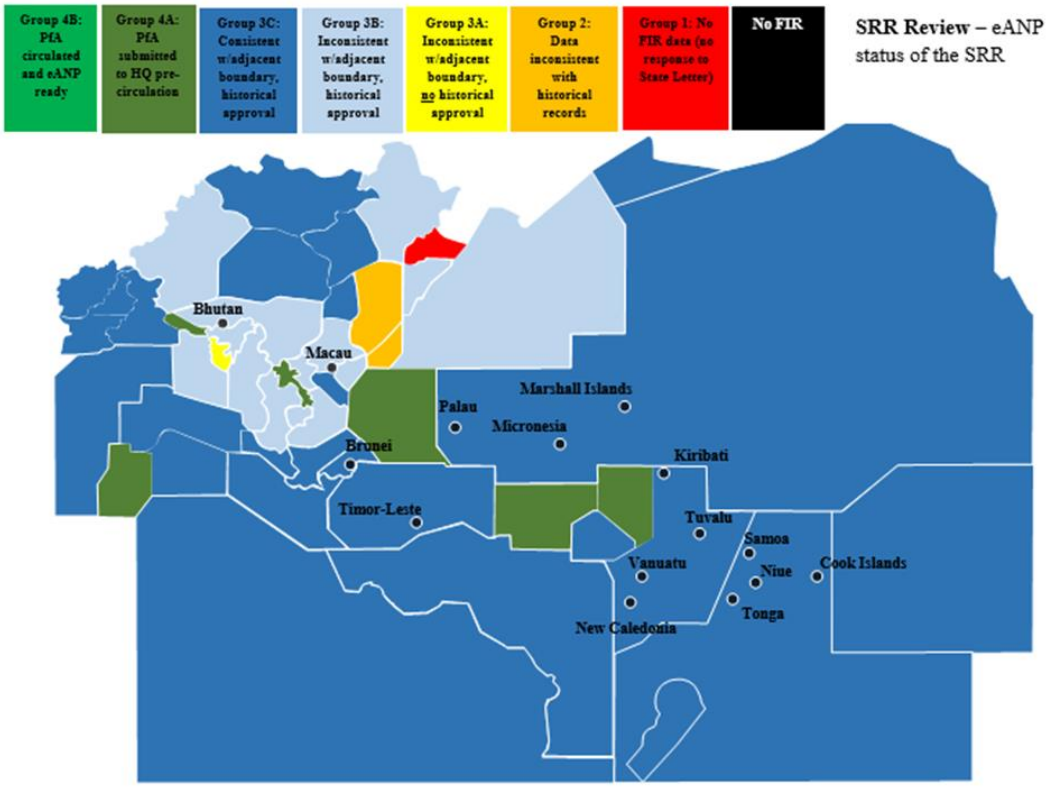

Figure 8: SRR Verification Status as at 04 May 2021

3.2.93 APSAR/WG was developing a template Memorandum of Understanding (MoU) between national SAR and Accident Investigation authorities for inclusion in the APAC SAR Plan, with a view to its later inclusion in the International Aeronautical and Maritime SAR (IAMSAR) Manual.

AIS – AIM Implementation Task Force Outcomes

3.2.94 ATM/SG/9 had discussed outcomes from the 16th Meeting of the AIS – AIM Implementation Task Force (AAITF/16, 07 to 11 June 2021).

3.2.95 10 APAC States had Deficiencies recorded for non-implementation of World Geodetic System 1984 (WGS-84), two for non-implementation of AIP Format, and 20 for non-implementation of AIS Quality Management System (QMS).

3.2.96 The meeting was again reminded of the ongoing, deep concern about poor quality management of aeronautical information in the APAC Region, and the apparent lack of organizational priority for this safety-critical obligation of all States. The criteria used by the Regional Office to determine whether an AIS QMS-related Deficiency may be recommended for deletion had been provided to ATM/SG/9.

3.2.97 An update was provided on the status of implementation of the performance expectations of the *APAC Regional Plan for Collaborative AIM*, which were expected to be implemented in in three phases: Phase I (immediately), Phase II (07 November 2019) and Phase III, (27 November 2025).

3.2.98 Japan and Singapore had reported implementation of all Phase I elements. Only Singapore reported implementation of all Phase II elements. **Figures 9 and 10** illustrated overall regional implementation of Phases I and II.

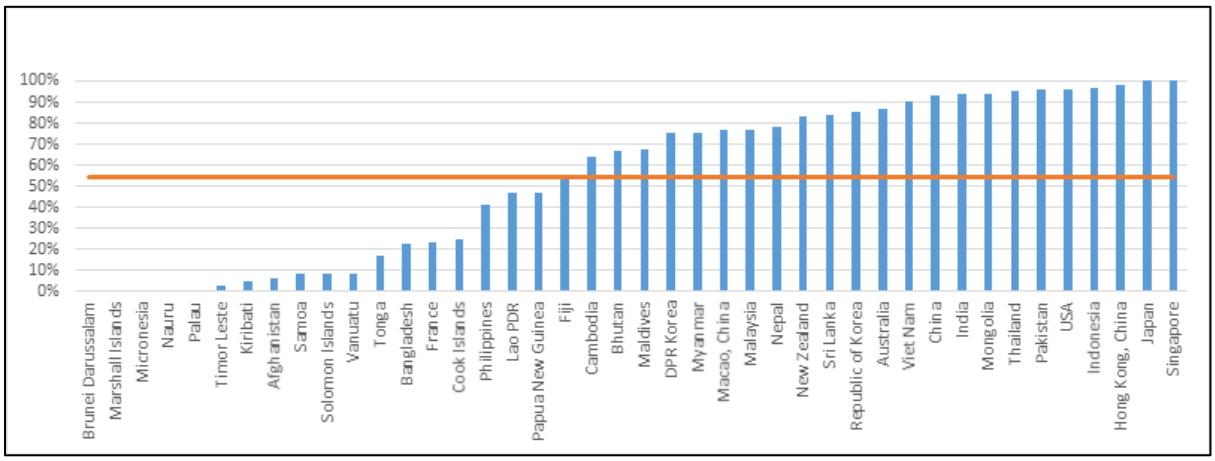

Figure 9: Regional Plan for Collaborative AIM - Phase I Implementation Progress (updated on 28 October, 2021)

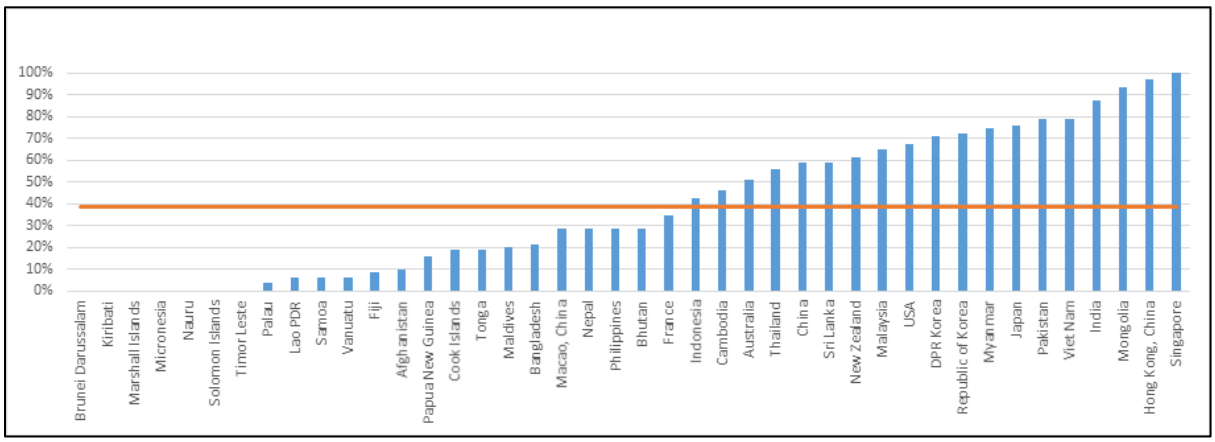

Figure 10: Regional Phase II Implementation Progress (updated on 28 October 2021)

3.2.99 AAITF/16 had discussed the proliferation of NOTAMs, using information provided by IFAIMA in collaboration with ICAO and referencing the ICAO Global Campaign on NOTAM Proliferation. **Figures 11 and 12** provided information on the total number of NOTAMs 'old' NOTAMs (more than three months' duration) and 'very old' NOTAMs (more than one year duration) issued by APAC NOTAM Offices (NOFs).

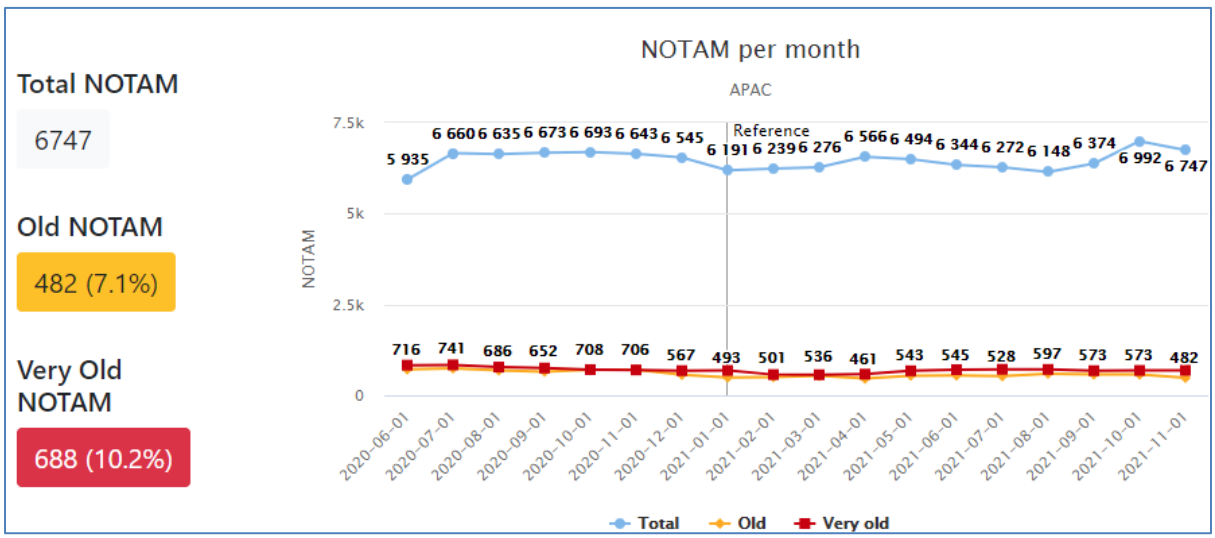

Figure 11: APAC NOTAM Statistics (Total, old and very old) – 01 November 2021
Source: ICAO NOTAMETER (https://www.icao.int/airnavigation/information-management/Pages/NOTAMeter.aspx

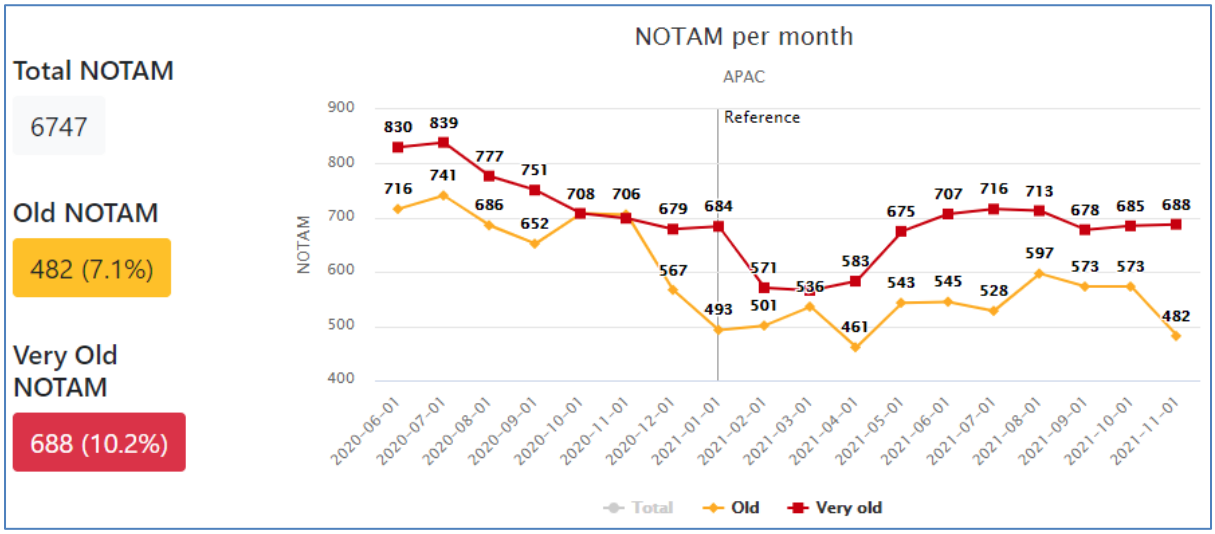

Figure 12: APAC NOTAM Statistics (old and very old) – 01 November 2021

3.2.100 ICAO reminded the meeting of SNOWTAM applicability and guidance, referring to ICAO State Letter 2020/73 which had postponed applicability of the Global Reporting Format (GRF) for runway surface conditions from 05 November 2020 to 04 November 2021. APAC regional guidance was available on the ICAO Asia/Pacific Regional Office eDocuments web-page.

3.2.101 Japan had provided an update to the APAC Operating Procedures for Aeronautical Dynamic Data (OPADD), which were periodically updated in alignment with EUROCONTROL OPADD updates. The EUROCONTROL OPADD Edition 4.1 responded to changed ICAO provisions relating to the GRF and the associated revision of SNOWTAM format. Noting that EUROCONTROL no longer provided a MS Word version of their OPADD updates, and did not agree to amendments for local adaptation, ATM/SG/9 had adopted the following technical Conclusion:

Conclusion ATM/SG/9-5: Update Asia/Pacific OPADD

That,

1. *the EUROCONTROL Operating Procedures for AIS Dynamic Data (OPADD) Edition 4.1 at **ATM/SG/9 WP/34 Attachment C** be adopted as the OPADD for the Asia/Pacific Region and uploaded to the Asia/Pacific Regional Office website;*
2. *the Asia/Pacific OPADD Edition 4.0 in Chapter 3 of the Guidance Manual for Aeronautical Information Services in the Asia/Pacific Region be replaced by an updated preface and a hyperlink to the uploaded document; and*
3. *States utilize the EUROCONTROL OPADD Edition 4.1 referenced in Chapter 3 of the Guidance Manual to update NOTAM systems and procedures.*

Implementation of Enhanced Wake Turbulence Separation at Hong Kong International Airport (WP/17)

3.2.102 The meeting was informed of a project initiated by Hong Kong, China for the implementation of an enhanced Wake Turbulence Separation (eWTS) scheme to further improve the runway delivery rate at Hong Kong International Airport HKIA. The initiative was supported by a strong business case, while maintaining the same level of safety. In their presentation, Hong Kong China stated that eWTS was a key ASBU module[2] of the Global Air Navigation Plan (GANP), and was closely related to the strategic objectives of ICAO, the APAC Seamless ANS Plan and the Beijing Declaration.

3.2.103 Information was provided on the development of the HKIA project, collection and analysis of data, the project plan and local safety case, implementation planning and mitigating measures, operational experience and benefits, and stakeholder collaboration. Project activities included collaboration with airport operator, airlines and the local meteorological authority, development of the safety plan and safety case, ATC simulator training/briefing, provision of decision support tools, and stakeholder engagement workshops. Benefits would include increased runway throughput and improved runway delivery rates utilizing existing airport infrastructure, reduced holding and flight times, and enhanced schedule reliability.

3.2.104 The meeting was invited to encourage APAC Administrations to share experience and lessons learned, with assistance from the ICAO APAC Regional Office, and to encourage other Administrations to consider formulating their early plan for implementation of eWTS to take advantage of the low traffic situation under the COVID-19 pandemic.

3.2.105 ICAO informed the meeting that eWTS was not identified among the 16 priorities (including priority ASBUs) of the Asia/Pacific Seamless ANS Plan. However, as also mentioned in WP/11, an ATM/SG/9 action item had been raised on information/experience sharing activities, in response to a similar WP presented by Hong Kong, China at that meeting. ICAO noted that the ATM/SG/9 action item concerned had been a compromise, reached after Hong Kong, China had declined to take a lead role in conducting a proposed workshop.

3.2.106 Republic of Korea and the APANPIRG Chair expressed their support for Hong Kong, China's proposal. Hong Kong China agreed to take a leading role in the proposed activity. ICAO informed the meeting that arrangements would be coordinated offline with Hong Kong China and other parties identified in the ATM/SG/9 action item (Japan, Republic of Korea).

Multi-Regional TBO Demonstration (IP/2)

3.2.107 Singapore provided information on the Multi-Regional Trajectory-Based Operations (MR TBO) demonstration, a collaborative effort between Japan, Singapore, Thailand, USA and Canada to better understand the TBO concept and its operational values, the capabilities required to support TBO.

Improvement in the Regulatory System and Emergency Mechanism of Search and Rescue of Civil Aircraft (IP/4)

3.2.108 China provided an update on the progress of SAR planning and corresponding mechanisms in China civil aviation. The information provided included an update on China's implementation of the performance expectations of the APAC Regional SAR Plan, which was further discussed under Agenda Item 4.

[2] ASBU modules WAKE-B2/1-7 (2025 – 2031), WAKE-B3/1-2 (2031 – 2037), WAKE-B4/1-2 (2037+)

Agenda Item 3: Performance Framework for Regional Air Navigation Planning and Implementation

3.3: RASMAG

RASMAG/26 Outcomes (WP11)

3.3.1 The Eleventh Meeting of the Future Air Navigation Services (FANS) Interoperability Team-Asia (FIT-Asia/11) was held by video teleconference from 23 to 26 August 2020.

3.3.2 The Twenty-Sixth Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/26) was held by video teleconference from 20 to 23 September 2021.

Note: airspace safety estimates are stated in terms of fatal accidents per flight hour (fapfh)

FIT-Asia/11 Meeting Outcomes

3.3.3 RASMAG/26 was informed that FIT-Asia/11 had discussed the need for adoption in the Asia/Pacific Region of a common FANS 1/A Controller-Pilot Data Link Communications (CPDLC) Latency Timer value of 300 seconds, as was currently being successfully trialled in the North Atlantic (NAT) Region. RASMAG/26 agreed to the following technical Conclusion:

Conclusion RASMAG/26-1: FANS1/A CPDLC Latency Timer Value

That, recognizing:

1. *the need for aircraft to provide an appropriate indication when the age of the time stamp of a received CPDLC message exceeds a defined value (latency timer value), in accordance with ICAO Doc 9869 PBCS Manual safety requirement SR-15;*
2. *a latency timer value of 300 seconds supports both RCP240 and RCP400 operations;*
3. *the need for a single, standardized global value; and*
4. *the trialling of a value of 300 seconds in the North Atlantic Region;*

States are urged to implement a latency timer value of 300 seconds on a trial basis and report outcomes to FIT-Asia.

3.3.4 China had presented the Asia/Pacific Region Combined PBCS Monitoring Report to FIT-Asia/11. The report highlighted consolidated performance data and issues associated with Automatic Dependent Surveillance - Contract (ADS-C) Actual Surveillance Performance (ASP) and CPDLC Actual Communications Performance (CPDLC) for the region.

3.3.5 Overall ASP for the region had met the 95% criterion of the Required Surveillance Performance 180 (RSP180) specification, but fell marginally below the 99.9% criterion[1]. Overall ACP for the region met the 95% criterion. ACP for most FIRs fell marginally below the 99.9% criterion, but several FIRs failed to meet it. In the first half of 2020 one FIR did not meet the 95% criterion for Actual Communications Technical Performance (ACTP) and two FIRs failed to meet the 99.9% criterion. In the second half of the year all reporting FIRs met the 95% criterion, but four did not meet the 99.9% criterion. Pilot Operator Response Time (PORT) performance requirements were not met by a number of aircraft operators.

[1] ASP Criteria: 95% of transactions completed within 90 seconds, 99.9% completed within 180 seconds

ACP Criteria: 95% of transactions completed within 180 seconds, 99.9% completed within 210 seconds

RASMAG/MAWG and RMACG Reports

3.3.6 The Eighth Monitoring Agencies Working Group (MAWG/8) was held by video teleconference from 01 to 04 February 2021. The Sixteenth Meeting of the Regional Monitoring Agencies (RMAs) Coordination Group (RMACG/16) was also held by video teleconference, from 14 to 25 June and 28 June to 02 July 2021.

3.3.7 RASMAG/26 had endorsed the new Minimum Monitoring Requirements proposed by RMACG/16 for applicability in the Asia/Pacific Region, and agreed to the following technical Conclusion.

Conclusion RASMAG/26-2: RVSM MMR Update

That, the Reduced Vertical Separation Minimum (RVSM) Minimum Monitoring Requirement (MMR) update at ***Appendix C to the RASMAG/26 Report*** *be utilized by Regional Monitoring Agencies (RMAs) and States as appropriate.*

AKARA Safety Improvement Update and Normalization of the AKARA Corridor

3.3.8 The Japan Airspace Safety Monitoring Agency (JASMA) provided an updates, progress and proposals of the safety improvement plan for the AKARA – FUKUE Corridor. Phase 1 of the improvement plan had been implemented on 25 March 2021 (**Figure 1**).

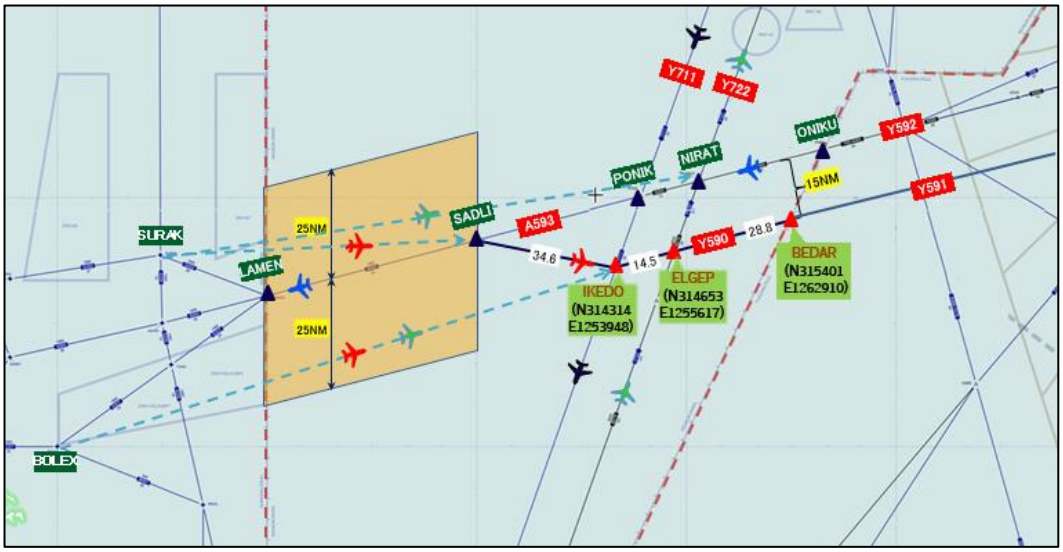

Figure 1: ATS route structure of AKARA-FUKUE Corridor Safety Improvement Plan Phase 1

3.3.9 All Air Traffic Control (ATC) responsibility for ATS route A593 between ONIKU and SADLI had been handed over to Incheon Area Control Centre (ACC). The meeting was informed that China and Republic of Korea were currently negotiating on Phase 2 implementation (implementation of a parallel route structure), and more time was needed to reach agreement.

3.3.10 A safety assessment of the AKARA – FUKUE corridor airspace conducted by JASMA and the Electronic Navigation Research Institute (ENRI), using fast-time simulation of traffic sample data (TSD) had shown an improvement of the technical risk estimate of the airspace from 15.6 x 10^{-9} prior to the Phase 1 changes, to 0.26 x 10^{-9} under Phase 1 with the existing Flight Level Allocation Scheme (FLAS) in place, to 0.12 x 10^{-9} in Phase 2 without FLAS.

3.3.11 Republic of Korea also provided information on the normalization progress of the AKARA – FUKUE Corridor.

3.3.12 As a safety measure by States concerned a new eastbound unidirectional ATS route (Y590/Y591) connecting Incheon FIR and Fukuoka FIR was established in the Corridor with a view to eliminating opposite passing traffic while keeping the existing ATS route A593 for westbound traffic only. This had also mitigated crossing traffic which had been frequent at the intersection of A593 and north/south routes Y711/Y722. The establishment of a single ATC unit at intersection points had facilitated easier altitude change and the immediate response as appropriate to abnormal situations such as weather deviation or emergency descent.

3.3.13 Incheon ACC and Shanghai ACC had signed a new Letter of Agreement (LoA) for the first time since 1983, and a Direct Speech Circuit (DSC) for ATC coordination between the two centres had been installed.

2020 Analyses for the Incheon FIR AKARA Corridor Interface with Shanghai/Fukuoka/Taipei FIRs

3.3.14 The Pacific Approvals Registry and Monitoring Organization (PARMO) had also provided an update of its analysis of AKARA corridor airspace using December 2020 TSD and reported Large Height Deviation (LHD) events in 2020, i.e. before the normalization of the AKARA corridor on 25 March 2021. The AKARA Corridor interface with Shanghai/Fukuoka/Taibei FIRs had been identified by RASMAG/20 (2015) as LHD Hot Spot B.

3.3.15 There were five reported LHDs in the AKARA airspace in 2020 (**Figure 2**), which was a decrease from the 29 reported LHDs in calendar year 2019. The observed decrease was expected as the likely result of COVID-19-related reduction in air travel.

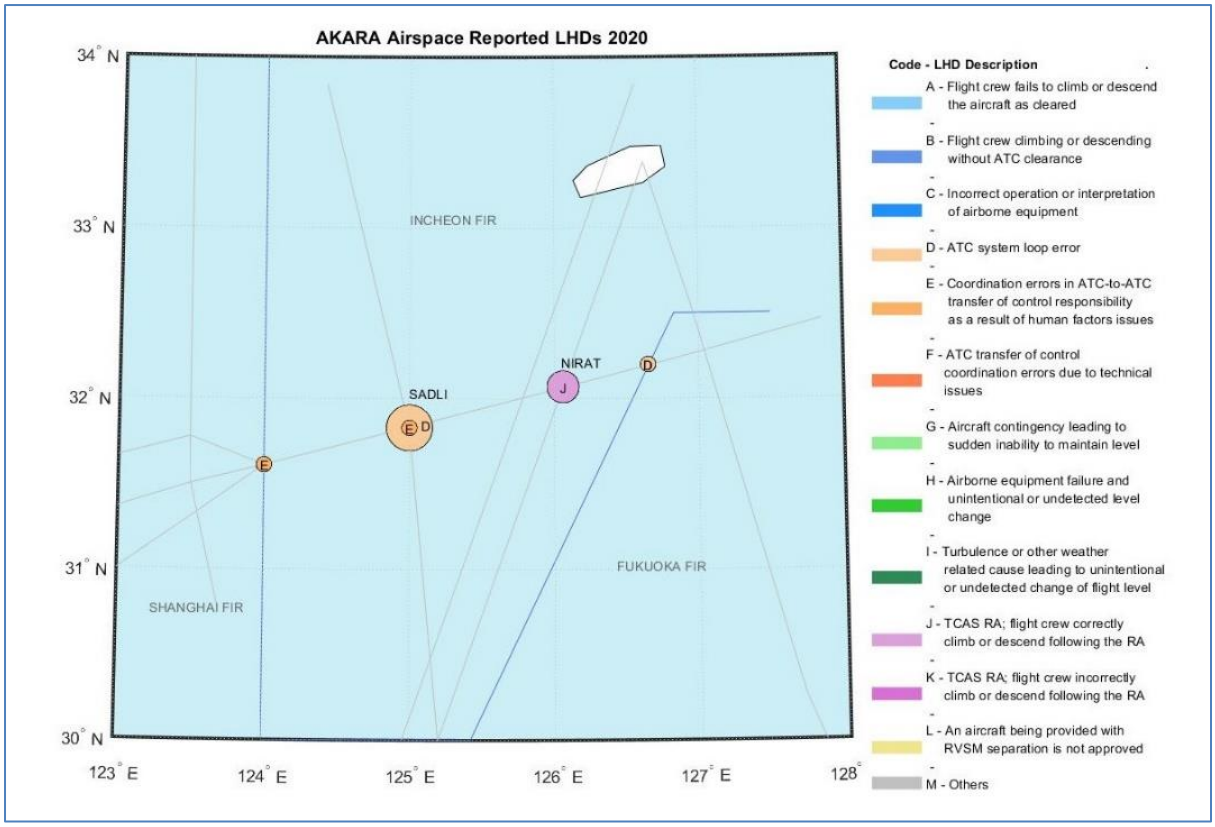

Figure 2: Location of reported LHDs in AKARA Corridor airspace - 2020

3.3.16 The 2020 vertical collision risk estimate was lower than the estimate in 2019. This was also likely to have been due to the reduction in air travel due the pandemic. The 2020 vertical technical risk estimate of **0.72×10^{-9}** met the Target Level of Safety (TLS) for vertical technical risk (2.5×10^{-9}). The overall vertical risk estimate of **45.1×10^{-9}** exceeded the overall vertical TLS of 5×10^{-9}.

3.3.17 Regarding a proposal that Hot Spot B be considered for deletion, RASMAG/26 had been reminded that usual practice was to retain the identification of hot spots for 2 years following the achievement of collision risk below the TLS. ICAO had also proposed that any consideration of removal of hot spots should take into account the current major reduction in traffic and its effect on safety risk calculations.

RVSM Risk Assessment in the Brisbane, Honiara, Melbourne, Nauru, Port Moresby, Jakarta and Ujung Pandang FIRs – 1 January 2020 to 31 December 2020

3.3.18 The Australia Airspace Monitoring Agency (AAMA) provided an airspace safety review of RVSM airspace risk within the Brisbane, Honiara, Melbourne, Nauru and Port Moresby FIRs. The technical, operational and weighted total risk (**0.017×10^{-9}**) all met the specified TLS.

3.3.19 The total vertical risk estimate for the Jakarta and Ujung Pandang FIRs was **0.181×10^{-9}**, which met TLS and reflected the significant decrease in flying hours and occupancy parameters.

China RMA Vertical Safety Report

3.3.20 The China Regional Monitoring Agency (China RMA) provided an RVSM safety report for nine Chinese FIRs (excluding Hong Kong and Taipei FIRs), and the Pyongyang FIR (Democratic People's Republic of Korea).

3.3.21 The 2020 RVSM risk estimates for the Beijing, Guangzhou, Kunming, Lanzhou, Pyongyang, Sanya, Shanghai, Shenyang, Urumqi and Wuhan FIRs indicated that the TLS had not been met, at **7.107×10^{-9}**. The risk estimate had resulted from 85 reported LHDs.

JASMA Vertical Safety Report

3.3.22 The vertical safety assessment for the RVSM airspace in the Fukuoka FIR's RVSM airspace for the period from January to December 2020 was presented by the Japan Airspace Safety Monitoring Agency (JASMA). The 2020 RVSM risk estimate for the Fukuoka FIR indicated that the TLS had not been met at **11.57×10^{-9}**.

3.3.23 In response to JASMA's invitation to RASMAG/26, particularly IATA and IFALPA, to provide feedback on the increasing number of Category A LHDs, IFALPA had agreed that decreasing opportunities for pilots to operate aircraft may have contributed. JASMA was also asked whether these events could be categorized by time of day, as fatigue may be a contributing factor due to some operators requiring pilots to fly longer than usual flight hours. JASMA agreed to provide IFALPA with further information, but noted it would take some time to prepare.

JASMA Horizontal Safety Report

3.3.24 Japan had provided the horizontal risk assessment results of the Fukuoka Flight Information Region (FIR) conducted by the Japan Airspace Safety Monitoring Agency (JASMA). The horizontal separations based on Performance-Based Navigation (PBN) both met the TLS, with 50NM lateral achieving **0.65×10^{-9}** and 30NM longitudinal estimated risk at **0.015×10^{-9}**. The 10-minute time-based risk also met TLS at **0.25×10^{-9}**.

MAAR Vertical Safety Report

3.3.25 The Monitoring Agency for the Asian Region (MAAR) provided the results of the airspace safety oversight for RVSM operations in South Asia/Indian Ocean Airspace (SA/IO), Southeast Asia Airspace (SEA), and Mongolian Airspace during 2020.

3.3.26 The 2020 RVSM risk estimate for SAIO airspace indicated that the TLS had not been met at **15.67×10^{-9}**.

3.3.27 As had been the case in previous years, the vast majority of the 152 LHD cases that had been reported in SAIO airspace were Category E events, with 138 (91%). The 65% reduction in numbers of LHDs from 434 in 2019 to 152 in 2020 reflected the 66% decrease in estimated annual flight hours.

3.3.28 **LHD Hot Spot G** (Sanaa/Muscat – Mumbai) and LHD Hot Spot F (Mogadishu – Mumbai) at the western boundary of Mumbai FIR remain as LHD hot spots since 2015. In 2020 the number of non-zero duration LHDs of these hot spots accounted for 62% of all non-zero-duration LHDs of the SA/IO airspace and the resultant operational risk of **11.17×10^{-9}** accounted for 74% of the total operational risk of the SA/IO airspace.

3.3.29 The 2020 RVSM risk estimate for SEA airspace indicated that the TLS for total risk had been met at **1.82×10^{-9}**. 27 of the 39 reported LHDs in SEA airspace (69%) were classified as Category E, which contributed to most of the operational risk (1.35×10^{-9}).

3.3.30 Even though the situation of **LHD Hot Spot D (Manila and all adjacent FIRs)** seemed to be improving, the majority of the reported LHDs and the operational risk of the SEA airspace still remained along the boundaries of Manila FIR. A total of 24 LHDs at Manila FIR boundaries accounted for 62% of the number of LHDs in the SEA airspace. The resultant operational risk of 1.05×10^{-9} accounted for 74% of the operational risk of the SEA airspace. Two out of three long duration LHDs occurred at Manila FIR boundaries.

3.3.31 Figure **3** illustrates the trend of LHDs being reported along Manila FIR boundaries together with the timeline of major safety improvement implementation by Manila ACC and the adjacent units. Since the transition to the new ATM centre in 2018, Manila ACC aimed to continually improve their communication and surveillance capabilities with ADS-C/CPDLC, AIDC and ADS-B technology.

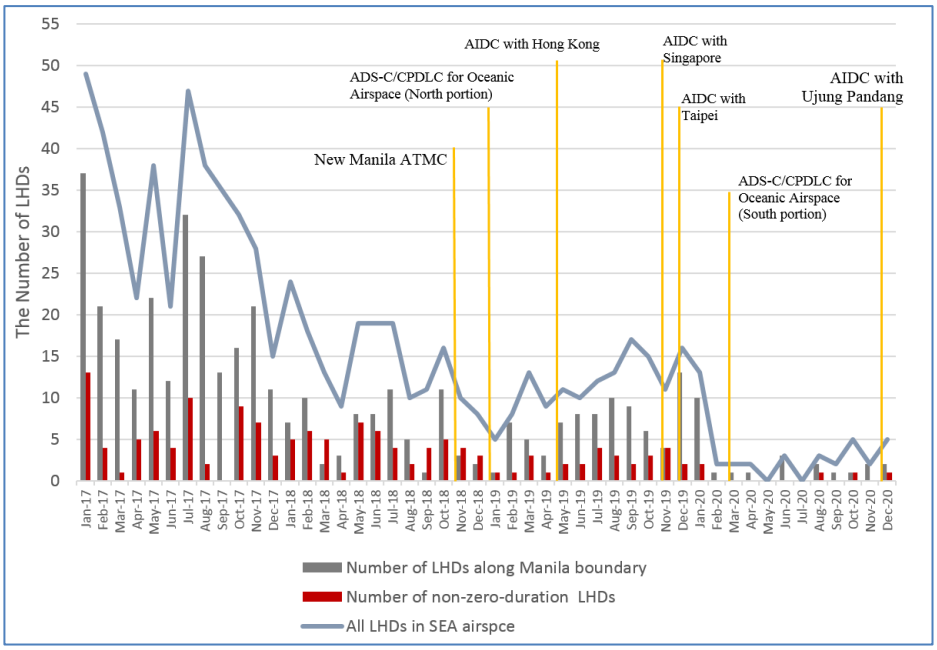

Figure 3: LHDs along Manila FIR Boundary 2017 to 2020

3.3.32 In 2019 Category F LHDs were an emerging issue at Manila boundaries where AIDC was implemented. There were a total of 9 Category F LHDs, and 7 out of 9 LHDs were due to AIDC failures. In 2020, the number of Category F LHDs slightly decreased from 9 to 6 LHDs. Those 6 LHDs were caused by the AIDC system failures and the unsuccessful transfer via AIDC. ICAO noted that system alerts to ATC and robust procedures requiring voice coordination in the event of failure of AIDC message exchange were necessary for all AIDC implementations.

3.3.33 The 2019 RVSM risk estimate for Mongolian airspace indicated that the TLS had been met at **0.87 x 10^{-9}**. No LHD was reported in 2020 within or at the boundary of Mongolian airspace.

PARMO Vertical Safety Monitoring Report

3.3.34 PARMO provided a vertical safety assessment for the Pacific RVSM airspace and a portion of the Incheon FIR during 2020.

3.3.35 The 2020 RVSM risk estimate for Pacific airspace indicated that the TLS had not been met at **22.04 × 10^{-9}**.

3.3.36 Of the 51 LHDs, 27 were classified as Category E (53%, compared to 81% in 2019). There were also nine Category B *Flight crew climbing /descending without ATC clearance* LHDs (18%).

3.3.37 A task force had been established to develop mitigations for the high number of reported Category E occurrences between Honolulu Control Facility (HCF) and Oakland Center.

3.3.38 The 2020 RVSM risk estimate for the Incheon FIR (not including the AKARA – FUKUE Corridor) indicated that the TLS had been met at **0.23 × 10^{-9}**. There were two LHDs reported in North East Asia airspace in 2020. Both were Category E.

Hot Spots

3.3.39 **Table 1** summarizes current LHD Hot Spots, the FIRs involved, the year of identification, and status remarks.

Hot Spot	Involved FIRs	Identified	Remarks
A1	Kolkata/Chennai/Dhaka-Yangon	2015	Cat. E LHDs reducing
A2	Chennai – Kuala Lumpur	2015	Cat. E LHDs reducing
B	Incheon (AKARA Airspace)	2015	Cat. E LHDs
D	Manila – all adjacent FIRs	2015	Cat. E LHDs reducing Cat F LHDs emerging
F	Mogadishu – Mumbai	2015	Cat. E LHDs
G	Sanaa/Muscat – Mumbai	2015	Cat. E LHDs (Sanaa improved)
J	Jakarta – Singapore/Kota Kinabalu	2018	Cat. E LHDs, minor and reducing
M	Colombo – Melbourne	2019	Proposed to re-classify as non-hot spot, subject to further data
N	Oakland USA – Hawaii CEP	2019	Cat. E LHDs increasing

Table 1: LHD Hot Spots in the Asia/Pacific Region

Horizontal Safety Assessments

3.3.40 Horizontal safety assessments provided by APAC monitoring agencies indicated that the TLS of 5.0 x 10^{-9} had been met in all FIRs. The contribution of the significantly reduced traffic levels to an overall reduction in the estimated horizontal safety risk across the region was acknowledged. **Table 2** summarizes regional performance-based horizontal risk assessments.

ATC Separation	EMA	2019 Estimated Risk	2020 Estimated Risk
50NM Lateral	BOBASMA	1.59 x 10^{-9}	0.64 x 10^{-9}
	JASMA	1.45 x 10^{-9}	0.65 x 10^{-9}
	PARMO	-	-
	SEASMA	0.012 x 10^{-9}	0.012 x 10^{-9}
30NM Lateral	PARMO	3.35 × 10^{-9}	0.09 × 10^{-9}
50NM Longitudinal	BOBASMA	4.97 x 10^{-9}	0.87 x 10^{-9}
	PARMO	-	2.22 × 10^{-9}
	SEASMA	0.38 x 10^{-9}	0.38 x 10^{-9}
30NM Longitudinal	BOBASMA	-	-
	JASMA	0.015 x 10^{-9}	0.015 x 10^{-9}
	PARMO	4.08 × 10^{-9}	4.08 × 10^{-9}

Table 2: Comparison of Horizontal Risk Assessments

APAC Consolidated Safety Report

3.3.41 MAAR presented a combined summary of the safety analysis results for the Asia/Pacific Region, on behalf of the Asia/Pacific RMAs and EMAs. The report was divided into the Pacific (PAC) area, and Asia area.

3.3.42 The estimated vertical collision risk for 2020 for the PAC area did not meet TLS. (**Table 3**). The overall risk vertical risk had been increasing from 2016 to 2020 due to improvements in reporting culture.

Pacific Area – annual flying hours = 1,749,178 hours			
Source of Risk	**Risk Estimation**	**TLS**	**Remarks**
Vertical Technical Risk	0.14 × 10^{-9}	2.5 × 10^{-9}	Below Technical TLS
Vertical Operational Risk	16.57 × 10^{-9}	-	-
2020 Vertical Overall Risk	**16.71 × 10^{-9}**	5.0 × 10^{-9}	**Above TLS**

Table 3: Pacific Area Vertical Collision Risk 2020

3.3.43 The PAC vertical collision risk estimates had been above TLS and trending upwards each year from 2016 to 2019. In 2020 there was a significant fall in the risk estimate, reflecting the reduction in traffic volumes caused by the COVID-19 pandemic **(Table 4**)

Year	Vertical Overall Risk Estimate (x 10^{-9} *fapfh*)	Remark
2020	16.71	Above TLS
2019	30.21	Above TLS
2018	19.40	Above TLS
2017	7.30	Above TLS
2016	5.01	Above TLS

Table 4: Pacific Area Vertical Collision Risk Estimates 2016 - 2020

3.3.44 There was a total of 91 LHDs in the Pacific area in 2020, with total duration 312.90 minutes and 82 levels crossed. 17 of the occurrences were Category A, B or C (19%), 48 were Category D, E or F (53%), and 16 were Category I (18%).

3.3.45 The estimated horizontal collision risk for 2020 for the PAC area met TLS in all longitudinal and lateral risk categories.

3.3.46 There was a total of 109 LLDs and LLEs in the Pacific area in 2020, with a total duration of 781 minutes and total horizontal deviation of 544NM. 70 of the occurrences were Category E (64%), 13 were Category A or B (12%), 10 were Category G (9%) and 14 were Category H (13%).

3.3.47 The estimated vertical collision risk for 2020 for the Asia area did not meet TLS (**Table 5**). The overall risk continued to decline since 2017 due to various safety improvement initiatives, but remained above TLS.

Asia Area – annual flying hours = 5,404,154 hours			
Source of Risk	**Risk Estimation**	**TLS**	**Remarks**
Vertical Technical Risk	0.33×10^{-9}	2.5×10^{-9}	Below Technical TLS
Vertical Operational Risk	7.09×10^{-9}	-	-
2020 Vertical Overall Risk	**7.42×10^{-9}**	5.0×10^{-9}	**Above TLS**

Table 5: Asia Area Vertical Collision Risk 2020

3.3.48 The Asia vertical collision risk estimates had been above TLS each year from 2016 to 2019, and trending downwards since 2017. In 2020 there was a significant fall in the risk estimate, while still remaining above TLS, reflecting the reduction in traffic volumes caused by the COVID-19 pandemic **(Table 6**)

Year	Vertical Overall Risk Estimate (x 10^{-9} *fapfh*)	Remark
2020	7.42	Above TLS
2019	12.88	Above TLS
2018	15.50	Above TLS
2017	27.30	Above TLS
2016	12.53	Above TLS

Table 6: Asia Area Vertical Collision Risk Estimates 2016 - 2020

3.3.49 The estimated horizontal collision risk for 2020 for the Asia area met TLS in all longitudinal and lateral risk categories.

Safety Reporting

3.3.50 **Table 7** shows the number of LHD, LLD and LLE reports for 2016 to 2020, and the number of reports per flying hours. Total estimated flying hours decreased significantly due to the COVID-19 pandemic, from 15,677,369 in 2019 down to 7,234,881 in 2020 – an overall reduction of 54%. The total number of reports approximately halved, from 1094 in 2019 down to 548 in 2020.

3.3.51 The number of reports per flying hours in 2020 increased from 2019 in China, Indonesia, Japan, South Asia/Indian Ocean (marginally), South West Pacific and Pacific, leading to an overall reporting rate that was slightly improved from the 2019 reporting rate.

3.3.52 The number of reports per flying hours decreased in Republic of Korea and South East Asia. China, Republic of Korea and South East Asia were among the lowest recorded reporting rates for the region. Data was not available for DPR Korea or Mongolia.

Airspace	# Reports					1 Report : Flying Hrs				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
DPRK	0	0	0	0	0	-	-	-	-	-
Mongolia	0	4	1	2	0	-	1: 37,771	1: 158,891	1: 82,138	-
China	117	134	110	79	85	1: 20,413	1: 18,248	1: 22,229	1: 31,119	1: 26,867
ROK	6	5	12	34	5	1: 93,291	1: 117,090	1: 28,365	1: 18,959	1: 25,965
SEA	426	474	205	152	42	1: 5,884	1: 6,548	1: 17,757	1: 22,275	1: 25,106
Indonesia	32	34	23	37	18	1: 11,520	1: 10,842	1: 53,603	1: 33,321	1: 17,346
Japan	43	71	76	77	66	1: 33,834	1: 21,510	1: 20,632	1: 20,762	1: 14,737
SA/IO	778	935	681	439	152	1: 3,689	1: 3,166	1: 3,783	1: 7,955	1: 7,907
SW Pacific	52	51	53	101	46	1: 16,639	1: 17,572	1: 17,817	1: 9,335	1: 6,954
Pacific	33	42	43	173	134	1: 63,500	1: 54,191	1: 45,064	1: 10,139	1: 6,404
Total	**1,487**	**1,750**	**1,204**	**1,094**	**548**	**1: 8,905**	**1: 8,180**	**1: 12,332**	**1: 14,330**	**1: 11,712**

Table 7: Total LHD, LLD and LLE Reports, and Reports per Flying Hours, 2016 - 2020

Identification of Non-Approved Airframes Operating in RVSM Airspace

3.3.53 The RMAs had informed RASMAG/26 of non-RVSM approved airframes indicating RVSM approval status in filed flight plans over a period of three months or more. 10 airframes were identified by AAMA, 21 by JASMA, 19 by MAAR, 19 by China RMA and three by PARMO. RMAs' 'W' Verification of State Aircraft

3.3.54 RASMAG/26 had been informed of an action item from RMACG/14, which asked all RMAs to request clarification from their respective PIRGs on responsibilities of the RMA regarding verification of the approval status of State aircraft (military and other government aircraft performing non-commercial, sovereign functions) and their relation to civil authorities. Aircraft that included 'W' in flight plans but did not have matching RVSM approval were generally called 'rogue' aircraft. The rogue aircraft that persistently remained on the list were mostly State aircraft. In order for the rogue State aircraft to be removed from the list either the State aircraft's approval data had to be provided to the designated RMA, or the State aircraft operator had to stop using 'W' in item 10 of the ICAO flight plan.

3.3.55 In discussion RASMAG/26 had noted that some States or their RMAs were not permitted to share RVSM approval data for State aircraft.

3.3.56 Noting that there was a 'political' dimension that warranted the matter be discussed by APANPIRG, RASMAG/26 agreed to a Draft Conclusion for consideration by APANPIRG/32.

3.3.57 As also reported under Agenda Item 3.2, the Draft Conclusion was presented to ATM/SG/9 for endorsement. ATM/SG/9 did not endorse the Draft Conclusion. While noting the need for RVSM approval for all aircraft that included the RVSM indicator in flight plans, for the safety of operations in the airspace, ATM/SG/9 considered that there would be considerable difficulty in sharing data on State aircraft outside the State. Items 1a. and 1b. of the Draft Conclusion were not supported by ATM/SG, but the remainder was acceptable.

Note: The States that did not support the Draft Conclusion at ATM/SG/9 were present at RASMAG/26 and had supported the Draft Conclusion at that time.

3.3.58 In APANPIRG/32 discussion of the Draft Conclusion India stated that, while best efforts would be made to liaise with military authorities on this matter, it did not support the inclusion of items 1a and 1b which urged States to liaise with their State aircraft operators to a) share State aircraft RVSM approval data with the designated RMA; or b) to confirm the RVSM approval status of State aircraft when queried by the RMA. The following Conclusion, revised from the original Draft Conclusion in order to reach consensus, was agreed by the meeting:

<table>
<tr><td colspan="3">Conclusion APANPIRG/32-6: RVSM Approvals Data and Filing of RVSM Indicator in Flight Plans of State Aircraft</td></tr>
<tr><td colspan="2">What: That, States are urged to:
1. liaise with their State aircraft operators to not file 'W' in item 10 of the ICAO flight plan of aircraft that are not approved for RVSM; and
2. respond to a survey on RMA and State responsibility on the matter of RVSM approvals of State aircraft.</td><td>Expected impact:
☒ Political / Global
☒ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: To improve airspace safety by ensuring that only RVSM-approved State aircraft file the RVSM 'W' indicator in filed flight plans, and facilitating the monitoring of RVSM approvals and performance of State aircraft by Regional Monitoring Agencies</td><td colspan="2">Follow-up: ☒Required from States</td></tr>
<tr><td>When: 3-Dec-21</td><td colspan="2">Status: Adopted by PIRG</td></tr>
<tr><td colspan="3">Who: ☒Sub groups ☒APAC States ☒ICAO APAC RO ☒ICAO HQ ☒Other: RASG</td></tr>
</table>

APAC Consolidated LTHM Burden Estimate

3.3.59 MAAR presented the overview of Long Term Height Monitoring (LTHM) compliance status in the APAC Region, including assessments of five APAC RMAs – AAMA, China RMA, JASMA, MAAR and PARMO. The assessment, which was based on RVSM approval data as of at 30 June 2021, yielded a remaining monitoring burden of 422 aircraft, which was a 5% increase since 2019.

3.3.60 **Table 8** lists the States having a remaining monitoring burden of 30% or more, which could be subject to an APANPIRG ATM and Airspace Safety Deficiency.

State	2019%	2020%
Pakistan (MAAR)	**46%**	**61%**
India (MAAR)	**46%**	**51%**

State	2019%	2020%
Solomon Islands (AAMA)	0%	50%
Philippines (MAAR)	43%	48%
Nepal (MAAR)	45%	46%
Afghanistan (MAAR)	85%	42%
Indonesia (AAMA)	42%	41%
Bhutan (MAAR)	40%	40%
Bangladesh (MAAR)	14%	36%
Malaysia (MAAR)	26%	33%
Papua New Guinea (AAMA)	8%	31%
Mongolia	14%	30%

Table 8: Remaining LTHM Monitoring Burden ≥30% or more

3.3.61 While noting that RASMAG/23 had agreed that States with a remaining burden 30% or more would be proposed to be added to the APANPIRG Deficiencies List, MAAR had observed that operators had been trying to fulfil their height monitoring requirements but could not do so due to the unavailability of Enhanced GPS-based Monitoring Unit services during the pandemic. However, the RASMAG Chair had noted that if the pandemic effects continued the monitoring burden may continue to become more serious. RMAs were strongly encouraged to investigate available means to obtain data. MAAR was prepared to assist in this matter. RASMAG/26 had further noted that the risks of not taking action to record Deficiencies could result in increased safety risks if and when some normal level of traffic resumed. It was therefore proposed that the RASMAG/26 report include the statement that new Deficiencies would be recorded by RASMAG/27.

ATM and Airspace Safety Deficiencies List

3.3.62 RASMAG/26 reviewed the APANPIRG ATM and Airspace Safety Deficiency List and made the following recommendations for consideration by APANPIRG/32:

a) deletion of the Deficiency for Fiji related to PRs not being provided to the Central Reporting Agency (CRA);

b) deletion (provisional) of the Deficiency for Afghanistan related to non-provision of safety related data; and

c) amendment of the Deficiency for India related to non-reporting of data link performance monitoring and analysis, to remove reference to Kolkata FIR.

3.3.63 Regarding the deletion of the Deficiency recorded against Afghanistan, there had been major disruption of Air Navigation Services (ANS) in Afghanistan, and the continued provision of the safety data that had been received in 2020 and each month up to August in 2021 was not assured. RASMAG/26 had agreed that if the provision of safety-related data did not continue in the next few months before APANPIRG/32 the Deficiency should be retained. The deficiency remained recorded in the ATM and Airspace Safety Deficiencies List presented under APANPIRG/32 Agenda Item 4.

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Agenda Item 3: Performance Framework for Regional air navigation planning and implementation

3.4 CNS Matters

3.4.1 APANPIRG/32 reviewed the outcomes of the Twenty Fifth Meeting of the Communications, Navigation and Surveillance Sub-group (CNS SG/25) of APANPIRG held from 18 to 22 October 2021 via Video Tele-Conference (VTC). The meeting noted with appreciation the work done and achievements by the SG and the contributory bodies reporting to APANPIRG through the SG, and discussed CNS related matters and took the following actions on the report of CNS SG/25 meeting and other papers presented under Agenda Item 3.4.

Report of CNS SG/25 (WP/12)

3.4.2 The full report and papers of the CNS SG/25 meeting were available on the following webpage:https://www.icao.int/APAC/Meetings/Pages/2021-CNS-SG-25.aspx

3.4.3 The meeting noted that CNS SG/25 meeting had adopted the following 8 Conclusions and 5 Decisions on technical and operational matters:

Reference		Subject
Conclusion CNS SG/25/01 (*ACSICG/08/01(CRV/08/01)*)	-	CRV Implementation Plan amendment *(Version 2.1)*
Conclusion CNS SG/25/03 (*SWIM TF/05/01)*	-	Asia/Pacific SWIM Implementation Plan and Status Survey
Decision CNS SG/25/04 (*SWIM TF/05/02)*	-	Revised SWIM TF Terms of Reference
Conclusion CNS SG/25/05	-	The Catalogue of Asia and Pacific Flight Inspection and Flight Validation Service Providers
Conclusion CNS/SG/25/06	-	Update of Flight Inspection Guidance Material (FIGM) for APAC Region
Conclusion CNS SG/25/10 *(SURICG/6/4 (DAPs WG/4/6))*	-	Mode S DAPs IGD 3.0
Conclusion CNS SG/25/11 *(SURICG/6/5 (Draft Conclusion DAPs WG/4/7 and Draft Decision DAPs WG/4/8))*	-	Revision of the Regional Supplement to ASTERIX Interface Control Document (ICD)
Decision CNS SG/25/12 *(SURICG/6/6)*	-	Revised ToR of Surveillance Study Group (SURSG)
Conclusion CNS SG/25/13 *(SURICG/6/7)*	-	Integrity of ICAO Aircraft Address and Target Identification in ADS-B / MLAT / Mode S Data and Flight Plan
Decision CNS SG/25/14 *(SURICG/6/8)*	-	Revised ToR of Surveillance Implementation Coordination Group (SURICG)

Conclusion CNS SG/25/15 *(SURICG/6/9)*	-	Revised ADS-B Implementation and Operations Guidance Document (AIGD)
Decision CNS SG/25/16 *(ATMAS TF/2/1 (APA TF/7/1))*	-	Dissolution of APA TF
Decision CNS SG/25/17 *(ATMAS TF/2/2)*	-	Revised ATMAS TF Terms of Reference

3.4.4 The meeting further noted that the SG had identified a number of actions items related to CNS. Member States were encouraged to take active follow-up actions on CNS related actions items resulted from the relevant meetings.

Election of chair of the Sub-group

3.4.5 Mr. Richard Wu, Deputy Director-General of Civil Aviation Department, Hong Kong China was unanimously elected as the Chair of the CNS Sub-group for the second term.

Aeronautical Fixed Service (Report of ACSICG/8)

3.4.6 The ACSICG/8 was held from 21 to 23 June 2021 via VTC, which reviewed the outcomes of the Eighth Meeting of the Common aeRonautical Virtual Private Network Operations Group (CRV OG/8) and took follow-up actions.

CRV Implementation Plan Amendment

3.4.7 Based on the recommendation of CRV OG/8 and ACSICG/8 on adjusting assigned IP address range in the CRV Implementation Plan for broadcasting space-based ADS-B data, the CNS SG/25 meetings adopted the Conclusion CNS SG/25/01 (ACSICG/08/01(CRV/08/01)) – CRV Implementation Plan amendment.

CRV Solution for Pacific Islands and small ANSPs

3.4.8 From the recent regional CRV implementation update submitted by PCCWG, it was noted that there had been slow implementation progress with the Pacific Island States and small ANSP in the region to date. With the target date for the implementation of CRV by 2022, the meeting adopted the following Conclusion:

Conclusion APANPIRG/32/7 *(CNS SG/25/02) - Implementation of CRV for small Pacific Island and small ANSP in the region using CRV Solution, PCCWG SLA Package D.*	
What: That, the CRV OG should consider the following to assist small Pacific Islands & small ANSP in APAC in the implementation of CRV: a) Small Pacific Island and small ANSP in the region to consider using CRV SLA package D as the CRV solutions to implement CRV for the exchange of voice & AMHS services b) With target date to implement CRV by the end of 2021 by APANPIRG Conclusion C 31/12, it is recommended that the CRV OG to work closely with the small Pacific Islands, small ANSP in the region and PCCWG on a cost effective CRV solution to implement CRV.	Expected impact: ☐ Political / Global ☐ Inter-regional ☒ Economic ☐ Environmental ☒ Ops/Technical

Why: To facilitate the implementation of CRV for the small Pacific Island & small ANSP in the region	Follow-up: ☒Required from States
When: 03-Dec-2021	Status: Adopted by PIRG
Who: ☒Sub groups ☒APAC States ☐ICAO APAC RO ☐ICAO HQ ☒Other: ACSICG	

Implementation updates in ACSICG/8 and CRV OG/8

3.4.9 CRV Landing Page, which provided the overview content to CRV, had been created on the ICAO APAC Website at https://www.icao.int/APAC/Pages/Join-CRV.aspx. Member States were encouraged to refer to the Page for necessary information related to joining CRV.

3.4.10 Expert groups of CRV OG on Service Strategy, Design, Transition and Operations had been established with objectives, various tasks and activities set and working methodology discussed to incorporate the outcomes in CRV Operations manual.

3.4.11 Latest CRV Implementation updates and Service were reviewed in ACSICG/8 and CRV OG/8. There were 38 circuits in 26 cities with different CRV packages implemented. States/Administrations including Australia, Bhutan, China, Fiji, Japan, Malaysia, Nepal, New Zealand, Philippines, PNG, Hong Kong China, ROK, Singapore, and USA had joined CRV. It was further informed that 8 cities were planning to join CRV in 2021 which were Mumbai (India), Jakarta (Indonesia), Makassar (Indonesia), Bangkok (Thailand), Moscow (Russia), Khabarovsk (Russia), New Caledonia, and French Polynesia.

3.4.12 The ATN/AMHS/AIDC implementation table and the CRV implementation table were reviewed by CNS SG/25, which were provided at **Appendix A** and **Appendix B** to the Report on Agenda Item 3.4 respectively. Graphical illustrations on ATN/AMHS and CRV implementation status were provided in **Figures 1** and **2** below.

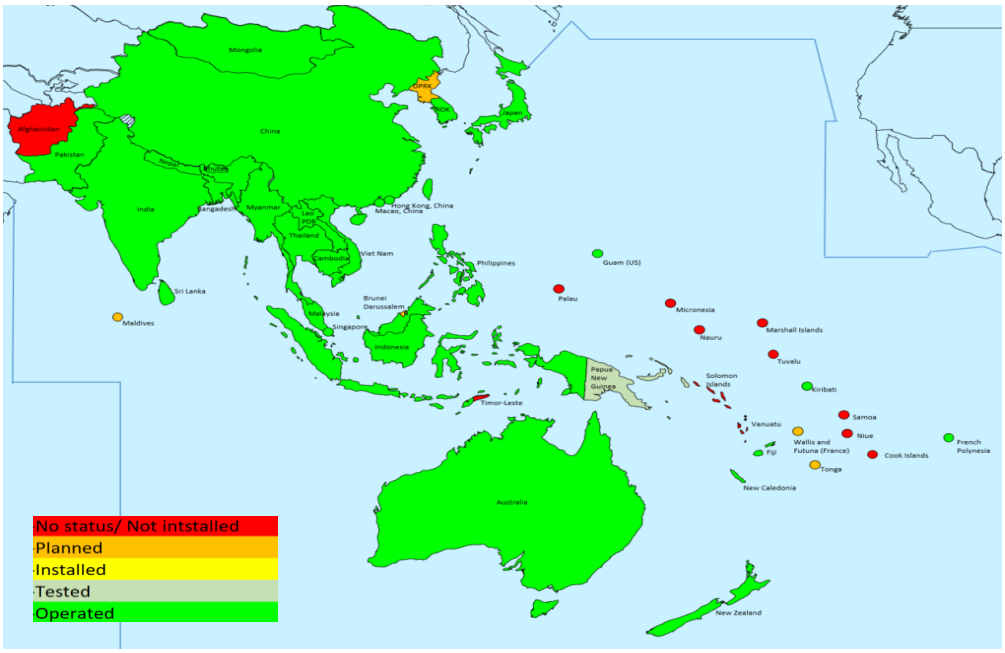

Figure 1 – ATN/AMHS Implementation Status in APAC

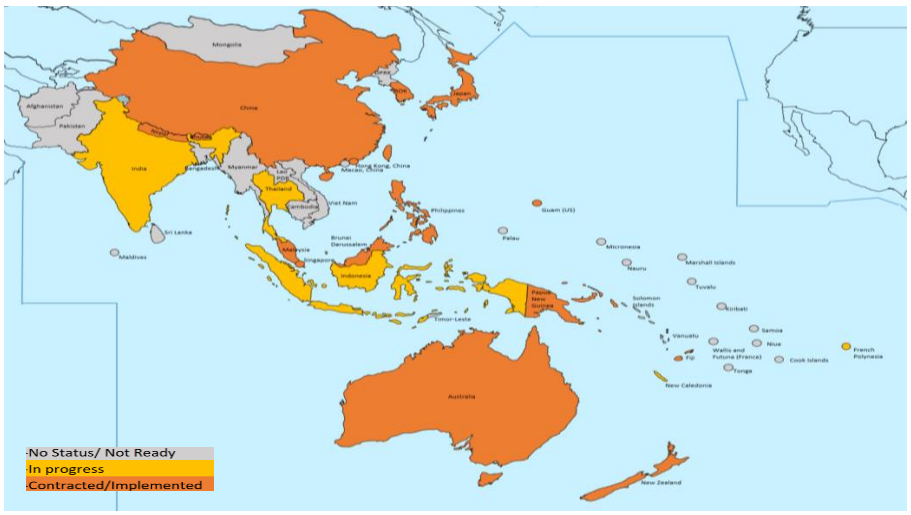

Figure 2 – CRV Implementation Status in APAC

CRV Post Implementation Issues in Bhutan

3.4.13 The meeting noted the issue faced by Bhutan related to CRV post implementation due to the non-readiness of peer States. The meeting appreciated the follow-up action of the experts from *Australia, Bhutan, India, New Zealand, Singapore, and Thailand* for a way out for Bhutan to use its CRV service to some extent temporarily. Member States, in particular, the BBIS hosting states, were urged to implement CRV as per the target date set by APANPIRG.

AMHS readiness status for supporting IWXXM Traffic

3.4.14 Although there had been a significant increase in the AMHS readiness for supporting IWXXM Traffic, the reporting gap as well as the slow progress on the reporting were still identified, States/Administrations were urged to inform ICAO APAC Regional Office on their readiness and implementation progress/plan of AMHS with FTBP as soon as possible.

3.4.15 Twelve States/Administrations provided their status on AMHS readiness and experience for supporting IWXXM Traffic in ACSICG/8, while 20 States/Administrations in APAC Region completed the AMHS implementation as per information from the ATS Messaging Management Centre (AMC) informed in ACSICG/7. CNS SG/25 noted the AMHS Readiness Table for Supporting IWXXM Traffic updated in the ACSICG/8 meeting, which was provided in **Appendix C** to the Report on Agenda Item 3.4, and the graphical illustration was provided in **Figure 3** as follows:

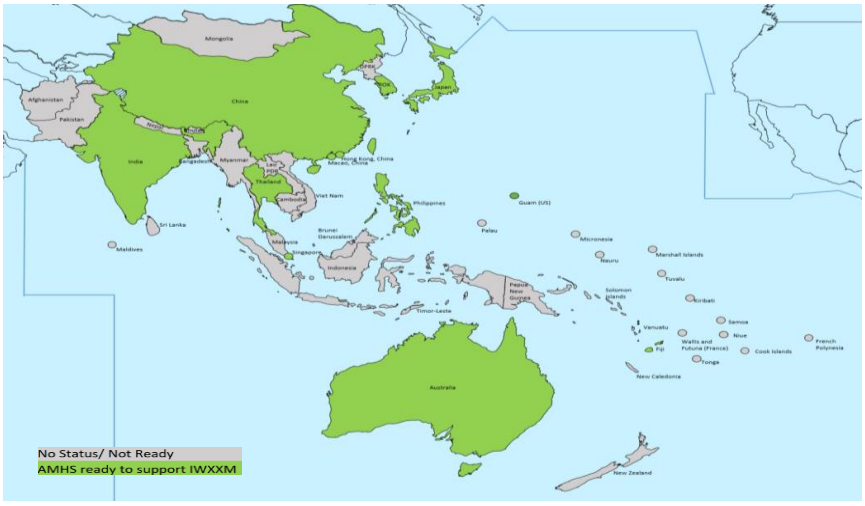

Figure 3 – APAC States AMHS Readiness to support IWXXM

3.4.16 It was also noted that while some States were ready to support IWXXM exchange via AMHS, no end users of those States had indicated to plan for system upgrades to receive IWXXM yet.

MPLS/IP Based Inter-Regional Connection

3.4.17 There were communications requirements between APAC ANSPs and SAM ANSPs over CRV and REDDIG II, so as to set up the AMHS P1 connection between AMHS COM Centres of Christchurch (New Zealand) and Santiago (Chile). The discussion on the administrative and technical aspects to establish the required aeronautical communications between APAC and SAM ANSPs through MPLS NNI was in progress.

AMHS Connections between APAC and EUR/NAT

3.4.18 The ICAO EUR/NAT Office initiated a coordination with ICAO APAC Office on interregional AMHS connection issues to support future AIRM data, such as IWXXM. Refer to the APAC Routine Directory for AFTN circuits, for the links between Europe and Asia, there were:

a. Bangkok-Rome	AFTN
b. Beijing-Khabarovsk	AFTN
c. Fukuoka-Moscow	AFTN
d. **Singapore-London**	**AMHS**

3.4.19 Singapore would continue to provide this bilateral link to maintain the interconnection between APAC and EUR/NAT region. The Rome-Bangkok AMHS connection was waiting for the readiness from the Rome side for the AMHS transition, and Thailand (AEROTHAI) commissioned one MPLS and tested the inter-operability between AMHS systems. China, Japan, and Russia were interested in switching to AMHS exchange between Beijing and Khabarovsk, and between Fukuoka and Moscow, the transition to AMHS of these two connections was expected as soon as possible, once Russia joins the CRV network.

CRV Webinar

3.4.20 The ICAO Asia Pacific Implementation of CRV Webinar was held on *20 July 2021* via VTC. A total of 40 questions were asked and *more than 15 feedbacks* for the Webinar were provided by Participants with 100% positive responses**.** Member States expressed the need for potential discussion with PCCWG for extension of CRV Implementation deadline beyond the end of 2022 due to COVID-19 crisis as it was continued in 2021, and the flexibilities in the package options, as well as a platform for sharing lessons learnt and best practices based on experiences by Member States.

ATS Inter-Facility Data-Link Communication (Report of APA TF/7)

3.4.21 The Seventh Meeting of the Asia/Pacific ATS Inter-Facility Data-Link Communication Implementation Task Force (APA TF/7) was held from 7 to 9 June 2021.

AIDC Implementation

3.4.22 An updated Graphical Display on the AIDC implementation status based on the inputs provided to the APA TF/7 meeting was provided in **Figure 4** below.

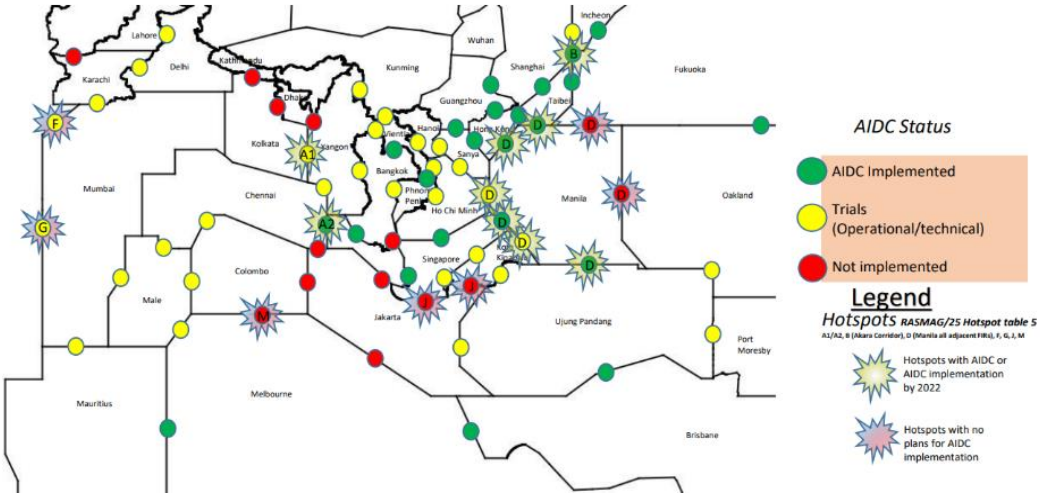

Figure 4 – APAC AIDC Implementation Status (as of June 2021)

3.4.23 In APA TF/7, Singapore shared some implementation and operational issues which could be taken into consideration by other States in their implementation of AIDC. The first use of the APAC CRV for AIDC was introduced and it was informed that this was a step forward to address any existing latency issues associated with AFTN routing setups noted in some other connections.

3.4.24 The Philippines, China, India, Indonesia, Lao PDR, Malaysia, Singapore, and Thailand updated their AIDC implementation by different WP/IPs, and shared experience on hybrid application of AIDC and OLDI, electronic handover between high level and low level sectors, and lessons learnt from AIDC implementation.

3.4.25 The APA TF/7 Meeting reviewed and discussed the total 105 consolidated implementation issues collected and presented by Indonesia with supports from India and Singapore. The issue table would continue to serve as a reference for other States. A summary of the identified issues was shown in the table below.

Fault Categories	APA TF/7 (2021)		
	Issues Reported	Closed	Open
a. Communication Link	9	3	6
b. ATM System	61	29	32
c. AIDC Message	17	15	2
d. Airspace Design/Procedures	13	4	9
e. Other	5	2	3
Total	**105**	**53**	**52**

Future of APA Task Force

3.4.26 The meeting appreciated that significant achievements had been made in enhancing safety since the establishment of this task force in 2015, including the preparation of AIDC Planning Table in the Regional Air Navigation Plan, development of AIDC Implementation and Operations Guidance Document, maintenance of AIDC Issues Report, summary of AIDC focal points, the Implementation Status Chart as well as the sharing of the experience gained by States/Administrations in the challenging process of AIDC implementation. Upon the dissolution of APA TF, ATMAS TF would undertake AIDC implementation issues while ACSICG would handle communications-related issues.

Information Management (Report of SWIM TF/5)

3.4.27 The Fifth Meeting of System Wide Information Management Task Force (SWIM TF/5) was held from 9 to 11 August 2021.

3.4.28 Ms. Kristin Cropf, SWIM Program Manager, Federal Aviation Administration (FAA) nominated by Singapore and seconded by Australia and Japan was elected as Co-Chair of SWIM TF.

Expansion of SWIM Implementation Philosophy

3.4.29 APAC SWIM Implementation Philosophy was firstly discussed at the SWIM TF/3 through WP/19. It was agreed on the expansion of the SWIM Implementation Philosophy to include governance, while recognizing that the implementation of governance was an iterative process and it will be modified based on the lesson learnt throughout the implementation of SWIM.

Asia/Pacific SWIM Implementation Plan and Status Survey

3.4.30 Considering the high diversity among Member States in the Asia/Pacific region, it was challenging to devise a regional plan to achieve region-wide harmonisation while not neglecting the constraints of each Member States. To create a baseline picture of SWIM implementation plan and status within the region, it was proposed to conduct a survey to obtain the current status and views towards SWIM implementation of the Asia/Pacific Member States. CNS SG/25 adopted the Conclusion CNS SG/25/03 (SWIM TF/5/01) – Asia/Pacific SWIM Implementation Plan and Status Survey.

FIXM version 4.2 Extension development

3.4.31 The SWIM TF/5 meeting encouraged that other APANPIRG Working Groups and Task Forces, which were highly likely to have the operational requirements to use FIXM to support their related operations, should submit their consideration to SWIM TF in order to have Extension developed in due course if deemed necessary.

ToR and Work Plan

3.4.32 CNS SG/25 reviewed the updated SWIM TF Work Plan and the Action List against the revised ToR proposed by SWIM TF/5. Australia proposed some amendments via Flimsy/02 of CNS SG/25 to the draft ToR of SWIM TF. USA also shared its concern for using SWIM to transport time-critical information as detailed in WP/32 in CNS SG/25. The SWIM TF Co-Chairs advised the CNS SG/25 meeting that the draft ToR had been thoroughly discussed and agreed during the SWIM TF meeting. After some deliberations and taking into account views from CNS SG, the proposal on further modifying the term from "over CRV" to "principally over CRV" in the TOR was supported by China, Hong Kong China, Japan, Singapore, Thailand, USA, and IATA. The **Decision CNS SG/25/04** was thus adopted and the revised ToR was provided in *Appendix F to the CNS SG/25 meeting report*. The CNS SG/25 meeting also remarked that ToR was a living document which needs to be reviewed in a regular and timely manner. The SWIM TF was also reminded to consider other IP-based network technologies in their forthcoming review on ToR.

3.4.33 The meeting noted that the subject on amendment to ToR of SWIM TF was also discussed by the MET SG/25 which was conducted in the same period with CNS SG/25, with a relevant Draft Conclusion MET SG/25-07 *SWIM architecture to enable the cost-effective and efficient provision and consumption of MET information services* formulated for consideration in APANPIRG/32. The meeting invited supplementary notes from the chairs of CNS SG and MET SG. As the MET SG's draft conclusion will be captured in the ongoing review of SWIM /TF ToR and

considering no further comments from members and the following, the meeting concluded that there was no need to further consider Draft Conclusion MET SG/25-07 :

a) The revised ToR had been deliberated thoroughly in SWIM TF which was comprised of SMEs from APAC members.
b) The revised ToR of SWIM TF included "**principally** over CRV", which was subject to on-going review.
c) CNS SG reminded SWIM TF to consider other IP-based network and comments from Australia in Flimsy 2 of CNS SG/25 in forthcoming meetings, and report in CNS SG/26.
d) Decision CNS SG/25/04 and para 3.50 in CNS SG/25 Final Report had covered the concerns of Draft Conclusion MET SG/25-07.

SWIM Workshop

3.4.34 A two-day SWIM Workshop was held from *6 to 7 July 2021* via VTC. Dr. Amornrat Jirattigalachote, PhD, Policy and Strategy Management Bureau Aeronautical Radio of Thailand Ltd moderated the SWIM Workshop. Total Thirteen (13) presentations including one demonstration were delivered by Experts from different parts of the World in SWIM Workshop. Throughout the SWIM Workshop, 57 questions were asked and more than 60 feedbacks for the SWIM Workshop were provided by Participants with *100% positive responses*.

Aeronautical Mobile Service and Radio Frequency Spectrum (Report of SRWG/5)

3.4.35 The Fifth Meeting of the Spectrum Review Working Group (SRWG/5) of APANPIRG, held via VTC from 15 to 17 March 2021.

Space-based VHF Communications

3.4.36 The space-based VHF frequency compatibility study had commenced in International Telecommunications Union (ITU) Working Party 5B (WP5B) meetings and the ICAO Frequency Spectrum Management Panel (FSMP) was the designated ICAO point of liaison with ITU WP 5B. It was noted that ITU WP5B had requested for technical information pertaining to aircraft VHF and the future space-based VHF system for the compatibility study for space-based VHF (WRC-23 Agenda Item 1.7). ICAO secretariat would be the point-of-contact to track and monitor and to take the suggestions for improvement as well as concerns on the space-based VHF issue.

Frequency Coordination Process and Tool

3.4.37 The ICAO Secretariat informed that the current process for frequency coordination was based on a minimum bureaucracy when performing the frequency coordination and registration. Member States were urged to update their frequency list regularly and in a timely manner with the coordination with ICAO APAC Regional Office. ICAO holds the view that frequency assignments that had been coordinated with ICAO had priority over those that had not been coordinated. For reported interference caused by frequency implemented by States/Administrations without coordination and registration with Regional Office, it may be considered as a discrepancy to the regional planning requirements, and be further identified as a deficiency upon harmful impact report on international operations.

3.4.38 The latest updates brought to ICAO tool, Frequency Finder, included the module for the coordination of SSR Mode S Interrogator Identifier codes. The work on the development of module for VHF navigation systems (ILS, VOR, DME, and GBAS) was near completion and was under evaluation. This module had incorporated the planning criteria for ILS, VOR and DME and GBAS based on Annex 10 - Aeronautical Telecommunications - Volume I - Radio Navigational Aids

and the updates of the Handbook on Radio Frequency Spectrum Requirements for Civil Aviation (DOC 9718), Volume II, as recently agreed by NSP and FSMP. Several other updates including an online course development related to frequency management for civil aviation were shared. The meeting was informed that the delivery and implementation of Frequency Finder NAV module (Frequency List 2) would follow a similar practice for COM module (Frequency List 3), and the installation management of Frequency Finder in a States would be based on the coordination between ICAO APAC Regional Office and the respective CAA.

Planning Requirements

3.4.39 The ICAO Secretariat presented material in SRWG/5 on the use of 50 kHz channels for the ILS/Localizer and VOR. To date, 50 kHz channel spacing had not been introduced in the APAC (as well as the AFI, CAR, MID and SAM Regions). For the introduction of 50 kHz channels for the Localizer and the VOR, the provisions in Annex 10 recognise two options: General use of 50 kHz channels and restricted use of 50 kHz channels. In both cases Annex 10, volume V requires a Regional Agreement. The ICAO Secretariat proposed to have an ad-hoc group to further explore the issue.

3.4.40 A 26-page document was presented as an initial draft of regional guidance material on aeronautical frequency spectrum management in SRWG/5, the guidance material started with VHF COM and the section on NAV will be drafted later.

3.4.41 CNS SG adopted the *Conclusion CNS SG/24/7(SRWG/4/2) – Simulation of VHF COM Frequency requirements for next 10 years* to conduct a new round of simulation for VHF COM frequency assignment based on new operational requirements of States to 2030 as necessary. A State Letter had been issued and responses from 7 States received. Other Member States were reminded to submit their VHF COM Frequency plans for meaningful simulation and thus facilitate future planning in the Region.

Spectrum and Interference

3.4.42 CNS SG/25 noted that SRWG/5 developed an action item to take necessary follow up action at the regional level, to support CAAs working with State's spectrum regulators to avoid the future safety issues on radio altimeter due to 5G implementation. Furthermore, ICAO issued a state letter on *Potential safety concerns regarding interference to radio altimeters* (Ref.: SP 74/1-21/22), the Member States and Administrations were encouraged to consider as a priority, public and aviation safety when deciding how to enable cellular broadband/5G services in radio frequency bands near the bands used by radio altimeters. Member States were invited to report to ICAO APAC Regional Office in a timely manner once the interference to radio altimeters by these broadband technologies happens. Outcomes from CNS SG/25 on this issue were also shared to RASG-APAC/11 to alert the potential impact on flight safety.

3.4.43 The meeting agreed that Member States would keep an eye on monitoring the impact of 5G on radio altimeters in their States/Administrations regarding the safety and frequency spectrum issues. In parallel, it was advised that Member States CAA and airworthiness office may collect all relevant information and past issues reported, if any, and inform RASG-APAC in case of any significant concern. The issues related to frequency spectrum may be brought to the attention of the CNS section of the ICAO APAC Regional Office for the coordination with RASG-APAC and ICAO headquarter.

ICAO Position for ITU WRC-23

3.4.44 The ICAO State Letter E 3/5-21/37 *ICAO Position for the ITU WRC-23* was issued on *18 August 2021* informing Member States that the ICAO Council approved the ICAO Position for

WRC-23 on issues of critical concern to aviation at its 223rd Session, which was held on 14 June 2021, and thus inviting Member States to consider the ICAO Position when developing the State's position for WRC-23 and to support the ICAO Position during WRC-23.

Navigation (Report of PBNICG/8)

3.4.45 The Eighth Meeting of the Performance Based Navigation Implementation Coordination Group (PBNICG/8) was held through VTC, from 6 to 8 July 2021.

3.4.46 The ICAO Secretariat presented global PBN implementation status as available in ICAO iSTARS. ICAO informed that regarding the key requirement of ICAO Assembly Resolution A37-11, which was the implementation of approach procedures with vertical guidance (APV) for all instrument runway ends by 2016, the APAC Region was behind global achievement. However, the implementation of PBN SID/STAR was above the global implementation status (**Table 1**). State-wise APV implementation progress was given in **Chart-1** below.

March 2021	LNAV(including LNAV only)	APV		PBN SID	PBN STAR
		LNAV/VNAV	LPV		
Global (%)	71.4	59.4	34.4	49.4	44.8
Asia/Pacific (%)	57.5	47.1	0	71.6	68.8

Table 1. ICAO Assembly Resolution A37-11 Implementation Status

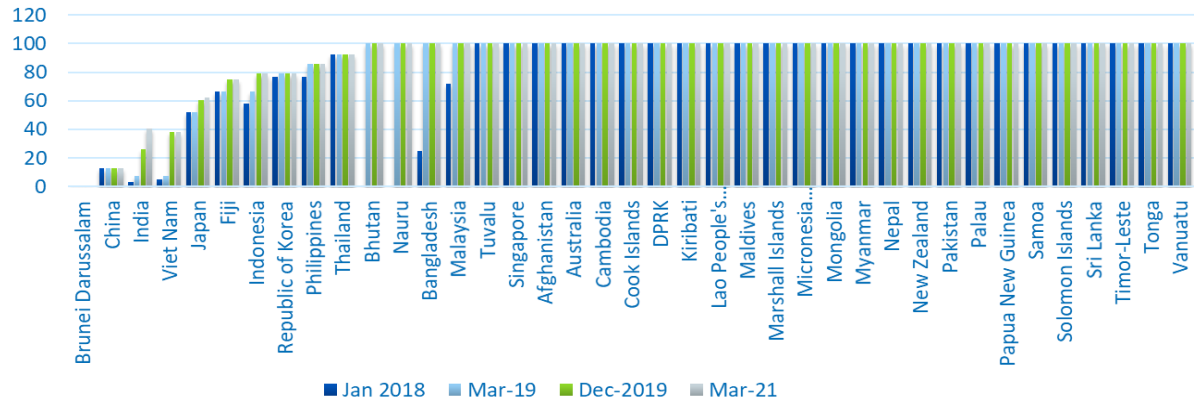

Chart-1 PBN (Approach) Update, as of March 2021(as per iSTARS)

3.4.47 The Secretariat presented the implementation status of the regional transition plan for RNP APCH chart identification from RNAV to RNP, Asia/Pacific Regional Transition Plan for RNP APCH Chart Identification from RNAV to RNP as adopted by APANPIRG/30 vide Conclusion APANPIRG/30/14. The Secretariat reminded the States about the target date as November 2022 for RNP transition. The plan was available at the following link on the ICAO APAC webpage:
https://www.icao.int/APAC/Documents/edocs/APX.%20B%20-%20Regional%20Transition%20Plan%20for%20RNP%20Chart%20Identification.pdf

3.4.48 The ICAO Secretariat presented the list of action items agreed by the previous meetings. There were two action items left for discussion at the meeting. The ICAO Secretariat informed the meeting that the issue about the discrepancy in the list of international airports in iSTARS and APAC Air Navigation Plan (ANP) was discussed with ICAO HQ and it was agreed that

ANP be used as a reference for a number of international airports. This issue was also discussed at AOP SG/4 and APANPIRG/31, States had been urged to update their list in ANP Vol-I & Vol-II. The ICAO Secretariat informed the meeting about the progress of each action item, and the meeting agreed to close both items after deliberations.

Navigation (Report of GBAS/SBAS ITF/3)

3.4.49 The Third Meeting of the ICAO GBAS/SBAS Implementation Task Force (GBAS/SBAS ITF/3) was held through VTC on 27-28 September 2021.

3.4.50 The Secretariat informed the meeting that a GBAS-SBAS Information Sharing Platform had been created on the APAC website for benefit of all States. This platform contains all those reference documents required for the implementation of GBAS/SBAS listed there with applicable links.

3.4.51 The Co-Chairs presented a paper regarding the review of the GBAS safety assessment guidance document related to anomalous ionospheric conditions and identified items to be updated. States were requested to nominate members to constitute an expert group for updating this document and Decision GBAS/SBAS ITF/3-1: Review and revise the GBAS and SBAS safety assessment guidance document related to anomalous ionospheric conditions was taken.

3.4.52 A framework of guidance reference for the implementation of GBAS/SBAS developed by the Co-Chairs was presented. The paper presented a high level framework of guidance reference document on the implementation process for GBAS/SBAS. The framework will be taken as a reference for the task force expert group to draft the guidance document for the Region and Decision GBAS/SBAS ITF/3-2: Draft a Guidance Document on Implementation Process for GBAS/SBAS was taken.

3.4.53 The ICAO Secretariat presented about GBAS/SBAS Flight Procedure Design Overview to describe the differences of these procedures vis-a-vis conventional procedures. The Action List of the task force was discussed, with description, relevance, and priority being assessed by the meeting.

Catalogue of Flight Inspection and Flight Validation Service Providers

3.4.54 The 11th edition of the updated Catalogue of Asia and Pacific Flight Inspection and Flight Validation Service Providers was adopted by CNS SG/25 and will be uploaded on the ICAO APAC e-doc portal soon and Member States will be informed by a State Letter.

Flight Inspection Guidance Material

3.4.55 Additional guidance in FIGM was provided on the frequency for flight inspections of surveillance radar systems, and other minor amendments including the latest guidelines on Flight Inspection periodicity considerations for radio navigation aids and the glossary of FIGM, were also proposed.

Surveillance (Report of SURICG/6)

3.4.56 The Sixth Meeting of the Surveillance Implementation Coordination Group (SURICG/6) was held from 24 to 27 August 2021 via VTC, which reviewed the report of the Fourth Meeting of Mode S Downlinked Aircraft Parameters Working Group (DAPs WG/4) held from 29 to 31 March 2021 via VTC, as well as the report of the First Meeting of the Surveillance Study Group (SURSG/1) held from 20 to 22 April 2021 via VTC.

Interrogator Code (IC) Planning

3.4.57 The CNS SG/25 endorsed the proposal from SURICG/6 to amend formerly adopted APANPIRG Conclusions related to II codes and extend the consideration to the use of SI codes. Hence, APANPIRG/32 adopted the following Conclusion:

Conclusion APANPIRG/32/8 *(CNS SG/25/07)* - **Interrogator Code (IC) Planning and Coordination**	
What: That, With the need to extend the Use of Surveillance Identifier (SI) in Interrogator Code (IC) on top of Interrogator Identifier (II), the relevant APANPIRG Conclusions were updated as follows: *Coordination Process for SSR Mode S Interrogator Code (IC) (formerly* **Conclusion 19/40***)* a) in view of the increasing density of SSR interrogator installations in the region, and that States have varying readiness to extend from Interrogator Identifier (II) to both Interrogator Identifier and Surveillance Identifiers (SI) codes, there will be a period whereby both II and SI will be used. b) while implementing SSR Mode S, States should take into account following issues while assigning IC for these installations: • for planning the implementation of SSR Mode S interrogators, administrations should ensure that the interrogators with overlapping coverage are not operating with the same IC. • where, the coverage of the interrogator extends beyond the boundaries of the State, The IC should be worked out in coordination with the ICAO Asia and Pacific Office and the neighbouring States concerned, and • administrations should inform the ICAO Asia and Pacific Office about the assigned IC for these installations. *Coordination Requirements for SSR Mode S Interrogator Codes (IC) (formerly* **Conclusion 20/56***)* States be advised to provide the following information on SSR Mode S Interrogator Code to the ICAO Asia/Pacific Office for coordination and registration. a) Name of country/territory and location of facility; b) Antenna Coordinates (Latitude and Longitude); c) Elevation of antenna above the Mean Sea Level (MSL) in meters; d) Maximum Coverage of SSR Mode S Interrogator in nautical mile; e) II Code (1 to 15) or SI Code (1 to 63); and f) Remarks (special configuration such as radar clustering, lockout override, II/SI mode capability) *Planning Criteria for SSR Mode S Interrogator Code (IC) Assignment (formerly* **Conclusion 20/57***)* The planning criteria for SSR Mode S IC coordination and assignment as provided in Appendix J of Doc 9924 (Third Edition, 2020) be adopted for use in the Asia/Pacific Region.	Expected impact: ☐ Political / Global ☒ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical

Why: Due to higher density of radars, some States are facing a shortage of II codes. It has to be solved by transiting from II to SI code. It is noted that state may use a mixture of II and SI codes before complete migration to SI code. The assignment of interrogator codes (IC), where necessary in areas of overlapping coverage, across international boundaries of flight information regions, shall be the subject of regional air navigation agreements. States still have to coordinate with ICAO APAC Regional Office on the allocation of II codes and SI codes.	Follow-up: ☒Required from States
When: 03-Dec-2021	Status: Adopted by PIRG
Who: ☒Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☒Other: SURICG	

*Note: This draft conclusion will supersede **APANPIRG Conclusions 19/40, 20/56 and 20/57** once adopted.*

3.4.58 In association, the Table for SSR Mode S Interrogator Code Coordination was revised.

3.4.59 The Secretariat provided the latest updates about Mode S II codes coordination in the APAC Region, and the ongoing discussion on allocation of II codes 14 and 15 with matching SI codes was shared. States were encouraged to provide updates and coordination with ICAO APAC Regional Office for updating the SSR II code list through appropriate focal points to eliminate duplicated II code implementation in overlapped coverage at boundary areas.

Transition to II and SI Mixed Code Operation

3.4.60 The SURICG/6 meeting reviewed the strategy of transition from II code to II and SI mixed code, which was then endorsed by the CNS SG/25. With aforementioned, the meeting adopted the following Conclusion:

Conclusion APANPIRG/32/9 *(CNS SG/25/08)* - **Transition from II code to II and SI mixed code**	
What: States with Mode S radar capable of performing II/SI mode operations are encouraged to transit from II code to II and SI mixed code, so as to ease the shortage of II codes. States planning to perform the transition shall coordinate with ICAO APAC Regional Office to obtain the SI codes.	Expected impact: ☐ Political / Global ☐ Inter-regional ☒ Economic ☐ Environmental ☒ Ops/Technical
Why: Due to higher density of radars, some States are facing a shortage of IC codes, which has to be solved by transiting from II to II and SI mixed code. It is noted that radars using II and SI codes can co-exist, hence there is no need for a big bang approach. However, States still have to coordinate with ICAO APAC Regional Office on the allocation of SI codes.	Follow-up: ☒Required from States
When: 03-Dec-2021	Status: Adopted by PIRG
Who: ☒Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☒Other: SURICG	

Roadmap for Mode S Implementation

3.4.61 The CNS SG//25 meeting reviewed and endorsed the Regional Roadmap provided in **Appendix D** to the Report on Agenda Item 3.4, which was proposed by SURICG/6 based on the revision of DAPs WG/4. In view of the above, the meeting adopted the following Conclusion:

<table>
<tr><td colspan="3">Conclusion APANPIRG/32/10 (CNS SG/25/09) - The APAC Regional Roadmap for Mode S Implementation</td></tr>
<tr><td colspan="2">What: That, the APAC Regional Roadmap for Mode S Implementation provided in Appendix D to the Report on Agenda Item 3.4 be adopted.</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☒ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: The revised Roadmap defined the scope and rational steps for the implementation of Mode S in APAC Region.</td><td colspan="2">Follow-up: ☒Required from States</td></tr>
<tr><td>When: 03-Dec-2021</td><td colspan="2">Status: Adopted by PIRG</td></tr>
<tr><td colspan="3">Who: ☒Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☒Other: SURICG</td></tr>
</table>

3.4.62 It was noted that the outcome of the *Survey on Current use and Future planning of Mode S Enhanced Surveillance (EHS) Implementation*, which concluded that most of the twelve States that responded to the survey were not facing any challenges in implementing APANPIRG/31/14 Conclusion. Additionally, the commercial fleet in APAC, North America, and MENA already possessed Mode S ELS and EHS Mode S capability.

Regional Supplement to ASTERIX Interface Control Document (ICD)

3.4.63 EUROCONTROL published the System Area Codes (SAC) for the various regions except for APAC. The DAPs WG/4 meeting proposed the considerations to publish the APAC SAC at the EUROCONTROL website. Additionally, States had their own control over the use of their System Identification Code (SIC) without the need for ICAO APAC to manage. As such, a Conclusion CNS SG/25/11 *(SURICG/6/5) (Draft Conclusion DAPs WG/4/7 and Draft Decision DAPs WG/4/8)* - Revision of the Regional Supplement to ASTERIX Interface Control Document (ICD) was endorsed in SURICG/6 and then was adopted by CNS SG/25.

3.4.64 The ICAO Secretariat presented the recent updates to the Regional Supplement to ASTERIX ICD for APAC Region and introduced the planning criteria and current usage of SAC in the APAC region. SURICG/6 noted that current allotments would be enough to cater for the actual and planned increase of surveillance sensors and automation systems in the APAC Region.

ToR of Surveillance Study Group and Updates

3.4.65 Based on the recommendation of SURICG/6 proposed by SURSG/1, CNS SG/25 reviewed the revised ToR of SURSG and adopted **Decision CNS SG/25/12** *(SURICG/6/6): Revised ToR of Surveillance Study Group* (SURSG).

3.4.66 CNS SG/25 reviewed a proof-of-concept (POC) from SURICG/6 for surveillance data sharing on SWIM to be conducted in Hong Kong China. The POC was explained by a high-level system block diagram in the paper. SURICG/6 expressed support to the POC and on-going work of the SURSG. In addition, CNS SG/25 reviewed the proposed Concept of Operations (CONOPS) from SURICG/6 by Hong Kong China on behalf of SURSG for sharing of surveillance data among multiple parties using a platform such as SWIM along with the objective of the CONOPS, so as to solicit suggestions/concerns from SURICG for consideration by SURSG in formulating the CONOPS.

ADS-B Implementation

3.4.67 CNS SG/25 reviewed the ADS-B Implementation Status in the APAC Region summarised in SURICG/6, as well as other documents through ad-hoc working groups on *ADS-B Data Sharing Implementation Status in the APAC Region* and Reports on the Sub-regional ADS-B Implementation Plan/Projects presented by South East Asia (SEA) and Bay of Bengal (BOB) Ad Hoc Working Groups. The ADS-B Implementation Status in the APAC Region was provided in **Appendix E** to the Report on Agenda Item 3.4, with a graphical illustration given below in **Figure 5**. During the discussion in Ad Hoc Working Groups, some States had shared to the meeting that with the implementation of space-based ADS-B, the original ground-based ADS-B data sharing project would have to be re-evaluated.

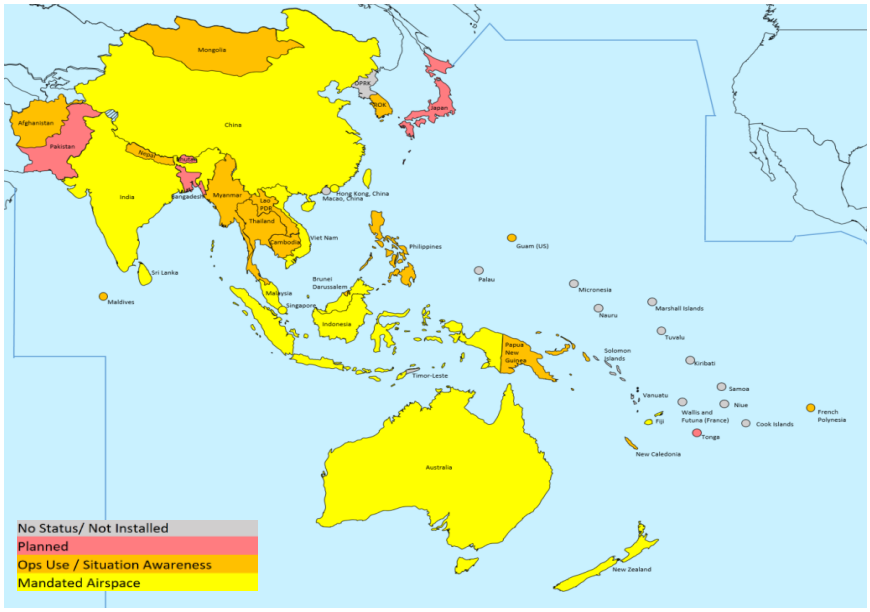

Figure 5 – ADS-B Implementation Status in APAC

Aircraft Address and Target Identification

3.4.68 In CNS SG/25, Hong Kong China presented the observation on recurring inconsistencies of ICAO Aircraft Address and Target Identification between ADS-B / MLAT / Mode S data and flight plan for some aircraft flying within Hong Kong Flight Information Region despite repeated effort had been spent to follow up with concerned airlines. Such issues had caused safety implications to ATC operation and induced additional workload to both ATC and to supporting staff for following up with the concerned airlines. As such, **Conclusion CNS SG/25/13** *(SURICG/6/7) - Integrity of ICAO Aircraft Address* and Target Identification in ADS-B / MLAT / Mode S Data and Flight Plan was adopted to urge States/Administrations to proactively follow up with air operators to address such discrepancies.

ToR and AIGD

3.4.69 SURICG ToR was reviewed in SURICG/6 in the view of the integration of SEA/BOB ADS-B WG ToR. The revised SURICG ToR was reviewed and adopted by CNS SG/25 through **Decision CNS SG/25/14** *(SURICG/6/8): Revised ToR of Surveillance Implementation Coordination Group (SURICG)*, which was provided in Appendix N to the CNS SG/25 meeting report.

3.4.70 The revised ADS-B Implementation and Operations Guidance Document (AIGD) was endorsed in CNS SG/25 through **Conclusion CNS SG/25/15** *(SURICG/6/9) - Revised ADS-B Implementation and Operations Guidance Document (AIGD)* as version 14.

ADS-B Webinar

3.4.71 The ICAO APAC Webinar on Implementation of ADS-B was successfully conducted on 1 September 2021 via VTC. The objectives of the Webinar were to review concepts, benefits of Automatic Dependent Surveillance – Broadcast (ADS-B), and share implementation experiences that include ADS-B mandate, ADS-B data sharing, implementation issues, and measures to support ADS-B operation. The latest ADS-B technologies including space-based ADS-B were also discussed during the Webinar.

Automation (Report of ATMAS TF/2)

3.4.72 The Second Meeting of ATM Automation Systems Task Force (ATMAS TF/2) was held via VTC from 14 to 16 September 2021.

Conspicuity Code

3.4.73 The ATMAS TF/2 meeting reviewed the report of SURICG/6 and discussed and agreed that the implementation of conspicuity code (Mode A code 1000) in ATM Automation Systems was necessary to support Mode S operations in the Region. It was informed that the ATM Automation System Implementation and Operations Guidance Document (ATMAS IGD) had already provided the recommendation for the ATM Automation Systems on implementation of conspicuity code.

Repository of the ATM automation systems

3.4.74 To follow up ACTION ITEM 1-1 of ATMAS TF/1: *Develop a table to list the current ATMAS status for all states for this task force to establish a repository of the ATM automation systems implemented by States*, Indonesia proposed a draft Table of Current ATMAS Status for all States and invited States/Administrations to review and provide inputs to this regional repository. The ATMAS TF/2 meeting suggested that the table should make reference to the revised version of the ATMAS IGD and agreed to create an ad-hoc group led by Indonesia, including China, Hong Kong China, Republic of Korea, and Singapore with support of the ICAO Secretariat to consider the suggestions provided by the meeting and work out a revised version of the table before conduct a survey.

Problem Reporting Database

3.4.75 Hong Kong China informed ATMAS TF/2 meeting that it had taken up the action item from ATMAS TF/1 on studying the feasibility of expanding the ADS-B Avionics Problem Reporting Database (APRD) to cover the report and sharing of ATMAS-related problems by States/Administrations in APAC region. Hong Kong China provided a detailed proposal to expand the existing APRD, and concluded that it was technically feasible and cost-effective to implement ATMAS PRD by leveraging the framework and hardware resources of APRD with no additional hardware resource requirement. The ATMAS TF/2 meeting agreed that China, Hong Kong China, and Indonesia create an ad-hoc group with the support of the ICAO Secretariat to further progress the development of ATMAS PRD and consider including AIDC implementation issue as well.

ATM Automation System Implementation and Operations Guidance Document

3.4.76 Following the conclusion of ATMAS TF/1, the framework of Recommended Functions and Performances of ATM Automation System (RFAP ATM AS) Edition 0.0, which was led by China, Hong Kong China, and Singapore in preparing, had been adopted. The completed draft guidance document was sent to Member States/Administrations on 6 August 2021 for review, China revised the draft guidance document according to the comments and additional materials received. In order to align with the naming convention of other IGDs for APAC, ATMAS TF/2 adopted "Air

Traffic Management Automation System Implementation and Operations Guidance Document (ATMAS IGD)" instead of the original document name Recommended Functions and Performances of ATM Automation System (RFAP ATM AS) as the official name. The ATMAS TF/2 meeting agreed that the advance draft of ATMAS IGD to be taken forward to seek further comments and inputs from States and that the ICAO APAC Regional Office should issue a State Letter to circulate the advance draft of ATMAS IGD to States/Administrations, who should provide feedback within one month after receiving the State Letter.

Dissolution of APA TF

3.4.77 The ATMAS TF/2 meeting reviewed the Action Items arising from APA Task Force and agreed to consolidate APA TF work in ATMAS TF/3. Based on the proposal by APA TF/7, which was reviewed by ACSICG/8 and ATMAS TF/2, the CNS SG/25 adopted the **Decision CNS SG/25/16** (ATMAS TF/2/1(APA TF/7/1)) - *Dissolution of APA TF*. .

3.4.78 After dissolution of the APA TF, the ongoing APAC regional AIDC implementation work will be taken up by ATMAS TF while ACSICG would handle communications related issues. In order to integrate APA TF ToR into ATMAS TF ToR, the revised ATMAS TF ToR proposed by the ATMAS TF/2 was adopted by CNS SG/25 as **Decision CNS SG/25/17** *Revised ATMAS TF Terms of Reference* which was provided in Appendix P of the CNS SG/25 report.

Regional CNS Requirements

3.4.79 The ICAO Secretariat presented in CNS SG/25 the Regional CNS requirements specified in the three Volumes of ICAO APAC e-ANP, Seamless ANS Plan (Version 3.0, November 2019), and updates on the National Air Navigation Plan (NANP). The meeting participants were invited to review all CNS-related information affecting their administration in the e-ANP and provide feedback to ICAO APAC Regional Office to update as necessary.

3.4.80 Member States/Administrations were also invited to review all CNS facilities listed and CNS requirements specified in the e-ANP to verify that the information provided for their States/Administration was up-to-date and correct. Lastly, the Member States/Administrations should take into consideration to update e-ANP CNS relevant section when commissioning or decommissioning CNS systems in a timely manner and should inform ICAO to add/delete new/obsolete CNS facilities.

Study on Human Factor Issues of ATSEP

3.4.81 CNS SG/25 reviewed the summary on the outcomes of the various Ad-hoc group (*comprised of Eight (8) States/Administrations namely China, Hong Kong China, India, Indonesia, Japan, Republic of Korea, Singapore, and Thailand*) meetings held from its establishment in April 2021 in response to APANPIRG Conclusion C 31/15 for finding the left-out gaps and for preparing the regional ATSEP human factor guidance material. The planned tasks are to be completed by June 2022 as per the current timeline, and would present and submit the draft Regional ATSEP guidance material to CNS SG/26.

CNS/ATM systems cybersecurity

Regional Cybersecurity Webinar

3.4.82 ICAO Asia Pacific Regional Cybersecurity Webinar was held on 14 June 2021 via VTC. Total ten (10) presentations were delivered by experts from different parts of the world under different domains related to cybersecurity. A total of 69 questions were asked and more than 100 feedbacks for the Webinar were provided by participants with 100% positive responses.

3.4.83 It was commented in CNS SG/25 that CANSO had been active on the cybersecurity topic for ANSPs. The meeting invited and CANSO expressed their continued commitment to share more experience and the latest development, such as their cybersecurity guidance publications, in future ICAO APAC meetings.

Cybersecurity and Associated Requirements for CRV Operations

3.4.84 In CNS SG/25, USA addressed the implications for existing services and the CRV resulting from the Cybersecurity Webinar and future support of SWIM and other proposed services for the Region. The meeting was requested to review the various challenges in addressing cybersecurity and SWIM. There were some issues, which were not be assigned to any groups in ICAO APAC, for example, who would be responsible for the DNS and cybersecurity. The formation of independent bodies should be recommended to APANPIRG to look into cybersecurity across various domains from-end-to-end.

3.4.85 The CNS SG/25 meeting noted that certain basic cybersecurity building blocks e.g. IPv6 dedicated address blocks and DNS service for APAC Region had yet been addressed. The ICAO Secretariat informed the meeting that initial coordination with other ICAO Regional Offices on regional network cybersecurity requirements had been initiated. The Chair of CNS SG invited ICAO APAC Regional Office to follow up with ICAO Headquarter on the issue.

Information Security Requirements for Exchange of Information over IP

3.4.86 The ICAO Secretariat presented to CNS SG/25 on the information security requirements for the exchange of information over IP from PANS-IM and information security framework aspects. The requirements of the information security framework included scalable, minimum requirements to ensure trust, common practices based mainly on NIST and ISO provision. The scope and layered approach of the information security framework were elaborated with emphasising on the IPv6 dedicated block of addresses and the impact of the loss of information security on safety.

New technologies.

3.4.87 In response to APANPIRG's call on enhancing engagement with the industry, CNS SG/25 invited capable member States and various industry partners to share and update the latest progress in relevant areas, which covered UAS-Based PAPI Inspection Technology, Trial Inspection on CNS Outstations by Drone, Integrated Safeguarding Surface to Uphold Flight Safety While Facilitating Infrastructure/Building Developments by using advanced computer modelling, Standard Making on UAS-based Flight Inspection System and Data Link for UAS-Based Flight Inspection, Implementation of A-SMGCS Level IV Operation, Integration of ATM and UTM, Application of Knowledge Graph in Air Traffic Management.

CNS Points of Contact

3.4.88 The ICAO Secretariat informed the need for points of contact from States/Administrations who would respond in a timely, effective, and efficient manner was important in addressing CNS-related operational deficiencies notified to the Regional Office. Member States/Administrations were invited to review and update their existing nominated CNS Points of Contact to the APAC Regional Office, and each State/Administration was requested to provide points of contact of CNS contingency planning and administrative support for effective and efficient coordination in CNS aspect.

ADS-B Implementation in Mongolia (IP/03)

3.4.89 Mongolia informed the meeting of their plan on Automatic Dependent Surveillance-Broadcast (ADS-B) implementation, including the plan to use ADS-B to provide ATS surveillance separation in the airspace of Mongolia. With the ADS-B covering 95 percent of the whole territory of Mongolia, the use of GNSS in aviation was greater than ever and the reliability of GNSS was utmost important. GNSS outage was reported to be the main concern for their ATS surveillance, which a safety recommendation was issued with safety and risk assessments conducted to address. Despite the mandatory ADS-B flight equipage in the airspace of Mongolia, flexibility was allowed on the equipage to alleviate pressure on airlines due to the pandemic. Furthermore, Civil Aviation Authority of Mongolia provided essential training to develop their staff and personnel and brought forward the needs of innovation in a joint virtual workshop on applications of GNSS co-organized with the UN.

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Agenda Item 3: Performance Framework for Regional Air Navigation Planning and Implementation

3.5 MET

METEOROLOGY SUB-GROUP (MET SG) REPORT (WP/13)

3.5.1 The Twenty-Fifth meeting of the Meteorology Sub-Group, MET SG/25, convened online from 18 to 22 October 2021. For further consideration and possible adoption by APANPIRG, MET SG/25 formulated three Draft Conclusions related to (i) IWXXM[1], (ii) SWIM[2], and (iii) Space Weather Advisory information and one Draft Decision related to participation in the SWIM/TF[3].

IWXXM

3.5.2 To facilitate the Region-wide implementation of the IWXXM exchange, MET SG has overseen the MET/IE WG[4] development of an online register of current IWXXM exchange status. Considering that the provision of timely updates in the register required the attention of States/Administrations, including both the MET and CNS communities, APANPIRG/32 adopted the following Conclusion [based on Draft Conclusion MET SG/25-03]:

<table>
<tr><td colspan="3">Conclusion APANPIRG/32/11: Updating Online Register of IWXXM Exchange Status</td></tr>
<tr><td colspan="2">That, States/Administrations provide timely updates to the Online Register of IWXXM Exchange Status on the latest status of AMHS capability for IWXXM exchange among ROCs and NOCs, and the availability of IWXXM MET reports.</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td colspan="3">Why: To inform users and Regional OPMET Bulletin Exchange Scheme participants of each States' ability to generate and receive IWXXM over the required communication links and facilitate the Region-wide implementation of IWXXM exchange.</td></tr>
<tr><td>When: Now</td><td colspan="2">Status: Adopted by PIRG</td></tr>
<tr><td colspan="3">Who: ☐Sub groups ☒APAC States ☐ICAO APAC RO ☐ICAO HQ ☐Other: ROs</td></tr>
</table>

3.5.3 To further assist States in implementing IWXXM, APANPIRG/32 noted that MET SG/25 had approved the IWXXM Frequently Asked Questions (FAQs) resource developed by the MET/IE WG [Conclusion MET SG/25-01: *Publishing of IWXXM Frequently Asked Questions*, refers].

SWIM

3.5.4 APANPIRG/32 noted concerns raised in MET SG/25 regarding the implications of the SWIM TF/5 decision to specify the SWIM architecture and implementation approach will occur principally over the CRV[5]. MET service providers and airlines currently do not have access to the CRV.

[1] ICAO meteorological information exchange model
[2] System-Wide Information Management
[3] (ICAO APAC) SWIM Task Force
[4] The Meteorological Information Exchange Working Group (MET/IE WG) supports MET SG with the objective of increasing OPMET availability and reliability needed for flight planning (efficiency) and in-flight re-planning (safety) in support of the Global Air Navigation Plan (GANP) framework and the Aviation System Block Upgrade (ASBUs) methodology.
[5] Common aeRonautical Virtual private network (see also: https://www.icao.int/APAC/Pages/Join-CRV.aspx)

Furthermore, the CRV might not provide a cost-effective and efficient solution for APAC States to support the dissemination of highly data-intensive, non-sensitive MET information services directly to users, as envisaged in ICAO's global plans.

3.5.5 Because of the concerns raised above, MET SG/25 had proposed Draft Conclusion MET SG/25-07 for further consideration and possible adoption by APANPIRG/32. MET SG/25 had requested that APAC SWIM TF ensures it defines a SWIM architecture, corresponding technical infrastructure requirements, and implementation approach that continues to enable the cost-effective and efficient provision and consumption of MET information services to all users to support aviation safety and air navigation capacity and efficiency in consideration of use cases of highly data-intensive MET information services.

3.5.6 However, as previously discussed under (CNS) agenda item 3.4, APANPIRG/32 received no further comments from members. Therefore, APANPIRG/32 concluded that there was no need to consider further the Draft Conclusion MET SG/25-07 for reasons given in para. 3.4.33. Moreover, APANPIRG/32 was informed that action was underway by CNS SG and SWIM TF to address the MET SG/25 proposal effectively.

3.5.7 Furthermore, given that MET SG/25 had noted that MET service provision was not well represented in the APAC SWIM TF and, therefore, strongly recommended that the MET community increase participation in the SWIM TF meetings, APANPIRG/32 adopted the following Decision [based on Draft Decision MET SG/25-08]:

<table>
<tr><td colspan="3">Decision APANPIRG/32/12 : Meteorological expert contribution to SWIM/TF</td></tr>
<tr><td colspan="2">That, States consider identifying meteorological experts to contribute to the APAC SWIM/TF to ensure meteorological aspects are fully considered.</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td colspan="3">Why: Currently, few members of the SWIM/TF come from a meteorological background. The SWIM/TF would benefit from a greater understanding of the requirements and plans for meteorological information services.</td></tr>
<tr><td>When: Now</td><td colspan="2">Status: Adopted by PIRG</td></tr>
<tr><td colspan="3">Who: ☒Sub groups ☒APAC States ☐ICAO APAC RO ☐ICAO HQ ☐Other: ROs</td></tr>
</table>

Space Weather Advisory Information

3.5.8 On 5 November 2020, the ICAO space weather centres (SWXCs) updated the headings of bulletins used to disseminate space weather (SWX) advisory messages. The SWXCs use eight discrete headings associated with the two required forms[6] of the SWX messages and the four impact areas[7] of the space weather phenomena concerned. Furthermore, on 16 November 2021, the fourth ICAO designated SWXC, provided by the China-Russian Federation Consortium (CRC), commenced operations.

[6] IWXXM GML form and abbreviated plain language [ICAO Annex 3, Appendix 2, 6.1.2, refers]

[7] 1) high frequency (HF) radio communications; 2) communications via satellite; 3) GNSS-based navigation and surveillance; and 4) radiation exposure at flight levels [ICAO Annex 3, 3.8.1, refers]

3.5.9 Considering that States need to ensure the necessary systems and processes are in place to receive the SWX advisory messages at the required operational units within their areas of responsibility, APANPIRG/32 adopted the following Conclusion [based on Draft Conclusion MET SG/25-09]:

Conclusion APANPIRG/32/13 : Update on the provision of Space Weather Advisory	
That, States/Administrations urgently implement or adjust their systems to enable the forwarding of space weather advisories (in TAC and IWXXM form) as appropriate to users.	Expected impact: ☐ Political / Global ☐ Inter-regional ☒ Economic ☐ Environmental ☒ Ops/Technical
Why: CRC commenced operation with effect from 16 November 2021, and the WMO message headers for TAC and IWXXM format SWX advisory messages were updated to have separate headers for each space weather impact type.	
When: Now	Status: Adopted by PIRG
Who: ☐Sub groups ☒APAC States ☐ICAO APAC RO ☐ICAO HQ ☐Other: ROs	

Air Navigation Deficiencies – in the MET field

3.5.10 APANPIRG/32 noted that MET SG/25 had endorsed the *MET Deficiency Report Guide* and *MET Deficiency Identification Guide* (presented by the ad hoc group designated by MET/S WG[8]) as an available resource to facilitate further the identification and resolution of air navigation deficiencies in the MET field [Decision MET SG/25-05: *MET Deficiencies template and guidance*, refers].

3.5.11 In addition, Solomon Islands reported to MET SG/25 significant progress towards resolving the deficiency AP-MET-23[9] concerning MWO and SIGMET service. However, MET SG/25 noted unresolved issues concerning the content, format and timeliness of SIGMET and, therefore, requested Solomon Islands to conduct additional corrective action. Therefore, subject to Solomon Islands demonstrating full resolution of the deficiency, the Secretariat will coordinate further with Solomon Islands to report the resolution of the deficiency to APANPIRG [MET SG/25, Action No. 25/10 and 25/11, refer].

SIGMET Coordination

3.5.12 Several APAC States reported to MET SG/25 the positive outcomes of their international SIGMET coordination[10] activities. For example, the Collaborative SIGMET Issuance (CSI) project (by Japan, Lao PDR, Myanmar, Philippines, Thailand and Vietnam), SIGMET Coordination cum User Requirements Workshop (by Hong Kong, China), and several other bilateral and multilateral initiatives (by Australia, Fiji, Hong Kong, China, Indonesia, Malaysia, New Zealand, Philippines, Singapore and Solomon Islands) all supported the States' provision of harmonized SIGMET.

[8] The Meteorological Services Working Group (MET/S WG) supports MET SG with its objective to improve the quality of meteorological services in support of the global air navigation plan (GANP) framework and the aviation system block upgrade (ASBU) methodology

[9] *Description:* Lack of SIGMET issued for the Honiara FIR. *Secretariat note:* SIGMET information shall be issued by a meteorological watch office (MWO) [ICAO Annex 3, 7.1.1., refers]

[10] Conducted in response to ICAO Annex 3, 3.4.4 Recommendation.— *An MWO should coordinate SIGMET with neighbouring MWO(s), especially when the enroute weather phenomenon extends or is expected to extend beyond the MWO's specified area of responsibility, in order to ensure the provision of harmonized SIGMET*

3.5.13 APANPIRG/32 noted that, based on the progress and outcomes reported above, MET SG was further enhancing its support to the SIGMET coordination activities [Decision MET SG/25-06: *Further update on SIGMET Coordination guidance for enhancement of SIGMET coordination activities in the Region*, refers].

Regional Guidance Material

3.5.14 APANPIRG/32 noted that MET SG/25 had approved updates developed by the MET/R WG[11] to the *APAC Regional Guidance for Tailored Meteorological Information and Services to Support Air Traffic Management (ATM) Operations*. The updated guidance included updated examples of ATM-tailored MET information and Services provided by States and improved procedures for publishing and maintaining the guidance [Conclusion MET SG/25-10: *Update to Regional Guidance for Tailored Meteorological Information and Services to Support ATM Operations*, refers].

3.5.15 APANPIRG/32 also noted that MET SG/25 had approved updates developed by the MET/S WG to the *APAC Regional SIGMET Guide*. The updated guidance, which was harmonized with the ICAO EUR Region, included new material on SIGMET information in IWXXM format [Conclusion MET SG/25-11: *Updates to Regional SIGMET Guide*, refers].

Progress of Secretariat actions

3.5.16 APANPIRG/32 noted the MET SG/25 had reported that the late finalization of the MET Working Groups' reports and late publishing of the MET SG/25 discussion papers by the Secretariat had a negative impact on the progress of the MET SG work plan and, therefore, agreed to raise its concerns about the Secretariat resourcing to APANPIRG.

3.5.17 The Secretariat informed APANPIRG/32 that it was resolving the issues, mainly due to planning uncertainties caused by the pandemic, which greatly affected the Secretariat's workload and schedule. Furthermore, during 2020/21, the same APAC technical officers' resources were required to organize 10 ACCRPG meetings, 4 DGCA Information Sharing Sessions to progress the CART Report Recommendations implementation, and associated workload that landed with the Secretariat.

3.5.18 In addition, the Secretariat informed APANPIRG/32 it is considering the possibility of advertising for the secondment of an Aviation Meteorology subject matter expert.

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[11] Meteorological Requirements Working Group (MET/R WG) supports MET SG with its objective to improve safety, efficiency and sustainability of ATM operations by providing MET information needed to meet current and future requirements of the ATM system

Agenda Item 4: Regional Air Navigation Deficiencies

Status of Air Navigation Deficiencies in the Asia/PAC Region (WP/14)

4.1 Under the Terms of Reference, the APANPIRG had been regularly reviewing the status of implementation of the Asia Pacific Air Navigation Plan through its subgroups to identify and address the air navigation deficiencies according to the uniform methodology approved by the ICAO Council. In meeting this objective, APANPIRG facilitated the development and implementation of action plans by States to resolve identified deficiencies, where necessary.

Deficiencies in the ATM and Airspace Safety fields

4.2 The Meeting noted the List of Air Navigation Deficiencies in the ATM and Airspace Safety fields which was reviewed and updated by ATM/SG/9 (1 – 5 November 2021) and RASMAG/26 (20 – 23 September 2021) based on information provided by concerned States as follows:

a) Designation of Restricted Areas – Australia amendment (target date), Indonesia deletion;

b) Data Link Performance Monitoring – Fiji deletion, India amendment (remove reference to Kolkata FIR).

4.3 Regarding the deficiency recorded for Afghanistan for non-provision of safety related data, Large Height Deviation (LHD) reports had been submitted for the period from January to July 2021. RASMAG/26 had considered the deletion of the deficiency subject to receipt of further monthly reports in September and October 2021, but no further LHD reports were received.

4.4 After ATM/SG/9, on 16 November 2021, China provided updated information on the implementation status of the elements of the Regional Search and Rescue (SAR) Plan, indicating that China's overall implementation was 91%. Accordingly, and following consultation with the Chair of ATM/SG in accordance with APANPIRG procedure, the following deficiency was also recommended for deletion:

a) SAR Capability – China.

4.5 **Appendix A** to Report on Agenda Item 4 (reproduced from the same Appendix in WP/14) presented the updated List of Air Navigation Deficiencies in the ATM and Airspace Safety fields.

Deficiencies in the AOP field

4.6 The Meeting noted the List of Air Navigation Deficiencies in the AOP field which was reviewed and updated by AOP/SG/5 (29 June – 2 July 2021) based on information provided by concerned States as follows:

a) RESA provided at Nadi and Nausori International Airports, Fiji – deleted deficiency related to RESA.

b) RESA provided at Tribhuvan International Airport, Nepal – deleted deficiency related to RESA.

c) RESA provided at Tan Son Nhat International Airport, Ho Chi Minh City, Viet Nam - deleted deficiency related to RESA.

d) Nawabshah Airport was certified and incorporated in AIP Pakistan – deleted deficiency related to the certification and publication in AIP Pakistan certification status.

4.7 Post AOP/SG/5 Meeting:

a) Japan provided satisfactory evidences for the certification of all military aerodromes used for international operations. Following consultation with AOP/SG Chair in accordance with APANPIRG procedure, the deficiency was recommended for deletion from APANPIRG Air Navigation Deficiency List.

b) Fiji, Lao PDR and Japan provided satisfactory evidences on the promulgation of the information on the status of certification of aerodromes in their AIP. Following consultation with AOP/SG Chair in accordance with APANPIRG procedure, deficiencies in this regards for all five States are recommended for deletion from APANPIRG Air Navigation Deficiency List.

4.8 **Appendix B** to Report on Agenda Item 4 (reproduced from the same Appendix in WP/14) presented the updated List of Air Navigation Deficiencies in the AOP field.

Deficiencies in the CNS field

4.9 The Meeting noted the List of Air Navigation Deficiencies in the CNS field which was reviewed and updated by CNS SG/25 (18 – 22 October 2021). One outstanding issue was discussed in CNS SG/25, which was related to unreliability of AFS communication between Afghanistan and Pakistan, and there has been no further progress since last update in 2020. The CNS SG/25 Meeting did not identify any additional deficiencies in the CNS fields.

4.10 **Appendix C** to Report on Agenda Item 4 (reproduced from the same Appendix in WP/14) presented the updated List of Air Navigation Deficiencies in the CNS field.

Deficiencies in the MET field

4.11 The Meeting noted the List of Air Navigation Deficiencies in the MET field which was reviewed and updated by MET SG/25 (18 – 22 October 2021).

4.12 The Meeting noted that Solomon Islands reported progress towards resolution of the Deficiency concerning the provision of MWO and SIGMET service; index no. AP-MET-23. However, MET SG/25 noted unresolved issues (in the Solomon Islands' report) concerning the content, format and timeliness of SIGMET. Therefore, MET SG/25 requested Solomon Islands to conduct the additional, necessary corrective action and then coordinate with the Secretariat to report the resolution of the deficiency [MET SG/25 Report, Action No. 25/10 and 25/11, refer].

4.13 **Appendix D** to Report on Agenda Item 4 (reproduced from the same Appendix in WP/14) presented the updated List of Air Navigation Deficiencies in the MET field, including further details of the corrective action for Solomon Islands' Deficiency index no. AP-MET-23.

Update of Information in APANPIRG Air Navigation Deficiencies Database

4.14 The Meeting noted that it was the responsibility of States with Deficiencies to provide updates to ICAO APAC Office so that the information in the Deficiency database could be updated in a timely manner. The Regional Office would update the Deficiencies database based on written evidence provided by the respective States/Administrations and following the procedures as stipulated in the APANPIRG Procedural Handbook.

4.15 The Meeting reviewed the Air Navigation Deficiencies as presented in **Appendices A to D** to Report on Agenda Item 4 and endorsed as current list of APANPIRG Air Navigation Deficiencies. The Meeting adopted the following Conclusion:

Conclusion APANPIRG/32/14 – Update of Information in APANPIRG Air Navigation Deficiencies Reporting Form	
That, 1) ICAO to update the APANPIRG Air Navigation Database to reflect the information as presented in **Appendices A to D** to Report on Agenda Item 4. 2) States/Administrations be urged to: a) establish action plan with defined target dates for resolution of deficiencies, update the status on the corrective action taken and report progress in the Reporting Form of Air Navigation Deficiencies identified in ATM and Airspace Safety, AOP, CNS and MET fields as detailed in **Appendices A to D** to Report on Agenda Item 4; and b) update contact details of a Focal Point to coordinate actions to resolve the Deficiencies (https://portal.icao.int/def/Documents/FocalPoint_ANDef.pdf).	**Expected impact:** ☐ Political / Global ☐ Economic ☐ Environmental ☐ Inter -Regional ☒ Ops/Technical
Why: The resolution of air navigation deficiencies in the ATM and Airspace Safety, AOP, CNS and MET fields (in the APANPIRG database) have lacked satisfactory progress over several years, due in part to inadequate information in the Reporting Form, e.g., infrequent updates and lack of concise and concrete Corrective Action Plans with defined target dates	**Follow-up:** ☒Required from States
When: official reports providing full details of the corrective actions taken where deficiencies have been resolved be reported to APANPIRG's Sub-groups in 2022**.**	**Status:** Adopted by PIRG
Who: ☒Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other	

Updates on Efforts by China to Eliminate its ANS Deficiency of Airspace Classification (IP/05)

4.16 IP/05 provided the updated information on efforts taken by China to eliminate its APANPIRG deficiency on the airspace classification. Airspace classification was not implemented in China, which had been identified as one of the APANPIRG deficiencies. However, China had published its difference to Annex 11 in its Aeronautical Information Publication (AIP) according to relevant ICAO requirements with details provided in the paper.

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Agenda Item 5: Future Work Programme

APANPIRG Work Programme 2022-2023 (WP/15)

5.1 The meeting agreed with the tentative schedule of meetings for 2022 and 2023, placed in **Appendix** to the Report on Agenda Item 5, and noted that a formal letter of invitation would normally be issued by the Secretariat at least 3 months prior to each event, as well as posted on ICAO APAC website.

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Appendix

2022 – MEETINGS, WORKSHOPS AND SEMINARS		
Meetings	**Tentative Dates**	**Venue**
CRV OG/9	25 – 27 January	Virtual Meeting
AP-ADO/TF/3	2 – 4 February	Virtual Meeting
SRWG/6	1 – 3 March	Virtual Meeting
SURSG/2	15 – 17 March	Virtual Meeting
AP-AAWG/4	16 – 18 March	Virtual Meeting
DAPs WG/5	23 – 25 March	Virtual Meeting
MET/IE WG/20	28 – 30 March	Virtual Meeting
MET/S WG/12	30 March – 01 April	Virtual Meeting
PBNICG/9	March	Virtual Meeting
ACSICG/9	19 – 21 April	Virtual/Hybrid and/or Bangkok
AP-WHM/WG/4	27 – 29 April	Virtual/Hybrid and/or Bangkok
SAIOSEACG/1	April	Virtual/Hybrid and/or Bangkok
GBAS/SBAS ITF/4	1st Fortnight May	Virtual/Hybrid and/or Bangkok
SWIM TF/6	17 – 20 May	Virtual/Hybrid and/or Bangkok
SURICG/7	24 – 27 May	Virtual/Hybrid and/or Bangkok
APSAR/WG/7	24 – 27 May	Virtual/Hybrid and/or Bangkok
MET/R WG/11 and MET/ATM Seminar	May	Virtual/Hybrid and/or Bangkok
ATMAS TF/3	14 – 17 June	Virtual/Hybrid and/or Bangkok
AAITF/17	20 – 24 June	Virtual/Hybrid and/or Bangkok
AOP/SG/6	27 – 30 June	Virtual/Hybrid and/or Bangkok
CNS SG/26	4 – 8 July	Virtual/Hybrid and/or Bangkok
ATFM/SG/12	18 – 22 July	Virtual/Hybrid and/or Bangkok
PIRG/RASG Coordination Meeting	26 – 28 July	Virtual/Hybrid and/or Bangkok
MET/SG/26	July	Virtual/Hybrid and/or Bangkok
FIT-Asia/11	22 – 25 August	Virtual/Hybrid and/or Bangkok
RASMAG/27	12 – 15 September	Virtual/Hybrid and/or Bangkok
ATM/SG/10	17 – 21 October	Virtual/Hybrid and/or Bangkok
APANPIRG/33 and RASG-APAC/12	21 – 25 November (TBC)	Virtual/Hybrid and/or Bangkok
Aerodromes Seminar	14 – 16 December	TBD
VOLCEX/SG/8	TBC	Virtual/Hybrid and/or Bangkok
57th DGCA Conference	June/July (TBC)	Republic of Korea

2023 – MEETINGS, WORKSHOPS AND SEMINARS		
Meetings	**Tentative Dates**	**Venue**
CRV OG/10	January	Virtual/Hybrid and/or Bangkok
AP-ADO/TF/4	January	Virtual/Hybrid and/or Bangkok
AP-AAWG/5	February	Virtual/Hybrid and/or Bangkok
MET/IE WG/21	March	Virtual/Hybrid and/or Bangkok
MET/S WG/13	March	Virtual/Hybrid and/or Bangkok
PBNICG/10	March	Virtual/Hybrid and/or Bangkok
SRWG/7	March	Virtual/Hybrid and/or Bangkok
SURSG/3	March	Virtual/Hybrid and/or Bangkok
DAPs WG/6	March	Virtual/Hybrid and/or Bangkok
ACSICG/10	April	Virtual/Hybrid and/or Bangkok
SAIOSEACG/2	April	Virtual/Hybrid and/or Bangkok
ATFM/SG/13	April	Virtual/Hybrid and/or Bangkok
GBAS/SBAS ITF/5	May	Virtual/Hybrid and/or Bangkok
SURICG/8	May	Virtual/Hybrid and/or Bangkok
SWIM TF/7	May	Virtual/Hybrid and/or Bangkok
MET/R WG/12	May	Virtual/Hybrid and/or Bangkok
APSAR/WG/8	May	Virtual/Hybrid and/or Bangkok
AP-WHM/WG/5	May	Virtual/Hybrid and/or Bangkok
ATMAS TF/4	June	Virtual/Hybrid and/or Bangkok
AAITF/18	June	Virtual/Hybrid and/or Bangkok
AOP/SG/7	June/July	Virtual/Hybrid and/or Bangkok
MET/SG/27	July	Virtual/Hybrid and/or Bangkok
CNS SG/27	July	Virtual/Hybrid and/or Bangkok
FIT-Asia/12	July	Virtual/Hybrid and/or Bangkok
RASMAG/28	July	Virtual/Hybrid and/or Bangkok
PIRG/RASG Coordination Meeting	July/August	Virtual/Hybrid and/or Bangkok
ATM/SG/11	July/August	Virtual/Hybrid and/or Bangkok
APANPIRG/34 and RASG-APAC/13	September	Virtual/Hybrid and/or Bangkok
VOLCEX/SG/9	TBC	Virtual/Hybrid and/or Bangkok
58th DGCA Conference	TBD	TBD

ACRONYMS

AAITF	Aeronautical Information Services – Aeronautical Information Management Implementation Task Force
ACSICG	Aeronautical Communication Services (ACS) Implementation Co-ordination Group
AOP/SG	Aerodrome Operations and Planning Sub Group
AP-AA/WG	Asia/Pacific Aerodrome Assistance Working Group
APAC AIG	Asia Pacific Accident Investigation Group
AP-ADO/TF	Asia/Pacific Aerodrome Design and Operations Task Force
APANPIRG	Asia/Pacific Air Navigation Planning and Implementation Group
APSARWG	Asia Pacific Search and Rescue Working Group
APUASTF	Asia Pacific Unmanned Aircraft System Task Force
AP-WHM/WG	Asia/Pacific Wildlife Hazard Management Working Group
ATFM/SG	Air Traffic Flow Management Steering Group
ATM/SG	ATM/Sub Group
ATMAS TF	ATM Automation System Task Force
CNS/SG	CNS Sub-Group of APANPIRG
CRV OG	Common Regional Virtual Private Network (VPN) Operations Group
CSMMTC – MCIS	CAA Senior and Middle Managers Training Course (CSMMTC) on Managing Compliance with ICAO SARPs (MCIS)
DAPs WG	Mode S Downlinked Aircraft Parameters Working Group
FIT-Asia	FANS Interoperability Team-Asia
FPP SCM	Flight Procedure Programme Steering Committee
GBAS/SBAS ITF	GBAS and SBAS Implementation Task Force
ISTF	Ionospheric Study Task Force
MET/IE WG	Meteorological Information Exchange Working Group (of the MET/SG)
MET/R WG	Meteorological Requirements Working Group (of the MET/SG)
MET/SG	Meteorology Sub-Group of APANPIRG
MET/S WG	Meteorological Services Working Group (of the MET/SG)
PBNICG	Performance Based Navigation Implementation and Coordination Group
PSIDS	Pacific Small Islands Developing States – Aviation Needs Analysis
RACP/TF	Regional ATM Contingency Planning Task Force
RASMAG	Regional Air Space Monitoring Advisory Group of APANPIRG
SAIOSEACG	South Asia, Indian Ocean and Southeast Asia ATM Coordination Group
SEA/BOB ADS-B WG	South East Asia and Bay of Bengal Sub-regional ADS-B Implementation Working Group
SRWG	Spectrum Review Working Group
SURICG	Surveillance Implementation Coordination Group
SURSG	Surveillance data sharing Study Group
SWIMTF	System Wide Information Management Task Force
VOLCEX/SG	(APAC) Volcanic Ash Exercises Steering Group

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Agenda Item 6: Any other business

Update on Innovation (WP/18)

6.1 The Meeting reviewed the update on Innovation presented by the Secretariat. The Meeting noted the actions taken by the Council and the Organization in the implementation of A40-27 and encouraged the community to continue to engage with ICAO on the subject of Innovation. The Meeting also agreed to support ICAO's activities, through the participation of Member States and International Organizations in upcoming events on innovation.

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