



ICAO

*International Civil Aviation Organization*

**Sixth Meeting of the Asia/Pacific Air Traffic  
Management Automation System Task Force  
(APAC ATMAS TF/6)**

*Bangkok, Thailand 2-4 June 2025*

Agenda Item 3: Review of Outcomes of Relevant Meetings

## REVIEW OF RELEVANT MEETINGS

(Presented by the Secretariat)

### SUMMARY

The paper presents the relevant outcomes of the meetings held in 2024, including the Thirty-Fifth Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/35), the Twenty-Eighth Meeting of Communication, Navigation, and Surveillance (CNS SG/28), and relevant discussions in other meetings.

## 1. INTRODUCTION

1.1 The Thirty-Fifth Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/35) was held at the ICAO APAC Regional Office, Bangkok, Thailand, from 25 to 27 November 2024. The Meeting was attended by **163** participants from **24** Member States, **2** Special Administrative Regions of China, and **6** International Organizations. The APANPIRG/35 meeting report, working papers, information papers, and other resources can be accessed by the following link:

<https://www.icao.int/APAC/Meetings/Pages/2024-APANPIRG-35.aspx>

1.2 The Twenty-Eighth Meeting of the Communications, Navigation and Surveillance Sub-group (CNS SG/28) of APAC Air Navigation Planning and Implementation Regional Group (APANPIRG) was held at the ICAO APAC Regional Office, Bangkok, Thailand, from 1 to 5 July 2024. The Meeting was attended by **120** participants from **25** States/Administrations, **3** International Organizations, and **6** participants from industry partners. The Meeting report and other documents of the Meeting can be accessed at the ICAO APAC Meeting webpage at:

<https://www.icao.int/APAC/Meetings/Pages/2024-CNS-SG-28.aspx>

1.3 The Eleventh Meeting of the Aeronautical Communication Services (ACS) Implementation Coordination Group (ACSICG/11) was held at the ICAO APAC Regional Office, Bangkok, Thailand, from 19 to 22 March 2024. The Meeting was attended by **82** participants from **20** States/Administrations, **2** International Organizations, and **1** industry partner. The ACSICG/11 meeting report, working papers, information papers, and other resources can be accessed by the following link:

<https://www.icao.int/APAC/Meetings/Pages/2024-ACSICG11.aspx>

1.4 The Twelfth Meeting of the Common Aeronautical Virtual Private Network Operations Group of APANPIRG (CRV OG/12) was held from 23 to 26 January 2024 in Denarau Island, Fiji. The

Meeting was attended by **66** participants from **18** Member States/Administrations and **1** telecommunication provider. The meeting report, working papers, information papers, and other resources can be accessed by the following link:

<https://www.icao.int/APAC/Meetings/Pages/2024-CRV-Seminar-and-CRV-OG-12.aspx>

1.5 The Eighth Meeting of the System Wide Information Management Task Force (SWIM TF/8) was held from *8 to 10 November 2023* in ICAO Asia and Pacific Regional Office, Bangkok, Thailand. The Meeting was attended by **79** participants from **15** States/Administrations, **3** International Organizations and 1 telecommunication service provider. The meeting report, working papers, information papers, and other resources can be accessed by:

<https://www.icao.int/APAC/Meetings/Pages/2023-workingSessionandSWIMTF8.aspx>.

1.6 The Ninth Meeting of the System Wide Information Management Task Force (SWIM TF/9) was held from *14 to 17 May 2024* in ICAO Asia and Pacific Regional Office, Bangkok, Thailand. The Meeting was attended by **110** participants from **18** States/Administrations, **4** International Organizations and **2** industry partners. The meeting report, working papers, information papers, and other resources can be accessed by the following link:

<https://www.icao.int/APAC/Meetings/Pages/2024-SWIM-Seminar-and-SWIM-TF9.aspx>

1.7 The Fourth Meeting of the Surveillance Study Group (SURSG/4) was held in Hong Kong, China, from *30 to 31 May 2024*. The Meeting was attended by **63** participants from **12** States/Administrations, **1** International Organization, and **4** industry partners. The Meeting Report, Working Papers, Information Papers, and other resources can be accessed by following the link:

<https://www.icao.int/APAC/Meetings/Pages/2024-SURSG-4.aspx>

1.8 The APANPIRG/35 Meeting reviewed the outcomes of CNS SG/28 and noted with appreciation the following work done and achievements by the CNS SG and the contributory bodies reporting to APANPIRG through the CNS SG. APANPIRG/35 also discussed CNS-related matters and acted on the Report of the CNS SG/28 meeting and other papers presented under Agenda Item 3.4.

1.9 This paper summarized relevant information and updates with the highlight of the reviewed outcomes of relevant discussions of CNS SG/28 and APANPIRG/35.

## **2. DISCUSSION**

The actions taken by APANPIRG/35 & CNS SG/28 meetings on surveillance-related matters are highlighted below:

2.1 The CNS SG/28 meeting adopted the following 4 Conclusions and 2 Decisions:

<b>Reference</b>	<b>Subject</b>
<b>Conclusion CNS SG/28/01</b> (ACSICG/11/02)	- Review of APAC Region IWXXM Implementation Status/ Readiness
<b>Decision CNS SG/28/03</b> (Decision SWIM TF/08/02)	- Candidate Baseline SWIM Discovery Service Standard for APAC
<b>Decision CNS SG/28/04</b> (Decision SWIM TF/09/01)	- APAC SWIM Technical Infrastructure Profiles v1.0
<b>Conclusion CNS SG/28/08</b>	- Guidance Document for Implementation of

(GBAS-SBAS ITF 06/01)

GBAS in the APAC Region

**Conclusion CNS SG/28/09**

- Update of Flight Inspection Guidance Material (FIGM)

**Conclusion CNS SG/28/11**

(SURICG/9/2)

- Guideline on addressing inconsistencies of Aircraft Address (AD) and Target Identification (ID) between Surveillance Data and Flight Plan

2.2 The contents of the above Conclusions/Decisions adopted by the CNS SG/28 are provided in **Attachment A** to this paper.

2.3 Based on the outcome of discussions on various agenda items, the CNS SG/28 meeting developed 4 Draft Conclusions and 1 draft Decision for consideration by APANPIRG/35 Meeting, which were further adopted by APANPIRG/35. The Conclusions/Decisions adopted by APANPIRG/35 are as follows:

Reference	Subject
<b>Decision APANPIRG/35/6</b> (CNS SG/28/02 (SWIM/TF/08/01))	- Information Management Panel to Consider adoption of SWIM Discovery Service as a Global Standard for Globally Interoperable Service Discovery
<b>Conclusion APANPIRG/35/7</b> (CNS SG/28/05 (SRWG/8/1))	- Preparation for World Radiocommunication Conference - 2027 (WRC-27)
<b>Conclusion APANPIRG/35/8</b> (CNS SG/28/06 (SRWG/8/2))	- VHF COM Frequency Allotment Plan for APAC Region
<b>Conclusion APANPIRG/35/9</b> (CNS SG/28/07 (SRWG/8/4))	- Transition from the regular publication of Frequency List 2 to the global database of frequencies included in the Frequency Finder
<b>Conclusion APANPIRG/35/10</b> (CNS SG/28/10 (SURICG/9/1))	- Update of the General Strategy on Assignment of and Migration to SI Code in the APAC Region

2.4 All APANPIRG/35 Conclusions related to CNS are provided in **Attachment B** to this paper.

2.5 The following captures the highlights of previous discussions in APANPIRG/35 relevant to this Meeting.

2.6 Mr Raphael GUILLET, Chief RSO, verbally shared the progress of the Asia and Pacific (APAC) Air Navigation Service Provider (ANSP) Committee (AAC) after the CNS SG/27 Meeting. He informed that the next AAC Meeting will be held in Chengdu, China, from 8-10 July 2024 and encouraged APAC ANSPs to participate in any of the four workstreams under AAC.

2.7 USA shared details of work being done under **Work Stream (WS) 3: Contingency- Collaborate on business continuity and contingency plan** and informed that ICAO APAC/MID ATM

Contingency Planning Workshop (25 - 27 June 2024) and APAC ATM Contingency Tabletop Exercise (28 June 2024) held in ICAO APAC Office, Bangkok were an initiative of AAC Meeting.

2.8 It was informed that RASMAG/28 (21 – 24 August 2023) included, in its airspace safety analysis, a discussion of Large Height Deviation (LHD) Hot Spots. CNS SG was informed that AIDC is not a new technology but can significantly mitigate LHD incidents.

2.9 ICAO Secretariat informed that the Asia/Pacific ATS Inter-facility Data-link Communication Implementation Task Force (APA TF) was the responsible contributory body in the APAC region for supporting AIDC implementation. However, the APA TF was dissolved in 2021 and the remaining tasks of APA TF were passed over to the APAC ATM Automation System Task Force (ATM AS TF). ATM AS TF was invited to produce a pictorial map to show the latest update for the AIDC implementation against Hotspots in the Region in the next CNS SG/29 Meeting. **ACTION ITEM 28-1** ICAO Secretariat coordinated with ATMAS TF co-chairs requesting a way forward for this action item. Singapore informed that it would update the chart and that the original chart was provided in AIDC Task Force reports, which is now incorporated into ATMAS. Singapore requested the list of LHA updates.

2.10 It is to be noted that RASMAG produces the consolidated Report every year, which is provided in Appendix G of [the RASMAG/29 report](#). The LHD plots for the Asia region in terms of the various LHD category grouping and the hot spots description were shared with Singapore. Singapore updated the AIDC Implementation chart as requested by CNS SG/28. The chart produced is as follows:

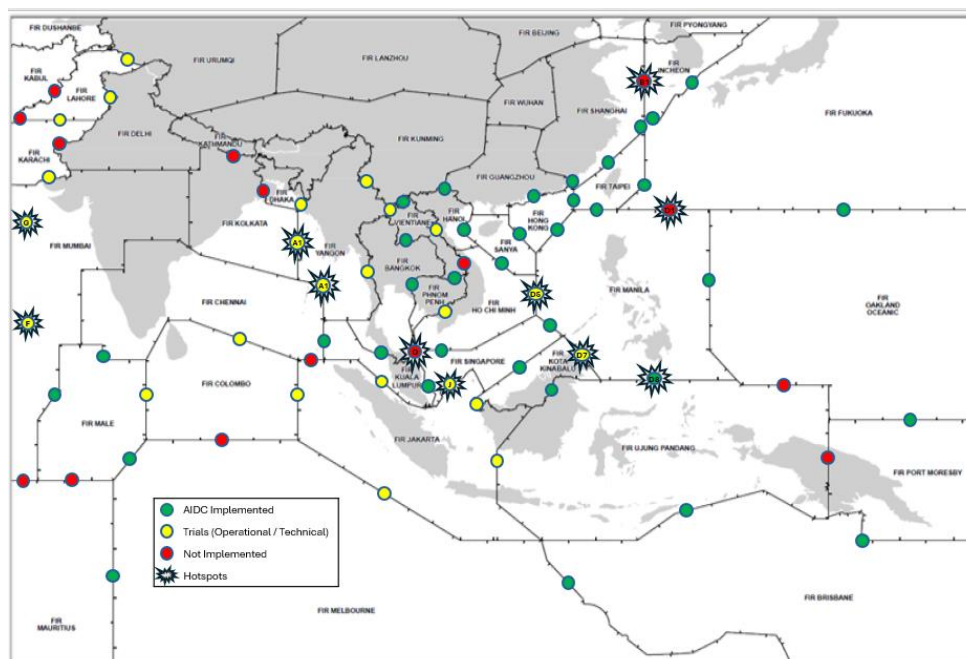


Figure 1- AIDC Implementation and RASMAG Hotspot Chart

2.11 It is to be noted that in the chart:

- 1) The FIR boundary representation may not be entirely accurate.
- 2) The AIDC implementation and hotspots are based on ACSICG/12 WP/08 [dated March 2025] and Appendix G to RASMAG/20 [dated Aug 2024]. The chart is a visual representation of the information contained in the two papers. The papers should be taken as the correct reference in the event of any discrepancy

*Note: Discrepancies in the reported implementation were noted in some boundaries between the two States in the ACSICG/10 Meeting. In such situations, the more advanced status is reflected.*

**Global and Regional updates relevant to CNS– Sec (WP/19)**

2.12 ICAO APAC Secretariat, on behalf of ICAO HQ, shared background information about global and regional levels, which were deemed relevant to Communications, Navigation, Surveillance and Spectrum, as well as Information Management. To promote a better understanding of the challenges and future development tendency in relevant provisions, the Meeting was invited to discuss how to share individual implementation experiences and latest updates at a global and regional level and deliberate on concerned topics/issues among the APAC Member States against the Terms of Reference (ToR) of CNS SG.

2.13 Background information about the Fourteenth Air Navigation Conference scheduled from 26 August to 6 September 2024 in Montréal with the theme “Performance Improvement Driving Sustainability” along with key outcomes of the Air Navigation World - ATM procedures for Today held from 23 to 27 October 2023 in Singapore were shared with the Meeting. The Meeting noted the *Future Connectivity for Aviation White Paper* and *User Requirements for Air Traffic Services by IATA* documents, along with updates about the CP-DCIWG, NSP, SP, FSMP, IMP, and ATMRPP job cards. Lastly, the progress of the ICNSS project was shared with the Meeting. The Meeting was requested to consider information provided in the paper during the future planning process of the CNS/ATM infrastructure and ANS services. The Meeting was requested to nominate/recommend experts, engage the industry for required expertise, and share experiences with CNS SG and its contributory bodies.

**The ICAO provisions in various Annexes and the Procedures for Air Navigation Services (PANS) concerning FF-ICE services and SWIM - Sec (WP/07)**

2.14 This paper presented information about the amendments of the ICAO provisions in various Annexes and the Procedures for Air Navigation Services (PANS) concerning the initial implementation of the flight and flow — information for a collaborative environment (FF-ICE) services and SWIM, applicable from 28 November 2024. State Letters informing the adoption and approval of relevant Annexes and PANS concerning FF-ICE services and SWIM were shared and listed for Meeting information. The Meeting noted that the guidance material is also expected to become available by this applicability date. To enjoy the full benefits of FF-ICE services, all States were encouraged to implement the minimum set of FF-ICE services as soon as possible following the ICAO provisions that become applicable on 28 November 2024.

2.15 SWIM TF Co-Chair shared details about the flight planning process and procedure changes in the FF-ICE environment.

2.16 In response to a question about proposed timelines to cater to a mixed-mode environment where both the current flight plan (FPL2012) and the FF-ICE flight plan co-exist, the Meeting was informed that a global cessation of the ICAO 2012 Flight Plan by 2034 is recommended by ICAO Secretariat for consideration of the AN-Conf/14 to be held from 26 August to 6 September 2024 in Montréal, Canada. If the AN-Conf/14 agrees to the recommendation, the timeline for a complete migration to the FF-ICE flight plan would be 2034. The ICAO Secretariat will share further information in the next Meeting. ACTION ITEM 28-3

2.17 USA reminded the need for close coordination and consultation with airlines, SITA and ARINC to ensure the smooth transition from FPL2012 to FF-ICE

**Outcome of ACSICG/11**

2.18 The CRV OG/12 Meeting requested that States/Administrations exchanging IWXXM data and/or FIXM data on CRV share their experience with bandwidth utilization to understand potential bandwidth requirements. Singapore informed that bandwidth utilization is not high based on their experience sharing IWXXM data on CRV Package A, 2 Mbps. Hong Kong China reported that their bandwidth utilization for IWXXM data is also moderate. The CRV OG/12 Meeting agreed that PCCWG will provide quarterly bandwidth utilization reports to the CRV OG Ad-hoc expert group as a periodic update.

*58th APAC DGCA Conference Action Items on CRV*

2.19 The CRV OG/12 Meeting noted the Air Navigation (ANS) related Action Items of the 58th Conference of Directors General of Civil Aviation Asia and Pacific Regions (DGCA/58) held in Dhaka, Bangladesh from 15 to 19 October 2023. The Meeting noted that the Conference formulated 51 Action Items and one action item, 58/23, related to CRV. By action item 58/23, the Conference urged States/Administrations to implement CRV by December 2023 and encouraged Pacific States to work with their partner States to facilitate CRV connectivity. The Meeting was suggested to review and take proper action on the Action Items related to CRV/Air Navigation derived from the DGCA/58 and identify Air Navigation issues, if any, that need to be brought to the attention of the DGCA/59 in 2024.

*Outcomes of CRV Seminar for the Pacific States*

2.20 In the CRV Seminar, PCCWG shared a new offer and technical equipment details to encourage Pacific States to join CRV. Cook Island, Samoa, and Tonga shared their strong intention to join CRV and that they should be able to sign service orders with PCCWG before 30 April 2024. The offer has been extended to 31 December 2024.

*ICAO ATN/AMHS Guidance Document Tree*

2.21 The CRV OG/12 Meeting noted the progress on the update of the ICAO ATN/AMHS Guidance Document Tree. The CRV OG/12 Meeting agreed that the CRV OG Ad-hoc Expert group would review and present the revised Tree to the next CRV OG meeting for review and endorsement. The CRV OG/12 Meeting advised sharing the Tree with ACSICG for further review and modifications for AMHS and other relevant AFS sections. Additionally, it was suggested to keep the Tree on the ICAO Secure portal or New Zealand hosted CRV portal.

*CRV New Service Implementation Process*

2.22 The CRV OG/12 Meeting noted the process for members with CRV services in operation and plans to add more connections/services to other new or existing CRV users. USA informed that as an action item owner for the task resulting from the CRV OG Ad-Hoc Expert Group, USA prepared the list of processes based on its experience in implementing new services with Indonesia and Papua New Guinea. The CRV OG/12 Meeting discussed and reviewed the process for implementing new services in CRV for AMHS and VoIP services, incorporating them in the CRV OG Operations Manual, and developing the process for new service connections in CRV.

2.23 The CRV OG/12 Meeting suggested that the CRV OG Ad-hoc Expert group develop the process for testing new SWIM services. Singapore suggested incorporating standard compression methods while adding the process into the CRV OG Operations Manual's design section along with additional guidance for VoIP compression, such as recommended standards by CRV OG.

*Outcomes of Ad-hoc Group Meetings*

2.24 The CRV OG/12 Meeting noted the outcomes of the three CRV OG Ad-Hoc Expert Group meetings held between CRV OG/11 and CRV OG/12 via Microsoft TEAMS. In addition, the Ad-hoc group also met with SWIM TF TLs quarterly. The CRV OG/12 Meeting noted the work of the Ad Hoc Expert Group continues to be extremely valuable, appreciated the ongoing contribution, and invited participation to the Ad-hoc group meetings.

*Adding A New Service to CRV*

2.25 The CRV OG/12 Meeting discussed the steps required to add a new service to the CRV Network. The first draft of the procedure prepared by the CRV OG Ad-hoc Expert group was presented to the CRV OG/12 Meeting to review the process of adding a new service to the CRV Network. The CRV OG/12 Meeting deliberated the process and observed that the process required further modifications. The CRV OG/12 Meeting requested that the CRV OG Ad-hoc Expert group modify the process to incorporate various discussions and suggestions shared during the CRV OG/12 Meeting.

*Publish the updated APAC CRV Operations Manual*

2.26 The CNS SG/28 Meeting noted the **Decision CRV OG/12/01 - Publish the updated APAC CRV Operations Manual**. The latest version of the documents has been published on [ICAO APAC e-docs](#) under CNS, [ICAO APAC CRV Secure portal](#), and on the [CRV portal](#) hosted by Airways New Zealand.

*CRV Implementation Plan – IP Address Block Allocated to CRV Users*

2.27 Singapore updated the latest status of the Internet Protocol (IP) address block allocated to CRV Users -Industry. To better manage and forecast if the existing IP address blocks are sufficient, the CRV OG/12 Meeting was requested to update CRV OG if there are new CRV Users - Industries intending to provide services over the CRV that need to be assigned IP address blocks. The CRV OG/12 Meeting also requested that all Air Navigation Service Providers (ANSPs) monitor and inform if the allocated IP address block is sufficient. The CRV OG/12 Meeting noted that as of Today, no additional industries have requested to join CRV and there are no issues with the number of IP addresses in any ANSP.

*National and Local CRV Points of Contacts*

2.28 Singapore suggested modifying the local and national point of contact responsibilities mentioned in CRV OG OM to accommodate the new CRV user's definition. Accordingly, the CRV Implementation plan may need further modifications to accommodate new CRV users definition. The CRV OG/12 Meeting requested that the CRV OG Ad-hoc Expert group incorporate this task into their agenda items.

*Outcomes of Ad-Hoc Governance Meetings*

2.29 New Zealand presented outcomes of the CRV OG Ad Hoc Governance meetings, held twice since its creation from the 2023 CRV Governance Workshop held in ICAO APAC Office, Bangkok on 31 January 2023. The CRV OG/12 Meeting noted that in the last two meetings, the Ad Hoc Governance group had adopted its Terms of Reference, discussed the Governance Models of REDDIG II and New PENS to understand other regional network's governance models, and resolved the problem, a problem Statement is being drafted.

*Outcomes of Third Ad-Hoc Governance Meetings*

2.30 The third Meeting of the CRV OG Ad-hoc governance group was conducted on 24 January 2024. The CRV OG/12 Meeting observed that after the second Ad-hoc Governance meeting,



States/Administrations were requested to share a list of daily, weekly, monthly, annual, or any other periodic tasks related to CRV performed in their States/Administrations. Only five states/administrations shared their responses. Based on the response analysis, the problem statement has been revised. However, information from other States/Administrations must be taken into consideration for further analysis. The CRV OG/12 Meeting requested that all States/Administrations that have not submitted the response should submit the response on priority. The fourth CRV OG Ad-hoc governance group meeting conducted on 3 May 2024 further reviewed the responses and the problem statement.

*Number of Subscribers to the New Zealand Hosted CRV Portal*

2.31 New Zealand shared information about the New Zealand hosted CRV Portal access. The CRV OG/12 Meeting noted future access to the portal would be limited to **three per State for the National CRV Point of Contact, the Nominated deputy to the National CRV Point of Contact, and the person responsible for updating the Asia-Pac Telecommunication Infrastructure Routing Plan.** The CRV OG/12 Meeting requested that the States/Administration share information about the latest CRV focal point to access the portal to CRV OG Co-chairs/ICAO Secretariat in a timely manner.

*Update the APAC CRV Implementation Table*

2.32 The CRV OG/12 meeting reviewed and updated the APAC CRV Implementation Table. The latest updates presented on the planning and implementation status of CRV were as follows:

- **Under Operation**

Australia, Bhutan, China, Hong Kong China, Fiji, India, Indonesia, Japan, Malaysia, Mongolia, Nepal, New Zealand, Pakistan, Philippines, PNG, Republic of Korea, Singapore, Thailand, the USA and Vietnam.

- **Under Provisioning**

Cambodia, French Polynesia, Macao China, New Caledonia, Myanmar, Sri Lanka

- **Hot Prospects in 2024**

Bangladesh, Brunei, Lao PDR, and Maldives

- **Not joined yet**

Afghanistan, DPRK, Kiribati, Marshal Islands, Micronesia, Nauru, Palau, Samoa, Solomon Islands, Timor Leste, Tonga, Tuvalu, Vanuatu, Russia, ICAO MID States

*CRV contract management*

2.33 Due to the confidentiality of the CRV contract management process, the Report under agenda item 7 is published on the [ICAO APAC CRV Secure portal](#) under the CRV group.

*CRV Network Yearly Service Review 2023*

2.34 PCCWG shared the Latest CRV Updates and CRV Network Yearly Service Review for 2023. *Monitoring and Analyzing CRV Network Traffic in Hong Kong, China*

2.35 Hong Kong, China introduced the CRV network traffic capturing equipment deployed in Hong Kong, China, and presented the insights and analysis derived from the captured network traffic. Based on the CRV network traffic captured between 8 and 14 January 2024 in Hong Kong China, there is no immediate need to upgrade bandwidth capacity, assuming no significant changes in bandwidth usage patterns in the near future. The CRV OG/12 Meeting agreed that the initiative by Hong Kong China is



excellent for understanding and analyzing CRV network traffic and encouraged other States/Administrations using CRV to conduct such experiments and share their similar experience.

*Bandwidth Extension of CRV to Meet Future Requirements*

2.36 PCCWG shared that various States/Administrations raised concerns to PCCWG on bandwidth capacity limitation to match future SWIM applications that might consume large amounts of data in SWIM TF meetings. PCCWG shared that bandwidth up to 2M has been quoted in the tender in 2015 to suit the initial requirement to build the CRV network. Other than the 2M options mentioned in the PCCWG price book, more pricing and bandwidth options can be provided for States/Administrations' consideration on request. As a rule of thumb, PCCWG further clarified the bandwidth upgrade cost concept. The CRV OG/12 Meeting requested that Member States/Administrations review the CRV bandwidth requirement and estimate the cost based on the conceptual diagram PCCWG shared. States/Administrations may contact PCCWG directly for further commercial discussion as needed.

*CRV Bandwidth Utilization Rate*

2.37 PCCWG presented the bandwidth utilization of each Member State/Administration in 2023. The CRV OG/12 Meeting reviewed the monthly traffic report and it was observed that the average utilization rate cannot share peak bandwidth utilization. Member States/Administrations were requested to make additional efforts to measure and monitor CRV network performance and share it with CRV OG regularly.

*The collection of CRV Requirements*

2.38 The CRV OG/12 Meeting conferred the expectations of SWIM TF from CRV OG regarding CRV network requirements for providing SWIM services over CRV. The new CRV contract management process also needs CRV requirements to accommodate other future services. The CRV Operations Manual has specific parameters for the CRV network performance, such as bandwidth, latency, jitter, packet loss, QoS and connectivity. To ensure new services and applications provide the CRV OG with sufficient information to decide on any potential changes to the CRV Network, CRV OG needs the application owner to give details. Due to SWIM TF and CRV OG's dependency on each other's information, the discussion is not progressing well.

2.39 To further progress the discussion, CRV OG/12 Meeting developed the first draft of a form, provided to describe the parameters that the CRV Network performs under, validation from the application or service owner that these parameters are acceptable or not and if not acceptable, the application or service owner is to provide in detail what is required.

2.40 The CRV OG/12 Meeting agreed that the first draft of the form will be sent to the Ad Hoc Expert Design Group before **31 January 2024** for comment and feedback, which has been completed. The ICAO Secretariat also shared the draft form with the SWIM Task Force Task Leads to fill in the form and for comments and feedback. CRV OG Ad-hoc Expert Group will review the duly filled form in the 3 May 2024 Meeting.

2.41 Based on the information shared in the form and outcomes of the joint event (trial/demo), **“CRV data requirements for SWIM Workshop”** was planned to be hosted by the USA in late August/September 2024. The workshop was recommended to be attended by CRV OG Experts and SWIM TF Task Leads. The workshop objectives would be to review the joint event's outcomes and analyse CRV performance and other crucial information to finalize the requirements and technical specifications for the new CRV contract management process. The workshop is being organised in Guam, USA, from 17-20 September 2024. CRV OG Co-Chair (Pacific) suggested sharing the *Proof of*

*Concept test document of CRV with SWIM TF to understand CRV's performance and capabilities by SWIM TF, which was completed.*

*MPLS/IP-Based Inter-Regional Connection*

2.42 The CRV OG/12 Meeting noted the current discussion status for the potential interconnection of CRV and REDDIG II and CRV and New PENS.

2.43 The CRV OG/12 Meeting recalled the efforts made for CRV and REDDIG II Interconnection and noted that the ICAO APAC Office has requested PCCW Global contact Cirion Technologies to discuss the interconnection proposal. However, despite several coordination in 2023, no concert technical proposal is ready to work further for CRV and REDDIG II interconnection.

2.44 After analysis of the issues, it seems that in the current CRV/REDDIG II contract, no clause requires PCCW Global/Cirion Technologies to establish interconnection with different regional networks. It was essential to include a requirement in the new service contracting processes to establish interconnections with other ICAO regional networks.

*Regional IP Network Interconnection Discussion*

2.45 PCCWG highlighted the status of the interconnection discussion between the CRV Network provider (PCCW Global) and the REDDIG II Network provider (Cirion, previously Lumen). PCCWG updated that they have offered the other high-level interconnection diagram to Cirion for comment, which is still awaiting Cirion's feedback. Concurrently, the CRV OG/12 Meeting requested that the ICAO Secretariat and PCCWG continue their efforts to reach relevant parties to progress the work on CRV-REDDIG II and CRV-New PENS interconnection. During the new CRV contract management process, CRV OG will incorporate the clause of interconnection with other regional networks into the contract document.

2.46 The CRV OG/12 Meeting suggested that the CRV OG Ad-hoc Expert group prepare use cases for regional interconnection of CRV and continue to work to support and encourage MID states to work with PCCWG to join CRV, with the support of the ICAO APAC Secretariat and the ICAO MID office, to implement CRV in the MID region.

*Updates on CRV Pioneer States' Remaining Contribution to the ICAO Managed Service Agreement (MSA)*

2.47 The paper shared information about the recent development of using the balance fund of the MSA. The CRV OG/12 Meeting was informed that to follow up on Conclusion ACSICG/10/02 (CRV OG/11/03) – Selection of Security Review Options 2 and 5 and Develop a ToR, for utilization of remaining money from CRV Project, the draft ToR was prepared by the CRV OG Ad-hoc Expert Group, which was reviewed by the ACSICG/10 Meeting and endorsed as Conclusion ACSICG/10/03 – Adoption of ToR for CRV Security Review using Options 2 and/or 5. Based on the adopted ToR, CRV OG Ad-hoc Expert Group invited quotations from different vendors to prepare cost estimates for the work. Further information about the cost estimate and way forward was shared by CRV OG Co-Chair (Asia) by WP/08.

*Cyber Security Review Update*

2.48 CRV OG Co-chair (Asia) presented WP/08 on an update on the proposed Cyber Security Review. The CRV OG/12 Meeting noted that the two cybersecurity organizations specializing in cybersecurity, namely Aura [Cyber Security Consultant - IT Risk Assessment - New Zealand](#) and ZX Security [Full Spectrum Security Services - ZX Security](#), had provided quotations. The CRV OG/12

Meeting discussed the way forward for generating two work orders for two tasks to Aura and ZX Security and requested the ICAO Secretariat to suggest the process to transfer money to Aura and ZX Security for assigned tasks if agreed to be appointed by the Meeting in the future.

2.49 ICAO Secretariat informed that it has coordinated with ICAO HQ CDI to share the formal process of transferring the 16 pioneer states' money to the third-party supplier. However, this could be seen as a way to use funds from an ICAO project to solo-source, thus circumventing ICAO regulations on procuring goods and services. ICAO CDI cannot proceed this way, and the funds must agree with ICAO provisions, as described in the MSA/Project Document. ICAO CDI suggested that as it is a Regional project, the best way to do this would be for the CRV OG to take the resolution to close the project, conclude that all objectives have been reached within this project, and advise the project management of ICAO APAC Regional Office. Then, the ICAO APAC Regional Office can request ICAO CDI to proceed to the closure of the project and will transfer the remaining funds requested to each contributor.

2.50 The CRV OG/12 Meeting acknowledged the significance of CRV's security assessment task, an APAC regional network. However, the process would be very complicated if ICAO CDI carried out the project. CRV OG is already working on a new CRV contractual process, which is a very extensive and exhaustive process and requires significant effort, time, and contributions. Given that the timeline to utilize the remaining funds is five years, from December 2022 to December 2027, the CRV OG/12 Meeting suggested not using MSA's remaining money for security assessment work. As the security assessment of CRV is essential and crucial for determining the security and trust of the APAC regional network, the CRV OG/12 Meeting agreed to incorporate this task in the new CRV contract management process.

#### *Japan Concept of Firewall Installation*

2.51 Japan presented the concept of introducing firewalls to systems connected to the CRV in Japan and supported discussions on future mandatory firewalls. Japan introduced the overview of the system in Japan for connecting the CRV to the CRV NID. Japan summarized that a uniform firewall mandate could be excessive, as it would be required even for systems that each Member State/Administration considers less necessary to have a firewall in place.

#### *Review ToR and Action Items*

2.52 The CRV OG/12 Meeting reviewed the ToR of CRV OG and further updated the Action Items for CRV OG. The revised ToR was adopted by ACSICG by **Decision ACSICG/11/01**.

#### *Update on AFTN/ATSMHS Routing Directory in APAC*

2.53 The paper presented a brief history of the ICAO APAC AFTN Routing Directory which was based on the existing AFTN circuits in the Asia and Pacific regions. The Meeting was reminded again that the region would follow the AFTN/ATSMHS routing directory during transition period, for inter-regional traffic, it is required to follow the existing entry/exit points and procedure. With the proposal from Russia to correct the tables "AFTN/ATSMHS ROUTING DIRECTORY ASIA AND PACIFIC REGIONS" for the UHHH and UUUU centres, ICAO APAC Office incorporated the amendment into the routing table. Additionally, due to the IT issue of the old computer for Routing Manager failed in January 2024, the new changes to the routing table (page 5-25) may be delayed.

#### *APAC AMHS Implementation Status from AMC*

2.54 The paper presented the AMHS implementation status information in Asia/Pacific Region updated in ATS Messaging Management Centre (AMC) (OPER 259) on 22 FEB 2024. All revised

AFTN/AMHS connections, links, and line speeds will be updated to the Communication Chart in AMC. The Meeting was invited to review and update information to AMC via AEROTHAI if necessary, including points of contact.

*PCAA Coordination with Eurocontrol AMC*

2.55 The paper updated the PCAA's coordination with Eurocontrol ATS Messaging Management Centre (AMC). Pakistan provides AMHS services and is responsible for worldwide distribution/routing of AMHS/AFTN traffic through 06 international circuits as per ICAO APAC Routing Directory. The Meeting was updated that in January 2023, Eurocontrol intimated that a new AMC version 5.1 is live on its portal and requested to nominate experts for registration on its portal. Eurocontrol registered three PCAA officers on its portal for getting AMC data. PCAA now can regularly upload AMC data on AMHS as per AIRAC cycle and is not facing any issues with the worldwide routing of AMHS / AFTN traffic.

*Space-Based Very High Frequency (VHF) Communication Services*

2.56 The paper summarized the progress of the technical and regulatory studies of space-based VHF communications (voice and data) in the frequency band 117.975-137 MHz in International Telecommunication Union ("ITU"), ICAO Future VHF Subgroup ("FVSG"), and ICAO Frequency Spectrum Management Panel ("FSMP"). The paper shared that there are two companies working in parallel to the launch prototype satellites with VHF payload for Proof-of-Concept (PoC) Demonstration between 2023 and 2025. To conduct the PoC demonstration, there will be a need for ICAO regional office to assign appropriate VHF frequencies so that verification tests could take place. The Meeting was invited to support the ICAO activities on space-based VHF at the FVSG and FSMP, and support the frequency assignments for proof-of-concept demonstration when the need arises.

2.57 Regarding the current plan for the proof-of-concept demonstration, the Meeting was informed that any ANSP interested in participating in the demonstration should engage directly with the two service providers and notify and coordinate with ICAO APAC for the frequency that can be used. ICAO Secretariat will maintain communication with the service providers to ensure the region stays updated on developments.

*AMHS Readiness Status for Supporting IWXXM Traffic in the APAC Region*

2.58 The paper summarized the AMHS readiness status for supporting IWXXM Traffic of the States/Administrations in the APAC Region, including States/Administrations that have no AMHS in operations, to facilitate the relevant Meteorological authorities/organizations with the dissemination of IWXXM messages accordingly. As of CNS SG/27, 14 States/Administrations provided their status on AMHS readiness and experience for supporting IWXXM Traffic with details. Although there has been a significant increase in the AMHS readiness for supporting IWXXM Traffic, the reporting gap was still identified, States/Administrations were urged to inform the ICAO APAC Regional Office on their readiness and implementation progress/plan of AMHS with FTBP as soon as possible. The Meeting updated the AMHS Readiness Table for Supporting IWXXM Traffic.

*APAC Region IWXXM Implementation*

2.59 To review the IWXXM implement status and gauge the readiness of the APAC Region for full implementation of IWXXM data exchange, the CNS SG/28 adopted the Conclusion: **Conclusion CNS SG/28/01 (ACSICG/11/02) - Review of APAC Region IWXXM Implementation Status/ Readiness.**

*Description of FAA AMHS SWIM Gateway and IWXXM Status*

2.60 The FAA informed that it is currently developing an AMHS SWIM Gateway (ASG) that will be implemented as an enhancement to the FAA’s operational AMHS to support the international exchange of XML-formatted messages encoded using the ICAO Meteorological Information Exchange Model (IWXXM). The effort and status of the ASG were summarised in the paper. The Meeting noted that it was anticipated that ASG development would be complete by Q3/2024, followed by internal testing and then external test with international partners. Operational implementation is dependent upon data production/consumption by the National Weather Service (NWS).

*PCAA Readiness for ICAO IWXXM Implementation and AMHS Transition to SWIM*

2.61 The paper presented Pakistan’s readiness of AMHS to support IWXXM and AMHS transition to SWIM. The Meeting noted that PCAA has initiated the implementation of the exchange of data in XML format to support the implementation of SWIM enable data sharing (IWXXM, AIXM and FIXM). The agreement has been reached with the OEM of AMHS for the exchange of meteorological data in IWXXM. Furthermore, PCAA has already replaced the Karachi-Mumbai AFTN data link with the AMHS / X-400 link to support the exchange of IWXXM data. Replacement of the Karachi-Beijing AFTN data link over TCP / IP/MPLS circuit link has been completed.

*Fiji AMHS & IWXXM Implementation Status*

2.62 The paper presented the update for Fiji to implement AMHS system to enable international exchange of the ICAO Meteorological Information Exchange Model (IWXXM) data for ROBEX IWXXM with the five (5) Regional OPMET Data Bank (RODB) in the Asia/Pacific region. The AMHS & IWXXM is expected to be commissioned in December 2024 to enable the Nadi RODB to exchange ROBEX IWXXM format and perform the TAC to IWXXM translation.

*AMHS Operation and Support of XML Based Messages*

2.63 The paper presented the current AMHS operation and its capability to support XML based messages. AMHS and its AFTN/AMHS address header based on ASCII is a critical address that allows messages to be distributed globally and is compatible with ATC automation systems. The paper analysed the future of AMHS operational requirements and AMHS to support future data distribution. The Meeting was informed that AMHS is a critical element in routing messages to their intended users using globally adopted and ICAO sanctioned AFTN addressing. Any system that plans to succeed/replace AMHS would likely need to support similar elements of AFTN address functionality.

*Leveraging TBO through regional SWIM services and AMHS*

2.64 Frequentis introduced the TBO with regional SWIM services and AMHS. The regional ATM operational SWIM services roadmap for TBO and the transition of the TBO mix mode were explained in detail. It was concluded that providing a consistent cloud-based ATM operational infrastructure and regional SWIM services will speed up the digital transformation towards TBO. The Meeting further discussed the topics of interest, including the information loss between FPL2012 and FIXM, the meaning of SWIM governance, the sunset date of FPL2012, etc. For more information, Member States/Administrations were welcome to contact Mr. Ulrich Kaage through email: Ulrich.KAAGE@frequentis.com

*AMHS/SWIM Gateway Progress & FF-ICE Migration Plans*

2.65 The SWAMWAY Study Group under the cooperation of ICAO EUR NAT/AST TF presented the AMHS/SWIM Gateway Progress & FF-ICE Migration Plans. With the sharing of SWAMWAY SG activities during 2023, the presentation introduced the progress and development of the AMHS/SWIM Gateway specification, identified use cases, next steps for the AMHS/SWIM Gateway, and European

strategy towards FF-ICE migration. The Meeting was invited to provide comments about the proposed use cases, identify potential synergies with EUR/NAT Region, and promote the exchange of information in terms of activities, projects, and initiatives with a common interest for APAC and EUR/NAT Regions.

*AFTN/AMHS Connection between APAC Region and Other Regions*

2.66 The paper summarised the status of AFTN/AMHS connection between APAC region and other regions (Europe, Mideast, Africa, North America, and South America) with reference to the information contained in ASIA/PAC ROUTING DIRECTORY and the COM Charts by EUROCONTROL AMC, which was reproduced from WP/16 of ACSICG/10. The Meeting noted that the connection between Beijing and Kuwait, and between Doha and Singapore have been initiated, but suspended for some time due to unexpected factors.

*Upgraded U.S. to Europe Connectivity*

2.67 The paper presented FAA's efforts, obstacles, and current status of replacing its current Time-Division Multiplexing (TDM) circuits to European partners with an IP network. In recognition of the coming obsolescence of TDM circuits, the FAA worked with its own service provider to procure a Multi-Protocol Label Switching (MPLS) Virtual Private Network (VPN) that would replace the current TDM circuits and shared the current progress. The Meeting noted that the implementation of MPLS service between the U.S. and the U.K. will allow for additional alternate routing of the U.K.-Singapore AMHS traffic with sufficient bandwidth to carry XML based messages in the future.

*Correspondence Group for AMHS to SWIM Transition*

2.68 Considering the lack of information for AMHS to SWIM transition at the regional level, the ACISCG/11 Meeting formed a Correspondence Group (CG) to study the transition strategy for the region by experts from volunteer States/Administrations, industry partners and concerned international organizations. This **AMHS to SWIM transition CG (ATSCG)** will study relevant issues, including the AMHS/SWIM gateway, guidelines, and profiles, focusing on developing use cases for different scenarios. The ATSCG will monitor the progress of the SWAMWAY Study Group of ICAO EUR NAT/AST TF.

*Other AFS-related topics*

2.69 The CNS SG/28 Meeting noted that the METP WG MIE approved the updated ICAO document Guidelines for implementing OPMET data exchange using IWXXM, Version 5, to assist States with implementing IWXXM. The ACISCG/11 Meeting requested the Secretariat to consider publishing the Guidelines on the CNS section of the ICAO APAC Office e-Documents webpage to increase awareness of the guidelines and ensure only the latest version is accessible to the communications experts.

2.70 It was informed that a group of operational COM experts from Australia, Fiji, Hong Kong China, Singapore, and the USA will develop educational material to manage the distribution of IWXXM information when primary AMHS link failure occurs.

2.71 It was noted that a group of communication and MET experts would develop a checklist of steps required to operationalize the IWXXM exchange.

**Outcomes of SWIM TF/8 and SWIM TF/9**

*Updates of APAC SWIM Technical Infrastructure Profiles*

2.72 Japan, Task 2 Lead, presented the updated draft of the APAC SWIM Technical Infrastructure Profiles document incorporating comments received from SWIM TF task leads and members after the SWIM TF/7. The modifications done on the previous draft version presented at the SWIM TF/7 were highlighted and the future plans were also shared. During the Meeting, feedback was provided on the draft APAC SWIM TI Profiles document, and several action items were adopted to refine the draft further in response to the comments.

2.73 In response to the clarifications about the term limited capabilities of CRV, Task 2 lead notified that the current available CRV subscription packages come with limited bandwidth and that there is a user type restriction to join CRV. ICAO Secretariat informed that CRV OG has already modified the definition of CRV users to include also others who are not ANSPs and that the non-ANSP users can join CRV following the procedure described in the CRV OG Operations Manual. PCCWG, the current CRV provider, shared that CRV has no bandwidth limitation. CRV users subscribing to any available packages can request more bandwidth at an additional cost based on their needs. The Meeting agreed to submit the request, through the ICAO Secretariat, to CRV OG to consider deliberating the enhancement of CRV bandwidth and the cost optimization associated with supporting operational SWIM implementation over CRV.

*Progress Update by S3TIG for the Joint Event of SWIM Demonstration over CRV and Surveillance Sharing in SWIM Trial*

2.74 The paper presented the progress update of the joint event of SWIM Demonstration over CRV and Surveillance Data Sharing in the SWIM Trial (the Joint Event).

*Election of Co-Chair*

2.75 Nominated by the USA and seconded by USA, Dr. Dr Amornrat Jirattigalachote, Strategic Planning Manager (Engineering), Policy and Strategy Management Bureau of AEROTHAI, was re-elected as Co-Chair of the SWIM TF in the SWIM TF/9 Meeting.

*Revision of APAC SWIM Technical Infrastructure Profiles*

2.76 Considering the benefits of making the draft version of APAC SWIM Technical Infrastructure Profiles available for States/Administrations to refer to as guidance to assist in their SWIM development and implementation, CNS SG/28 adopted **Decision CNS SG/28/04 (Decision SWIM TF/09/01) - APAC SWIM Technical Infrastructure Profiles v1.0.**

**Outcomes of SURSG/4 Meeting**

*Outcomes of Joint event of SWIM over CRV Demonstration and Surveillance data over SWIM Trial*

2.77 The Joint event of SWIM over CRV Demonstration (the demo) and Surveillance data over SWIM Trial (the trial) was a collaborative and intricate work of S3TIG. The Joint event was successfully conducted from 28 May to 29 May 2024.

2.78 The SURSG/4 Meeting noted that three scenario-based demonstrations were demonstrated with real-time data exchange among involved parties in the Joint event and the operational benefits brought by SWIM were showcased. The Meeting was informed that a Pseudo CRV network was established among participant States acting as Gateway EMS and Edge EMS. This network supported the demonstration and was noted to include both CRV-based SLA-guaranteed networks and internet-based networks.



2.79 The Meeting discussed the outcomes of the Joint event and agreed that with the successful completion of the Joint event, S3TIG can be dissolved. The S3TIG was dissolved by the SURSG/4 Meeting.

*Study on bandwidth used for ADS-B data being transmitted on SWIM CRV*

2.80 Hong Kong China shared the outcomes of the Study on bandwidth used for ADS-B data being transmitted on SWIM CRV. Thailand and Singapore requested Hong Kong China to capture and analyse ADS-B data supplied by their surveillance system as the current setup for the Joint event will be accessible for one month until the end of June 2024 for participants. Hong Kong China accepted the request.

*Use case of MET information services in SWIM demonstration for ATFM with surveillance data sharing*

2.81 The Meeting agreed that the demonstration scenario outlined the operational benefits of efficient MET information exchange and surveillance data sharing for improving traffic demand and capacity forecasting in ATFM. In addition, machine-readable MET and surveillance information in SWIM could be used directly in future ATFM Systems for automatic calculations and updates of landing slot allocations.

*CNS Deficiencies*

The CNS SG/28 reviewed the only outstanding issue on the list of Air Navigation Deficiencies in the CNS field, which was related to the unreliability of AFS communication between Afghanistan and Pakistan. The Meeting noted Pakistan had joined CRV and was actively coordinating with Afghanistan to restore the communication link. Pakistan shared the expectation of restoring the connection by the end of 2024.

**Outcomes of the SURICG/9 Meeting**

2.82 APANPIRG/35 reviewed the outcomes of SURICG/8, including the Sixth Meeting of the Mode S Downlinked Aircraft Parameters Working Group (Mode S and DAPs WG/6) and the Third Meeting of the Surveillance Study Group (SURSG/3). It adopted the **Conclusion APANPIRG/35/10 (CNS/SG/28/10 (SURICG/9/1)) - Update of the General Strategy on Assignment of and Migration to SI Code in the APAC Region** to amend the General Strategy on Assignment of and Migration to SI Code in the APAC Region. The revised General Strategy on Assignment of and Migration to SI Code was published on [ICAO APAC e-docs](#) under CNS.

2.83 APANPIRG/35 noted that the Frequency Finder (FF) program had been enhanced to address the issue of overlapping coverage of Mode S radars in adjacent ICAO regions, with a new function to hide radar coordinates and allow the owner (the State) to unhide, modify, or add new coordinates. It was also noted that the CNS SG/28 adopted a **Guideline on addressing inconsistencies of Aircraft Address (AD) and Target Identification (ID) between Surveillance Data and Flight Plan** by **Conclusion CNS/SG/28/11 (SURICG/9/2) - Guideline on addressing inconsistencies of Aircraft Address (AD) and Target Identification (ID) between Surveillance Data and Flight Plan**.

**Outcome of ATMAS TF/5 Meeting and ATM Automation System-related Issues**

2.84 APANPIRG/35 noted the Seminar on Air Traffic Management Automation Systems and the Fifth Meeting of the APAC Air Traffic Management Automation System Task Force (APAC ATMAS TF/5) held in Chengdu, China. ATMAS TF/5 updated the table of the ATMAS Status in the APAC

region, adopted the Conclusion ATMAS TF/05/01 - ATMAS IGD Edition 1.4 and formed an expert group within ATMAS TF to review the core AIDC messages in the IGD.

*Seminar on Air Traffic Management Automation System*

2.85 The Seminar on Air Traffic Management Automation System was organized in conjunction with the ATMAS TF/5 meeting on 4 June 2024. The objective of the Seminar is to facilitate the exchange of insights on the implementation and advancement of new technologies with ATM Automation Systems, both from the perspectives of Member States/Administrations and industries. It will underscore the significance of the Global Air Navigation Plan (GANP) and the relevant Aviation System Block Upgrades (ASBU).

*Global and Regional Updates on Related Issues*

2.86 The paper presented some background information at global and regional level which are deemed relevant to Air Traffic Management Automation System for review and action by the Meeting. The Meeting noted the discussions related to ATM Automation System on the Fourteenth Air Navigation Conference, Air Navigation World - ATM procedures, Future Connectivity for Aviation White Paper, User Requirements for Air Traffic Services by IATA, Job Cards of SP, Job Cards of CP-DCIWG, Job Cards of ATMRPP, Job Cards of IMP, ICNSS project. The ATMAS TF/5 meeting was invited to nominate/recommend experts, engage industry for required expertise, and share experiences with ATMAS TF. **ACTION ITEM 5-1**

*Considerations in Design of Integrated Arrival and Departure Manager for Hong Kong International Airport*

2.87 Hong Kong China presented the design considerations of an Integrated Arrival and Departure Manager (IAD) for the Hong Kong International Airport. It highlighted the enhanced features of the IAD and its integration with the air traffic management system to enhance efficiency and streamline decision-making processes for air traffic controllers in handling complex arrival and departure air traffic. The paper also introduced the Mixed-mode Runway Capacity Management & Traffic Off-loading, Red Lightning Warning at HKIA, Weather Mode & Weather Deviation Factor, and Integration with Approach Spacing Tool. The ATMAS TF/5 meeting agreed to consider incorporating the relevant design considerations of an Integrated Arrival and Departure Manager into the ATMAS IGD after implementation and verification. **ACTION ITEM 5-2**

*Repository of the ATMAS in APAC*

2.88 The paper presented the updated table of the ATMAS Status in the APAC region, the preliminary analysis of the current status, and invited States/Administrations to review and take necessary actions to make the regional repository. Since the State Letter for establishing the Air Traffic Management Automation System (ATMAS) Repository for APAC Region circulated on 21 October 2022, total 12 updates have been received from States/Administrations, namely Cambodia, Hong Kong China, Fiji, Lao PDR, Malaysia, New Zealand, Pakistan, Philippines, Republic of Korea, Singapore, Sri Lanka, and Thailand. The ATMAS TF/5 meeting reviewed and updated the information contained in the ATMAS Repository. **ACTION Item 5-3.** The updated ATMAS Repository will be discussed in WP/05 of this Meeting.

*Updates to the Guidance Material of Implementation of ATM Automation System*

2.89 China, Hong Kong China, and Singapore presented the revised draft (Edition 1.4) of the Air Traffic Management Automation System Implementation and Operations Guidance Document (ATMAS IGD). The new draft adds some subsections, describing enhanced functions of ATMAS and

experience about Cyber Security and SAT for consideration and endorsement by the ATMAS TF/5 meeting.

2.90 The Meeting noted regarding the enhanced function of ATMAS and implementation expedience of the system, China cooperated with the Ad-hoc working group had developed the draft (Edition 1.4) of the ATMAS IGD. The main amendments to this edition are amending words according to ICAO Doc 4444, and supplementing some subsections, which include CFL Predicted Detection Advisory, QNH Mismatch Warning, Suggested Cyber Security Devices Configuration, and Site Acceptance. The revised draft (Edition 1.4) of the ATMAS IGD has been circulated to Member States/Administrations for review and comments on 11 May 2024. Suggestions from New Zealand and Hong Kong China had been received and adopted for consideration and endorsement by this Meeting.

2.91 The ATMAS TF/5 meeting adopted the revised ATMAS IGD through **Conclusion ATMAS TF/05/01** - ATMAS IGD Edition 1.4.

*Review of Core AIDC Messages in AIDC Implementation and Operations Guidance Document (IGD) Based on Singapore's Implementation Experience*

2.92 Singapore proposed establishing a select AIDC group to reassess the core AIDC messages in AIDC IGD, drawing from Singapore's experience in the technical testing of exchanging ABI, CDN, and MAC messages. As different ATM automation systems have their own design considerations with respect to the handling of Field 15 (Route) of the Flight Plan, a possible solution would be to allow AIDC messages to be configurable with respect to the inclusion of Field 15. To achieve this, there will be a need to review of the core AIDC messages in the AIDC IGD to enable States in the APAC region to progress with AIDC implementation.

2.93 The ATMAS TF/5 meeting appreciated the experience sharing by Singapore and agreed to form an expert group within ATMAS TF to review the core AIDC messages in the IGD, China, Hong Kong China, Malaysia, Pakistan, Philippines and Singapore would join this group on voluntary basis, which will work in offline mode and conduct online Meeting when necessary, Singapore will act as the rapporteur of the group. ACTION ITEM 5-4 was completed, and the outcomes of the expert group will be discussed in WP/08 of this Meeting.

*AIDC Implementation Issues Report*

2.94 The ATMAS TF/5 meeting reviewed and discussed the consolidated implementation issues collected and presented by Indonesia with supports by India and Singapore. The Meeting was updated that there are no new reported AIDC implementation issues provided since the ATMAS TF/3, while few updates on AIDC implementation issues are reported from Australia (3 reports), India (12 reports) and Malaysia (9 reports). Indonesia and Singapore inform that there is no issue and updates during the ATMAS TF/4 to ATMAS TF/5 period. The number of AIDC implementation issues reported by Member States/ Administration, based on fault categories are as shown in the table below:

Fault Categories	ATMAS TF/5 (2024)		
	Issues Reported	Closed	Open
a. Communication Link	9	9	0
b. ATM System	65	56	9
c. AIDC Message	23	22	1
d. Airspace Design/Procedures	13	12	1
e. Other	6	4	2
<b>Total</b>	<b>116</b>	<b>103</b>	<b>13</b>

## **Regional implementation review and updates**

### Workshop on Seamless ANS Reporting Tool

2.95 APANPIRG/35 noted the outcomes of the ICAO Workshop on APAC Seamless ANS Reporting Tool held from 17 to 19 April 2024. The Meeting noted that the tool was new and under upgrade. It lacked several essential notification features. The corresponding team in the ICAO APAC Regional Office was working with the ICAO HQ IT team to improve the tool's functionality. States/Administrations were encouraged to provide suggestions for improvement.

### Guidance Document for achieving high resilience in Sustaining operations of Critical Aeronautical Infrastructure

2.96 APANPIRG/35 noted that Hong Kong China shared their offer to host the Workshop on High Resilience in Sustaining Operations of Critical Aeronautical Infrastructure.

## **Cybersecurity of CNS/ATM systems**

2.97 APANPIRG/35 noted that the ICAO HQ team would provide a brief about the Manual on Information Security, Doc 10204, in the [Air Navigation Cyber Resilience Workshop and Tabletop Exercise \(TTX\)](#) to be held in Bangkok, Thailand, from 02 – 04 December 2024. Furthermore, the TFP would plan other activities to support States in understanding and implementing the recommendations defined in Doc 10204.

## **CNS Works and Other Business**

### CNS Points of Contact

2.98 CNS SG/28 reviewed the CNS Points of Contact of Member States and requested States/Administrations to update points of contact of CNS contingency planning and administrative support for effective and efficient coordination in the CNS aspect.

### Additional CNS events in 2024

2.99 APANPIRG/35 noted information about four additional events organized by the ICAO APAC Office besides regular CNS meetings in 2024. APANPIRG/35 noted key outcomes and significance of the ICAO APAC Flight Inspection and Procedure Validation (FIPV) Seminar held from 30 July to 1 August 2024, the ADS-B Implementation Workshop held from 14 to 16 August 2024, the Seminar on Frequency Use from 16 to 18 September 2024 and System-Wide Information Management (SWIM) Working Session from 6 to 8 November 2024 in Jakarta, Indonesia. It was noted that Cybersecurity TTX would be organized from 2 to 4 December 2024 at the ICAO APAC Office in Bangkok, Thailand.

### **Feasibility Study and Trial of Using Drone to Enhance Efficiency in Flight Inspections at the Hong Kong International Airport (WP/21)**

2.100 Hong Kong China shared information about their initiative supported by the Flight Inspection Center of the Civil Aviation Administration of China (CAAC FIC) in exploring the use of drone technology to carry out part of flight inspections at the Hong Kong International Airport (HKIA). Hong Kong China informed about two trials conducted at the HKIA in August 2023 and May 2024 with the support of CAAC FIC. It was added that the trials showcased the utilization of drones for part of flight inspection on navigational aids to be more efficient in deployment with increased flexibility in flight maneuvers and reduced carbon emissions. In addition, during unpredictable weather conditions, drones

demonstrated their versatility by quickly adapting to the limited time window and effectively executing the mission.

2.101 Hong Kong China informed that based on the successful experience of the two trials, HKCAD would continue to collaborate with the CAAC FIC and relevant stakeholders to conduct further studies on drone utilization to carry out part of the flight inspection, complying with the relevant standards and requirements. HKCAD would also closely monitor the development of relevant ICAO standards and guidelines to leverage the benefits of drones in conducting flight inspections with greater efficiency and flexibility.

**Enhancing Air Navigation Cooperation between Malaysia and India in the Bay of Bengal- Malaysia (IP/23)**

2.102 Malaysia informed that the first Meeting of the Air Navigation Services Consultative Committee (ACC) between Malaysia and India was held on 12 June 2024 in Kuala Lumpur, Malaysia. The objective of this Meeting was to enhance bilateral cooperation in air navigation services and to address key issues to improve the safety and efficiency of air traffic management between the two countries. Malaysia presented the key discussions and agreements reached during this Meeting. The Meeting was encouraged to continue bilateral cooperation and regular meetings to monitor progress and address emerging issues in air navigation services.

**3. ACTION BY THE MEETING**

3.1 The Meeting is invited to:

- a) note the outcome of the APANPIRG/35, CNS SG/28, and its contributory bodies, and take any necessary follow-up actions;
- b) the way to maintain - AIDC Implementation and RASMAG hotspot Chart in the future; and
- a) discuss any relevant matter as appropriate

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ATMAS TF/6  
Attachment A to WP/02

List of Conclusions/Decisions adopted by CNS SG/28 on behalf of APANPIRG on Technical Matters

<b>Conclusion CNS SG/28/01 (ACSICG/11/02) - Review of APAC Region IWXXM Implementation Status/ Readiness</b>	
What: States / Administrations provide ICAO an update on the status and readiness dates for the following: (a) AMHS with FTBP/IHE and configuration for single body part; (b) AMHS connection(s) will have sufficient capacity to support IWXXM exchange;	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: As per Amendment 79 to Annex 3 (applicable November 2020), States/ Administrations are required to exchange meteorological information in IWXXM form.	Follow-up: <input checked="" type="checkbox"/> Required from States
When: 05-Jul-2024	Status: Adopted by Subgroup.
Who: <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other: XX	

<b>Decision CNS SG/28/03 (Decision SWIM TF/08/02) Candidate Baseline SWIM Discovery Service Standard for APAC</b>	
What: To position the SWIM Discovery Service (SDS) specification as a candidate baseline standard for APAC SWIM implementation.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: A candidate baseline standard for SDS is needed to support APAC SWIM implementation within the regionally-agreed target implementation timeframe of 2024-2030.	Follow-up: <input type="checkbox"/> Required from States
When: 5-Jul-24	Status: Adopted by Subgroup
Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other: SWIM TF	

<b>Decision CNS SG/28/04 (Decision SWIM TF/09/01) –APAC SWIM Technical Infrastructure Profiles v1.0</b>	
What: <a href="#">The APAC SWIM Technical Infrastructure Profiles v1.0</a> is adopted as a living document for immediate use by APAC States/Administrations.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: To assist APAC States/Administrations in their SWIM development and implementation,	Follow-up: <input type="checkbox"/> Required from States

ATMAS TF/6  
Attachment A to WP/02

List of Conclusions/Decisions adopted by CNS SG/28 on behalf of APANPIRG on Technical Matters

guidance specific to the operational environment within APAC is required. The draft APAC SWIM Technical Infrastructure Profiles v1.0 is matured enough to be immediately used by APAC States/Administration.	
When: 5-Jul-24	Status: Adopted by Subgroup
Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: SWIM TF	

<b>Conclusion CNS SG/28/08 (GBAS-SBAS ITF 06/01) - Guidance Document for Implementation of GBAS in the APAC Region</b>	
What: <a href="#">The Guidance document for the implementation of GBAS in the APAC Region</a> developed by the APAC GBAS/SBAS ITF is adopted.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: To provide guidance to States for the implementation of GBAS	Follow-up: <input type="checkbox"/> Required from States
When: 5 Jul 2024	Status: Adopted by CNS SG
Who: <input checked="" type="checkbox"/> CNS Sub group <input type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other:	

<b>Conclusion CNS/SG/28/09 - Update of Flight Inspection Guidance Material (FIGM)</b>	
What: That, <a href="#">the Edition 4.0 of the Flight Inspection Guidance Material (FIGM)</a> is adopted.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: The FIGM is subject to regular review and update in the light of on-going development of flight inspection standards and recommended practices.	Follow-up: <input checked="" type="checkbox"/> Required from States
When: 5-Jul-24	Status: Adopted by Subgroup
Who: <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other:	

<b>Conclusion CNS/SG/28/11 (SURICG/9/2) - Guideline on addressing inconsistencies of Aircraft Address (AD) and Target Identification (ID) between Surveillance Data and Flight Plan</b>
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ATMAS TF/6  
Attachment A to WP/02

List of Conclusions/Decisions adopted by CNS SG/28 on behalf of APANPIRG on Technical Matters

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What: <a href="#">APAC guideline on addressing inconsistencies of ICAO Aircraft Address (AD) and Target Identification (ID) between Surveillance Data and Flight Plan</a> is adopted.		Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: The guideline consolidated the outcomes of the Workshop on ICAO Aircraft Address and Target Identification between Surveillance Data and Flight Plan held in June 2023.	Follow-up: <input type="checkbox"/> Required from States	
When: 05-July-24	Status: Adopted by Subgroup	
Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other: XXXX		

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A List of Conclusions adopted by APANPIRG/35 Meeting related to CNS

<b>Decision APANPIRG/35/6</b> ( <i>Decision CNS SG/28/02 (Decision SWIM TF/08/01)</i> ) - The <b>Information Management Panel considers the adoption of SWIM Discovery Service as a Global Standard for Globally Interoperable Service Discovery.</b>		
What: To propose to the Information Management Panel (IMP) to consider adopting the SWIM Discovery Service (SDS) as a global standard for globally interoperable service discovery.	Expected impact: <input checked="" type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical	
Why: Considering that APAC regional SWIM will also be part of global SWIM and that SDS was studied and tested by the SWIM TF, the consideration of IMP on the possible adoption of SDS as a global standard is required to ensure cross-regional interoperability of SWIM service discovery,	Follow-up: <input type="checkbox"/> Required from States	
When: 27-Nov-24	Status: Adopted by PIRG	
Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input checked="" type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: SWIM TF		

<b>Conclusion APANPIRG/35/7</b> ( <i>Conclusion CNS SG/28/05 (SRWG/8/1)</i> ) - <b>Preparation for World Radiocommunication Conference - 2027 (WRC-27)</b>		
That, States, a) assign high priority to aeronautical spectrum management; b) participate in the development of the ICAO Position for WRC-27; c) participate in the development of States' positions for WRCs at the national level to ensure support for the ICAO Position; d) ensure, to the extent possible, that, aviation representatives are included in States delegations to the APAC Telecommunity (APT) Conference Preparatory Group Meetings and at WRCs; e) to nominate an ICAO designated focal point or contact person for aviation issues related to the WRC-27; and f) ensure participation of the designated focal point or contact person at the ICAO Regional Preparatory Group Meetings for WRC-27, APT Conference Preparatory Group Meetings for WRC-27, and at WRC-27.	Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical	
Why: a) implement Assembly Resolution A41-7; b) support the early development and dissemination of the draft ICAO Position; c) actively participate in the preparatory work of the ITU and the Meetings of APT to ensure the development of proposals by the regional telecommunication organizations to the conference are in line with the ICAO Position;	Follow-up: <input type="checkbox"/> Required from States	

ATMAS TF/6  
Attachment B to WP/02

A List of Conclusions adopted by APANPIRG/35 Meeting related to CNS

When: 27-Nov-24	Status: Adopted by PIRG
Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: SRWG	

**Conclusion APANPIRG/35/8 (Conclusion CNS SG/28/06 (SRWG/8/2)) - VHF COM Frequency Allotment Plan for APAC Region**

What: The VHF COM Frequency Allotment Plan for the APAC Region is adopted.	Expected impact: <input checked="" type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: Per discussion from SRWG, the Region should simplify the VHF COM Frequency Allotment Plan and clarify the function of the twelve frequencies for inclusion in the next edition of the Frequency Guidance Material (Management Manual).	Follow-up: <input type="checkbox"/> Required from States
When: 27-Nov- 24	Status: Adopted by PIRG
Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: SRWG	

**Conclusion APANPIRG/35/9 (Conclusion CNS SG/28/07 (SRWG/8/4)) - Transition from the regular publication of Frequency List 2 to the global database of frequencies included in the Frequency Finder**

What: Transition from the regular publication of Frequency List 2 to the global database of frequencies included in the FF is adopted	Expected impact: <input checked="" type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: The regular publication (currently once a year at the end or beginning of the year) of the Frequency List 2 i.e. List of facilities in the band 108 - 117.975 MHz and 960 - 1215 MHz will no longer be required as the global database of frequencies included in the FF would provide an up-to-date status of frequencies assigned or used by States/Administrations.	Follow-up: <input type="checkbox"/> Required from States
When: 27-Nov-24	Status: Adopted by PIRG
Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: SRWG	

A List of Conclusions adopted by APANPIRG/35 Meeting related to CNS

<b>Conclusion APANPIRG/35/10</b> ( <i>Conclusion CNS/SG/28/10 (SURICG/9/1)</i> ) - <b>Update of the General Strategy on Assignment of and Migration to SI Code in the APAC Region</b>		
That:	<p>1. The ICAO APAC regional office will manage the assignment of II codes 14 and 15 and their matching SI codes like the rest of the II and SI codes.</p> <p>2. <a href="#">Revised General Strategy on Assignment of and Migration to SI Code</a> is adopted.</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global</p> <p><input checked="" type="checkbox"/> Inter-regional</p> <p><input type="checkbox"/> Economic</p> <p><input type="checkbox"/> Environmental</p> <p><input checked="" type="checkbox"/> Ops/Technical</p>
Why: A study by SURICG concluded that reservation of II codes 14 and 15 and their matching SI codes for research/test radars and military radars on a region-wide basis is not practicable in APAC.	<p>Follow-up: <input type="checkbox"/> Required from States</p>	
When: 27-Nov-24	Status: Adopted by PIRG	
Who:	<input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other: XXX	

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