*International Civil Aviation Organization*

**Eighth Meeting of Aeronautical Communication Service Implementation Co-ordination Group of APANPIRG (ACSICG/8)**

*Video Teleconference, 21 – 23 June 2021*

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**Agenda Item 2:** Review outcomes of relevant meetings

## REVIEW OF RELEVANT MEETINGS

(Presented by the Secretariat)

**SUMMARY**

This paper presents the relevant outcomes of the Thirty First Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/31), actions on the works accomplished by Seventh Meeting of the Aeronautical Communication Services Implementation Coordination Group (ACSICG/7), Sixth Meeting of the Asia/Pacific ATS Inter-Facility Data-Link Communication Implementation Task Force (APA TF/6), Fourth Meeting of the APAC SWIM Task Force (SWIM TF/4) and relevant discussions in other meetings on Aeronautical Fixed Service and ATS Interfaculty Data Communication (AIDC) related matters.

## 1. INTRODUCTION

1.1 The Thirty-first Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (**APANPIRG/31**) was held from *14 to 16 December 2020* via video teleconference. The Meeting was attended by 193 participants from 23 Member States, 2 Special Administrative Regions of China, and 8 International Organizations (AAPA, ACI, CANSO, IATA, ICAO, IFALPA, IFATCA and IFATSEA). APANPIRG/31 meeting report, working papers, information papers, and other resources can be accessed by following link:

https://www.icao.int/APAC/Meetings/Pages/2020-APANPIRG31.aspx.

1.2 The Twenty Fourth Meeting of the Communications, Navigation and Surveillance Sub-group (**CNS SG/24**) of APANPIRG was held from *30 November to 4 December* 2020 via video teleconference. The meeting was attended by 176 participants from 26 States/Administrations and 5 International Organizations namely CANSO, EUROCONTROL, IATA, IFATCA and IFATSEA, plus 26 participants from industry partners. CNS SG/24 meeting report, working papers, information papers, and other resources can be accessed by following link:

https://www.icao.int/APAC/Meetings/Pages/2020-CNS-SG24.aspx.

1.3 The Seventh Meeting of the Aeronautical Communication Services Implementation Coordination Group (**ACSICG/7**) of CNS SG was held from *21 July to 23 July 2020* via video teleconference. The meeting was attended by 95 participants from 19 States/Administrations and 01 International Organization and representatives from 02 industries (Frequentis and NCS). The ACSICG/7 meeting reviewed the outcomes of the Seventh Meeting of the Common aeRonautical

Virtual Private Network Operations Group (CRV OG/7) and took follow-up actions. ACSICG/7 meeting report, working papers, information papers, and other resources can be accessed by following link:

https://www.icao.int/APAC/Meetings/Pages/2020-ACSICG7.aspx.

1.4 The Sixth Meeting of the Asia/Pacific ATS Inter-Facility Data-Link Communication Implementation Task Force **(APA TF/6)** of CNS SG was held from 14 July to 16 July 2020 via Video Tele-Conference (VTC). The meeting was attended by 75 participants from 13 States and one International Organization (Bangladesh, Cambodia, China, India, Indonesia, Lao PDR, Malaysia, Pakistan, Philippines, Singapore, Sri Lanka, Thailand, USA and IFATCA). APA TF/6 meeting report, working papers, information papers, and other resources can be accessed by following link:

https://www.icao.int/APAC/Meetings/Pages/2020-APA-TF6.aspx

1.5 The Fourth Meeting of the APAC SWIM Task Force (**SWIM TF/4**) was held from *3 to 6 November 2020* via video teleconference. The meeting was attended by 135 participants from 17 States/Administrations, 3 International Organizations namely IATA, IFALPA, IFATCA and 5 Industry partners namely, Atlas Air, Cirium, Frequentis, PCCW Global and Snowflake. SWIM TF/4 meeting report, working papers, information papers, and other resources can be accessed by following link:

https://www.icao.int/APAC/Meetings/Pages/2020-SWIM-TF4.aspx.

1.6 The APANPIRG/31 meeting reviewed the outcomes of the CNS SG/24, noted with appreciation the work done and achievements by the SG and the contributory bodies reporting to APANPIRG through the SG, the meeting discussed CNS related matters and took following actions on the report of CNS SG/24 meeting and other papers presented under Agenda Item 3.4.

1.7 This paper summarized relevant information and updates with the highlight on the reviewed outcomes of ACSICG/7, APA TF/6, ATMAS TF/1, SWIM TF/4 and relevant discussions of other meetings of CNS SG/24 and APANPIRG/31.

## 2. DISCUSSION

The actions taken by APANPIRG/31 meeting on Aeronautical Fixed Service (AFS) related matters are highlighted below:

2.1 The CNS SG/24 meeting adopted following **8** Conclusions and **5** Decisions:

| Reference | | Subject |
|---|---|---|
| **Conclusion CNS SG/24/3** *(ACSICG/7/2 (ATFM/SG/10-3))* | - | Amendment of the AFTN/AMHS-based Interface Control Document (ICD) for ATFM |
| **Conclusion CNS SG/24/4** | - | Publishing of the CRV Operations Manual |
| **Decision CNS SG/24/5** | - | CRV Landing Page on the ICAO APAC Website |
| **Decision CNS SG/24/*6*** *(SRWG/4/1)* | - | Frequency requirements for VHF-COM systems and ILS, VOR, DME and GBAS/VDB facilities |
| **Conclusion CNS SG/24/7** *(SRWG/4/2)* | - | Simulation of VHF COM Frequency requirements for next 10 years |
| **Conclusion CNS SG/24/8** *(SRWG/4/3)* | - | Establishment a list of focal point responsible for the operation of Frequency Finder in States |

| | | |
|---|---|---|
| **Decision CNS SG/24/9** *(SRWG/4/4)* | - | Revision of the Term of Reference of the SRWG |
| **Conclusion CNS SG/24/10** | - | Flight Inspection Guidance Material (FIGM) for APAC Region |
| **Conclusion CNS SG/24/11** | - | Protection of ILS Critical and Sensitive Areas in Three Dimensional |
| **Decision CNS SG/24/12** *(SURICG/5/2)* | - | Dissolution of SEA/BOB ADS-B WG |
| **Conclusion CNS SG/24/14** *(SURICG/5/4(DAPs WG/3/2))* | - | Mode S DAPs IGD 2.0 |
| **Conclusion CNS SG/24/15** *(SURICG/5/6)* | - | Revised ADS-B Implementation and Operations Guidance Document (AIGD) Edition13 |
| **Decision CNS SG/24/16** *(SURICG/5/1)* | - | Establishment of Study Group under SURICG on Sharing of Surveillance Data in SWIM |

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

2.3 Based on the outcome of discussions on various agenda items, the CNS SG/24 meeting developed 4 Draft Conclusions for consideration by APANPIRG/31 Meeting, which were further adopted by APANPIRG/31. The conclusions adopted by APANPIRG/31 are as follows:

| **Reference** | | **Subject** |
|---|---|---|
| **APAPPIRG C 31/12** *(Draft Conclusion CNS SG/24/1)* | - | Target Year of CRV Implementation in APAC Region |
| **APANPIRG C 31/13** *(Draft Conclusion CNS SG/24/2 (ACSICG/7/1))* | - | Revised Regional Strategies on AMS and Datalink |
| **APANPIRG C 31/14** *( Draft Conclusion CNS SG/24/13 (SURICG/5/3(DAPs WG/3/1))*) | - | Mode S Forward Fit Equipage in APAC Region |
| **APANPIRG C 31/15** *(Draft Conclusion CNS SG/24/17)* | - | Addressing Human Factor Issues of ATSEP |

2.4 All APANPIRG/31 Conclusions related to CNS are included in **Attachment B** to this paper.

***Aeronautical Fixed Service (AFS): Seventh Meeting of the Aeronautical Communication Services Implementation Coordination Group (ACSICG/7)***

2.5. The meeting noted the ATN/AMHS and AIDC implementation status in the APAC Region provided in Appendix A to CNS SG/24 meeting report.

*Election of a co-chair of the ACSICG*

2.6. Mr. Chonlawit Banphawatthanarak, Chief, Policy and Strategy Management Bureau of AEROTHAI was unanimously elected as co-chair of the ACSICG of APANPIRG.

*Action taken on the Report of CRV OG/7 Meeting*

2.7. The ACSICG/7 meeting recognized the challenges and difficulties faced by States/Administrations under current pandemic situation and recommended to postpone the target year of regional implementation of CRV from 2020 to end of 2021. PCCW Global Limited (PCCWG), as the contractor for the provision of CRV infrastructure and services, also agreed to extended target year for regional CRV implementation from 2020 to 2021 without changing terms and conditions of their technical/price offers. CNS SG/24 proposed a draft conclusion **CNS SG/24/1-** *Target Year of CRV Implementation in APAC Region* for consideration of APANPIRG/31, which was approved by APANPIRG/31 as **APAPPIRG C 31/12.** The ICAO secretariat issued a state letter reference number **T 8/2.10-AP002/21 (CNS)** dated **6 January 2021** to inform states about this conclusion.

2.8. According to the updates in November 2020 from PCCWG, twelve States/Administrations had joined CRV and implemented operations: Australia, Bhutan, China, Hong Kong China, Fiji, Japan, New Zealand, Philippines, PNG, Republic of Korea, Singapore and USA. Additional eight States/Administration had plan to join CRV: France-New Caledonia and Polynesia, India, Indonesia, Malaysia, Nepal, Russia, Thailand. The Updated CRV Implementation Status Table was provided in Appendix B to the CNS SG/24 meeting report.

*CRV Pioneer State contribution to the ICAO Managed Service Agreement*

2.9. Pioneer States contributed to the CRV MSA fund that was used to fund the ICAO Assistance for the procurement of Asia/Pacific Common Regional Virtual Private Network (CRV) Services (RAS14801). Currently there is an available balance of approximately USD 88,000.00 less the ICAO Technical Cooperation Bureau (TCB) service overhead. The CRV OG co-chair (Asia) and & pioneer CRV member States were tasked to investigate use the MSA funds to undertake the independent safety assessment of the CRV. Accordingly, Decision CRV OG/6/3 was made in May 2019 on the funds to be used for an independent assessment on the safety and security of the CRV. The Co-Chair (Asia) will coordinate to finalize a scope of work to address the agreed use of the funds.

*CRV for AMHS Centres of the Russian Federation Interacting of COM Centres in the APAC Region*

2.10. Russian Federation provided updates on their plan and progress of joining CRV at number of centres (Moscow, Khabarovsk, Irkutsk) in Russia to interact with COM Centres (Fu Kuok, Beijing and Ulaanbaatar) in the APAC Region as well as COM centres in USA (Salk Lake City and Anchorage). In following up the outcome of COM Coordination Meeting in May 2019, Russian Federation is considering options to join CRV at those designated entry/exit points in Russia with entry/exit points in the APAC Region.

*MPLS/IP Based Inter-Regional Connection*

2.11. The meeting agreed to a proposal to develop a high-level concept on the interconnection of CRV with other regional network such as REDDIG/MEVA/PENS. A number of States that connecting to the CRV are also planning to connect to other regional networks for cost reduction and improve efficiency. Noting these requirements, the CRV OG and PCCWG will enhance and trigger early discussions with these regional networks at future opportunity to consider how the CRV can potentially be interconnected with other regional networks.

*CRV and AFS Safety and Protection planning*

2.12. In following up the outcome of CNS SG/23 meeting, the AFS Safety and Protection joint working group meeting scheduled for 21 to 23 April 2020 in Nevada, USA has been postponed without a firmed date. The meeting considered necessary and timely to address safety and security concerns as more and more AFS and other new applications being transferred to and exchanged over CRV. This meeting was also planning to discuss inter-network connection as indicated in the paragraph above.

*Proposal to use CRV for Space based ADS-B*

2.13. One prime purpose for using CRV for delivery of surveillance data from space-based ADS-B is to reduce the need for point-to-point circuits and would result in lower data communications costs for ANSPs. PNG Air Services Limited (PNGASL) has contracted for the supply of space-based ADS-B data from Aireon LLC and is intending to contract for a CRV connection in early 2020. Indonesia expressed support to PNG's proposal to use CRV for distribution of space-based ADS-B data.

*SWIM Demonstration on CRV*

2.14. Hong Kong China, Thailand, Singapore and PCCWG jointly presented a proposal for SWIM Demonstration on CRV hosted by Hong Kong China was scheduled for March 2020 to demonstrate the exchange of SWIM data over CRV, which is a potential hybrid SWIM infrastructure presented in HKCAD's previous paper at CRV OG/5 meeting. The demonstration would be conducted over a dedicate mini-CRV to be provided by PCCWG for the demonstration which would not impact normal operations for the routine traffic being exchanged over CRV. The SWIM Demonstration on CRV will showcase the operational benefits in using CRV to carry SWIM data and the corresponding services envisaged as necessary or complementary to support implementation of SWIM in APAC region through an operational scenario with real exchange of SWIM data.

2.15. The member States of CRV OG presented at the meeting fully supported the demonstration to be conducted by States concerned with PCCWG as it is a further step forward after SWIM Demonstration in ASEAN were conducted in Bangkok and Singapore in November 2019. Due to the COVID-19 crisis the demonstration was not able to progress. Hong Kong China will notify interested parties of a new date once available.

*Report on the readiness status of AMHS to support IWXXM service by November 2020*

2.16. The following ANSPs should be able to support IWXXM using their respective AMHS with FTBP capability: Australia; Bangladesh; Bhutan; Cambodia; China; Hong Kong, China; Macao, China; Fiji; India; Indonesia; Japan; Republic of Korea; Myanmar; Nepal; New Zealand; Pakistan; Philippines; Singapore; Sri Lanka; Thailand; and USA.

2.17. The meeting recommended that States with designated BBIS (viz Australia, China, Hong Kong, China, Fiji, India, Japan, Singapore, Thailand and USA) should increase their respective connection bandwidth to greater than 64kbps if feasible and applicable.

*APAC regional Strategies on AMS and Air-Ground Data Link*

2.18. As assigned by the CNS SG in 2019, China took the lead and worked together with Australia, Japan and USA to review the regional AMS strategy adopted by APANPIRG in 2013 and the Datalink strategy adopted by APANPIRG in 2005. The draft on the revised strategies was distributed among members and discussed through a teleconference on 1 July 2020.

2.19. The ACSICG/7 meeting reviewed the draft on the revised strategies and further discussed some additional changes proposed by Singapore. The FIT-Asia/10 noted the revision and the CNS SG proposed to APANPIRG for further consideration. With aforementioned, the meeting adopted the

Conclusion **APANPIRG C 31/13 (***Draft Conclusion CNS SG/24/2 (ACSICG/7/1)) The Revised Regional Strategies on AMS and Datalink*, which were later approved by APANPIRG.

2.20. The Revised Regional Strategies on AMS and Datalink is available on http://www.icao.int/APAC/Pages/edocs.aspx. It was informed to states by state letter reference number **T 8/4.1 - AP005/21 (CNS)** dated **8 January 2021**.

*Amendment to AFTN/AMHS-based ATFM Interface Control Document (ICD)*

2.21. The Tenth Meeting of the Asia/Pacific ATFM Steering Group (ATFM/SG/10, Video Teleconference, 4 to 8 May 2020) proposed amendment to the AFTN/AMHS-based ATFM ICD which was endorsed by ACSICG and adopted by CNS SG/23 meeting in 2019. Subsequent to the ATFM/SG/10 meeting, the Secretariat conducted a further editorial review of the ICD, in consultation with the ATFM/SG/10 Chair and the AMNAC Technical Sub-group. The document was further amended to correct some errors and minor omissions. In view of the foregoing, the SG meeting adopted the following Conclusion: **Conclusion CNS SG/24/3(***ACSICG/7-2 (ATFM/SG/10-3***)) -** *Amendment of the AFTN/AMHS-based Interface Control Document (ICD) for ATFM.*

2.22. The AFTN/AMHS-based Interface Control Document (ICD) for ATFM is available on http://www.icao.int/APAC/Pages/edocs.aspx. It was informed to states by state letter reference number **T 8/9.1 - AP262/20 (CNS)** dated **28 December 2020**.

*Draft CRV Operations Manual*

2.23. New Zealand presented an update on the CRV Operations Manual after the ACSICG/7 meeting, as the outcome of the ACTION ITEM of the meeting. Since then, several ad hoc meetings have been held. The main focus has been on the Request Fulfillment Process and procedures as this provides the information and directions required to join, leave or make changes the CRV network. This has also led to the need to have a CRV landing page on the ICAO APAC and MID regional websites. This landing page will provide an overview of CRV and who to contact. An initial request will be send to the APAC CRV Portal Administrator requesting to join, leave or add a new connection to CRV. Upon receipt of the request, a registration form is provided and check the content is completed. Once published, the CRV OG will manage changes to the Operations Manual and other CRV related documentation through the Document Administration Process and Procedure which is detailed in the Operations Manual.

2.24. With the abovementioned, the SG meeting adopted the **Conclusion CNS SG/24/4 -** *Publishing of the CRV Operations Manual* and endorsed the **Decision CNS SG/24/5 -** *CRV landing page on the ICAO APAC website.*The meeting appreciated contributions from Airways New Zealand to host web portal to hold updated CRV documentation, as well as Mr. Vaughan Hickford's continuous contribution in supporting regional CRV implementation issue and drafting this manual.

2.25. The SG meeting also noted the issues related to CRV operational support at a regional level, as more and more ANSPs, service providers and service consumers have been joining CRV, various services are being implemented over CRV. States/Administrations are encouraged to share their new ideas on this issue in future meetings. **ACTION ITEM 24-2.**

*Updates on APAC Implementation of IWXXM Exchange over AMHS*

2.26. The meeting noted that a majority of APAC States/Administrations had not yet reported full implementation of IWXXM format, in accordance with the standards in ICAO Annex 3, applicable from 5 November 2020. IWXXM exchange requires AMHS (with FTBP) and the use of unique AMHS addresses. The Regional OPMET Centres (ROCs) will be responsible for distribution of IWXXM formatted OPMET data in APAC. An online register of the status of IWXXM exchange capabilities in APAC Region will facilitate IWXXM exchange between capable ROCs.

2.27. The meeting requested the MET SG and CNS SG to enhance mutual coordination and sharing outcomes of related survey and seminar/workshop, and encouraged States/Administrations to expedite responding to the ICAO's survey as soon as possible before APANPIRG/31 meeting, and the contributory body of MET SG (Meteorological Information Exchange Working Group (MET/IE WG)) should work collaboratively with ACSICG for a way forward in APAC region. **ACTION ITEM 24-3**

*Presentation of PCCW Network Based IWXXM Translation and Exchange Services*

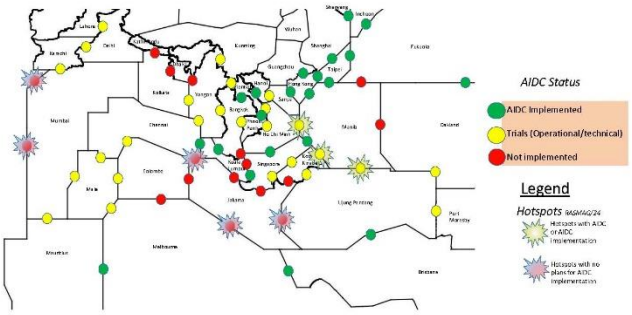
2.28. Fiji and PCCWG described PCCW IWXXM Translation and Exchange Services. They proposed that it could serve as an alternative solution for member States to fulfil the exchange of IWXXM messages.

***Sixth Meeting of the Asia Pacific AIDC Task Force (APA TF/6)***

2.29. The Sixth meeting of the ATS Inter-facility Data Communication Task Force (APA TF/6) noted that AIDC implementation in South China Sea sub-region had been satisfactory while further efforts by States in the Bay of Bengal sub-region are required. The summary of the new AIDC connections implemented since the APA TF/5 meeting is listed below:

- Automatic handling over based on OLDI ICD between Shenyang ACC and Khabarovsk ACC implemented in October 2019 over a dedicated line;
- AIDC operational implementation between Kuala Lumpur ACC and Chennai OCC came into effect on 1 April 2020;
- Operational AIDC between Singapore ACC and Kuala Lumpur ATCC with limited messages set was implemented on 1 November 2019;
- Operational AIDC between Bangkok ACC and Kuala Lumpur ATCC with limited messages set was implemented on 14 March 2020;
- Operational AIDC between Bangkok ACC and Vientiane ACC with 5 messages set was implemented on 14 July 2020;
- AIDC service between Manila ACC and Hong Kong ACC implemented on 23 May 2019;
- AIDC service between Manila ACC and Singapore ACC implemented on 1 November 2019; and
- AIDC service between Manila ACC and Taipei ACC implemented on 5 December 2019.

2.30. The meeting encouraged States/Administrations concerned to continue work bilaterally to expedite implementation of those planned AIDC connections as priorities identified by APANPIRG. The graphical map for quick and easy understanding of the regional AIDC implementation status is shown below.




APA AIDC Implementation Chart ver 2 (Jul 2020)

*Collected AIDC Implementation Issues*

2.31. The latest AIDC issues were presented to APA TF/6 meeting by Indonesia with support from India and Singapore. The meeting considered that the issue table would continue to serve as a reference for other States. A summary of the 89 issues identified is shown in the Table below:

| Fault Categories | APA TF/6 (2020) | | |
|---|---|---|---|
| | **Issues Reported** | **Closed** | **Open** |
| a. Communication Link | 9 | 3 | 6 |
| b. ATM System | 50 | 20 | 30 |
| c. AIDC Message | 17 | 15 | 2 |
| d. Airspace Design/Procedures | 8 | 4 | 4 |
| e. Other | 5 | 2 | 3 |
| **Total** | **89** | 44 | 45 |

2.32. The meeting appreciated the great contribution of the APA TF since its establishment including the guidance material and promotion on implementation. The meeting also agreed that the understanding on AIDC implementation may differ from the regional perspective and State's perspective, based on regional planning document or bilateral agreement between ATSUs. APA TF holds the view that the number of messages to be implemented in AIDC operation would be considered as far as practical. Regarding the AIDC/OLDI implementation between India and Oman, the meeting was informed that ATM automation system of Mumbai is capable to support AIDC and OLDI, inter-regional coordination between India and Oman may require escalation through ICAO APAC and MID Office.

***Outcome of Seminar on Air Traffic Management Automation System and First Meeting of Air Traffic Management Automation System Task Force***

2.33. The Seminar on Air Traffic Management Automation System and the First Meeting of the Asia/Pacific Air Traffic Management Automation System Task Force (ATMAS TF/1) were held from 27 to 30 October 2020. The seminar was conducted in two sessions, the Session 1 focused on Experience Sharing from CAA/ANSPs, while the session 2 focused on New Technology and Approach from Industry, it provided a platform for participants to exchange experience and keep abreast of the latest knowledge on the subject of air traffic management automation.

2.34. Ms. Xie Yu Lan, Deputy Director General of North China Regional Air Traffic Management Bureau of CAAC, and Mr. Kwek Chin Lin, Chief ATC Specialist (Systems Development) from Civil Aviation Authority of Singapore, who were both unanimously elected as the co-chairs of the ATMAS TF.

*Application of Flight Data Exchange in ATM Automation System*

2.35. In order to adapt to the rapid development of civil aviation in China and improve the safety assurance level of the Air Traffic Management Automation System (ATM AS), the Civil Aviation Administration of China (CAAC) issued the industry standard "Civil Aviation Air Traffic Control Automation System" (MH/T 4029). The third part: Flight Data Exchange (MH/T 4029.3), which defines the protocol, message type and data format for the flight data exchange between the ATM AS and related systems, the standard is mainly used for the ATM AS planning, design, construction, testing and operational use.

*Application of Flight Plan Centralized Processing System in ATM Automation System*

2.36. Flight plan centralized processing system (FCPS) is a set of intelligent control system independently developed by ATMB, which is responsible for processing National flight plans and telegrams. It was officially put into operation in September 2017. With the construction of National Flight Plan Processing Center, the unified processing of flight plans of 237 airports in China has been completed. The rudiment and new business mode of unified management of national flight plans have been preliminarily established.

*Initial Application of CRACP in Flow Management System*

2.37. CRACP (Cross-Border ATFM Collaborative Platform) can realize the data docking between China, Japan and ROK air traffic management units using their respective systems to achieve full situational awareness of cross-border flights from 2 hours before EOBT to the transfer point, and implement more accurate and more limited traffic on this basis Management measures. Thereby reducing the length of traditional interval restrictions and the number of affected flights, and improving the quality of operations.

*ATFM-ACDM Integration*

2.38. India presented a case study of the actual integration of Airport Collaborative Decision Making (ACDM) and Air Traffic Flow Management (ATFM). ATFM-ACDM integration is a process to achieve data exchange between these two systems without the need for any manual intervention.

*China Civil Aviation Ground-Ground Communicationnetwork Status*

2.39. China presented the information of China civil aviation ground-ground communication network (CCACN), including network scale, network topology, application technology and services accessing. The CCACN will not affect or make change communication mode with neighboring States. China joined the CRV Network in October 2020 and had already completed the implementation on 26 October 2020.The CCACN will setup interface for connecting the CRV for more selection in international communication in the future.

*Update of ADS-B & AIDC Implementation in Indonesia*

2.40. Indonesia has carried out several stages of ADS-B implementation and has implemented ADS-B mandate (Tier-1) for all transport category aircraft at all level in particular airspace, since 23 April 2020. Area of ADS-B implementation are class A airspace between FL245 – FL600, class B, C, D, and E airspace between Ground to FL245, at 9 control zones and terminals. The population of ADS-B equipped aircraft increase to 87% from all transport category aircraft from 85% initially. Additionally, new ADS-B ground stations are deployed to cover the eastern part of Indonesia and the Indonesian FIR boundary. Indonesia also shared AIDC implementation status in Indonesia, especially Ujung Pandang ACC, until end of Q2-2020.

***Fourth Meeting of System Wide Information Management Task Force***

*Election of Co-Chair of the Task Force*

2.41. Dr. Amornrat Jirattigalachote, Strategic Planning Manager (Engineering), Policy and Strategy Management Bureau of AEROTHAI, was elected as co-chair of the APAC SWIM Task Force.

*Review SWIM Task Force Programme and outstanding action items*

2.42. The meeting reviewed the development of SWIM TF's work plan and the updating of Action List with highlight on the restructure of the task assignment and numbering. The meeting adopted the revised task structure through **Decision SWIM TF/4/1** - *Revised SWIM TF Task Group*.

*SWIM Technical Overview Centered around CRV*

2.43. PCCWG, the CRV provider selected through ICAO TCB process, presented a system architecture of SWIM service. It is a managed SWIM solution which can be deployed with the preference of each member States and is proposed to run on CRV network as value-added service. PCCW SWIM infrastructure could be one of the global/commercial EMS nodes to deliver SWIM services or qualified third party services. The deployment options include on premise deployment, network based as well as hybrid model. This enables flexibility to meet individual State requirement.

*Extension Development of FIXM to Support National ATFM Operations and ATFM/A-CDM Integration in China*

2.44. In order to implement data sharing among ATFM stakeholders, and facilitate a seamless and agile exchange of ATFM data, the development of FIXM has been started by ATMB of CAAC in 2019, based on FIXM APAC FLOW Extension version 1.0. Additional data attributes required to be exchanged among stakeholders involving in ATFM operations and to support the integration between ATFM and A-CDM were identified in FIXM ATMB ATFM Extension version 0.1.

*FF-ICE/R1 Service Validation and Implementation*

2.45. This WP was presented via a joint demonstration led by Japan, China and Republic of Korea. To implement FF-ICE/R1 operation, not only SWIM Technical Infrastructure for sharing information between different systems but also information services for supporting operation between different ATM applications are required. The FF-ICE services are expected to be highly automated and are expected to be performed through computer-to-computer links within a SWIM environment. This demonstration validated the implementation of FF-ICE services and the process of related messages for FF-ICE/R1 operation through two scenarios by considering the FF-ICE/R1 capable ASPs and AUs (eASP and eAU). The demonstration shows that the SWIM-based FF-ICE operation is capable to provide related information in greater detail and allow the eAU and the eASP to share their expectations in an unambiguous manner via the exchange of trajectory information. Moreover, according to the scenario discussion and the test system development, some technical observations and recommendations are presented for improving regional SWIM and FF-ICE/R1 implementation.

*New IWXXM design to better support SWIM*

2.46. Hong Kong China, being one of the members of the Task Team on Aviation Data (TT-Av Data) of World Meteorological Organization (WMO), presented the latest update on the development of a new IWXXM design being studied by WMO TT-Av Data for future versions of IWXXM. The new IWXXM design would introduce "Weather Object" to better facilitate retrieval and consolidation of individual meteorological element through SWIM information services.

*ENRI Forum on SWIM*

2.47. The Electronic Navigation Research Institute (ENRI) in Japan hosted a virtual seminar on SWIM in January 2021. Presentations included:

- SWIM in Japan – Towards the next stage of CARATS (JCAB)
- FAA SWIM activities: Implementation of Future Research (US FAA)
- SWIM – An Airline Perspective (IATA)
- A Regional Picture on SWIM Related Activities (ICAO RO)
- SWIM Research & Development in ENRI (ENRI)

***Fifth Meeting of the Surveillance Implementation Coordination Group (SURICG/5)***

*Collaboration in Sharing of Surveillance Data in SWIM*

2.48. Following the **Conclusion CNS SG/23/10** (*SURICG/4/1*) - *ADS-B and Flow Management*, it was agreed there is a need to share surveillance data to provide surveillance from "departure to destination". Singapore proposed solutions for sharing of surveillance data using SWIM/CRV and PCCW Global, the selected CRV service provider through ICAO TCB process, presented their capability to provide a hosted platform over SWIM/CRV for sharing of surveillance data.

2.49. Singapore proposed a multidisciplinary study group be established, to be led by SURICG, including experts from surveillance, SWIM and ATFM and it was intended that they inform this meeting of further details. The meeting noted the Decision SURICG/5/1 for *Establishment of Study Group under SURICG on Sharing of Surveillance Data in SWIM* as well as the relevant outcome from SWIM TF/4, and an ad hoc group led by Hong Kong China had prepared a draft ToR for the proposed Study Group for further consideration by CNS SG. After deliberation, the meeting discussed the draft ToR through Flimsy/06, and deferred to the Study Group to fine-tune its ToR and decided its time schedule and deliverables for updating to SURICG.

2.50. SWIM TF/4 agreed to a study group to further explore an initiative for a Surveillance Central Data Processor (SCDP), a possible Commercial-ANSP collaboration, and to study the data sharing model at EUROCONTROL Network Manager as a possible reference model for surveillance data sharing in APAC. The study group was named as Surveillance data Study Group (SURSG) and established through Decision CNS SG/24/16 (SURICG/5/1).

2.51. The *First meeting of surveillance data study group (SURSG/1)* was held from *20– 22 April 2021*. SURSG/1 meeting report, working papers, information papers, and other resources can be accessed by following link: https://www.icao.int/APAC/Meetings/Pages/2021-SURSG-1.aspx.

## 3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) review the outcome of the APANPIRG/31 and take any necessary follow-up actions; and

b) discuss any relevant matters as appropriate.

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List of Conclusion/Decisions adopted by CNS SG/24 on behalf of APANPIRG on Technical Matters

| **Conclusion CNS SG/24/3(ACSICG/7-2 (ATFM/SG/10-3)) - Amendment of the AFTN/AMHS-based Interface Control Document (ICD) for ATFM** | |
|---|---|
| What: That, the AFTN/AMHS-based Interface Control Document for ATFM Version 2.0 provided in **Appendix E** to this Report be adopted and posted on the ICAO Asia/Pacific Regional Office website to supersede the existing version, for use by Asia/Pacific Administrations in implementing cross-border ATFM communications in accordance with the provisions of the Regional Framework for collaborative ATFM. | Expected impact:<br>☐ Political / Global<br>☐ Inter-regional<br>☐ Economic<br>☐ Environmental<br>☒ Ops/Technical |
| Why: To align with message format provisions of Annex 10 Vol II, and to support implementation by States through amendment to specific provisions. | Follow-up: ☒Required from States |
| When: 4-Dec-20 | Status: Adopted by Subgroup |
| Who: ☒Sub groups ☒ APAC States ☐ICAO APAC RO ☐ICAO HQ ☒ other: ACSICG/7 | |

| **Conclusion CNS SG/24/4 - Publishing of the CRV Operations Manual** | |
|---|---|
| What: That the CRV Operations Manual provided in **Appendix F** to this Report be adopted as first Edition for publishing and use. | Expected impact:<br>☐Political / Global<br>☐Inter-regional<br>☐Economic<br>☐Environmental<br>☒ Ops/Technical |
| Why: Provides the information and directions required for CRV OG performance and CRV operations. | Follow-up: ☒Required from States |
| When: 4-Dec-20 | Status: Adopted by Subgroup |
| Who: ☒Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other: | |

| **Decision CNS SG/24/5 - CRV landing page on the ICAO APAC website** | |
|---|---|
| What: That ICAO APAC Office is requested to create CRV landing page on ICAO APAC web page to providing information on CRV and guidance on how to join, leave or make changes. | Expected impact:<br>☐Political / Global<br>☒ Inter-regional<br>☐Economic<br>☐Environmental<br>☒ Ops/Technical |
| Why: Provides online access to the information and directions required for the Request Fulfilment Process and procedures to join, leave or make changes the CRV network | Follow-up: ☐Required from States |

| | |
|---|---|
| When: 4-Dec-20 | Status: Adopted by Subgroup |
| Who: ☒Sub groups ☐APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other: | |

| **Decision CNS SG/24/6(SRWG/4/1) - Frequency requirements for VHF-COM systems and ILS, VOR, DME and GBAS/VDB facilities** | |
|---|---|
| What: That, the SRWG is tasked to develop a rolling frequency assignment plan for VHF-COM and ILS, VOR, DME and GBAS/VDB facilities to meet the operational requirements until [2030], subject to a regular review and updating by the SRWG. | Expected impact:<br>☐ Political / Global<br>☐ Inter-regional<br>☐ Economic<br>☐ Environmental<br>☒ Ops/Technical |
| Why: To secure adequate spectrum for these facilities for the near future. | Follow-up: ☒Required from States |
| When: 4-Dec-20 | Status: Adopted by Sub-group |
| Who: ☒Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other: | |

| **Conclusion CNS SG/24/7(SRWG/4/2) – Simulation of VHF COM Frequency requirements for next 10 years** | |
|---|---|
| What: To conduct a new round of simulation for VHF COM frequency assignment based on new operational requirements of States to 2030 as necessary. | Expected impact:<br>☐ Political / Global<br>☐ Inter-regional<br>☐ Economic<br>☐ Environmental<br>☒ Ops/Technical |
| Why: To support regional strategy on the use of 8.33KHz channel spacing. | Follow-up: ☒Required from States |
| When: 4-Dec-20 | Status: Adopted by Sub-group |
| Who: ☒Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other: | |

| **Conclusion CNS SG/24/8(SRWG/4/3) – Establishment a list of focal point responsible for the operation of Frequency Finder in States** | |
|---|---|
| What: That, States in APAC Region are requested to nominate a focal point responsible for operation of the Frequency Finder and coordination for frequencies assignments with ICAO APAC Regional Office in order to reduce operational error and improve quality management for the coordination process. | Expected impact:<br>☐ Political / Global<br>☐ Inter-regional<br>☐ Economic<br>☐ Environmental<br>☒ Ops/Technical |
| Why: To reduce operational error in accessing the tool of Frequency Finder and improve the spectrum management quality by enhancing the administrative process. | Follow-up: ☒Required from States |

| When: 4-Dec-20 | Status: Adopted by Sub-group |
|---|---|

| **Decision CNS SG/24/9 (SRWG/4/4) – Revision of the Term of Reference of the SRWG** | |
|---|---|
| What: That, the revised Terms of Reference provided in **Appendix J** to the Report be adopted. | Expected impact:<br>☐ Political / Global<br>☐ Inter-regional<br>☐ Economic<br>☐ Environmental<br>☒ Ops/Technical |
| Why: Need to refine the scope of related tasks and include the new members. | Follow-up: ☒Required from States |
| When: 4-Dec-20 | Status: Adopted by Sub-group |
| Who: ☒Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other: | |

*Note: This revision is to conduct simulation on VHF COM frequency assignment and expand its scope of work to cover Navigation systems with highlight on GBAS implementation*.

| **Conclusion CNS SG/24/10 – Flight Inspection Guidance Material (FIGM) for APAC Region** | |
|---|---|
| What: That, the first edition of the Flight Inspection Guidance Material (FIGM) provided in **Appendix K** to this Report be adopted. | Expected impact:<br>☐Political / Global<br>☐Inter-regional<br>☐ Economic<br>☐Environmental<br>☒Ops/Technical |
| Why: To provide additional guidance on planning, execution and delivery of flight inspection for States/Administrations in APAC Region. | Follow-up:<br>☒Required from States |
| When: 4-Dec-20 | Status: Adopted by Subgroup |
| Who: ☒Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other: | |

| **Conclusion CNS SG/24/11- Protection of ILS Critical and Sensitive Areas in Three Dimensional** | |
|---|---|
| What: That, States to:<br>a) take note of the importance in extending protection of ILS Critical and Sensitive Areas (CASA) from two dimensional to three dimensional as stated in ICAO Annex 10 (7th Edition, Amendment 92), Volume I, Attachment C, Paragraph 2.1.9.5;<br>b) be aware that departing aircraft and/or manoeuvring helicopters/aircraft can cause disturbances to ILS signals | Expected impact:<br>☐ Political / Global<br>☐ Inter-regional<br>☐ Economic<br>☐ Environmental<br>☒Ops/Technical |

| | |
|---|---|
| received by arriving aircraft under single runway mixed mode operation;<br>c) take measures to mitigate potential impacts caused by disturbances in ILS signals under single runway mixed mode operation;<br><br>and ICAO to:<br>d) provide guidance materials in establishing three dimensional ILS CASA and their protection. | |
| Why: In accordance with ICAO Annex 10 (7th Edition, Amendment 92), Volume I, paragraph 2.1.9.5 – "While critical and sensitive areas are evaluated in a two-dimensional (horizontal) context, protection should actually be extended to volumes, as departing aircraft and/or manoeuvring helicopters/aircraft can also cause disturbances to the ILS signals". However, no detailed guidance was given as to how to establish the ILS CA/SA in three dimensional and how to protect them. | Follow-up: ☒Required from States |
| When: 4-Dec-20 | Status: Adopted by Sub-group |
| Who: ☒ Sub groups ☒ APAC States ☐ICAO APAC RO ☒ICAO HQ ☐Other: | |

| **Decision CNS SG/24/12 (SURICG/5/2) - Dissolution of SEA/BOB ADS-B WG** | |
|---|---|
| What: Noting that most of the tasks outlined in the TOR have been achieved and the completion of residual part of action items will be performed by SURICG,<br><br>That, the SEA/BOB ADS-B WG be dissolved. | Expected impact:<br>☐ Political / Global<br>☐ Inter-regional<br>☐Economic<br>☐ Environmental<br>☒ Ops/Technical |
| Why: The SEA/BOB ADS-B WG terms of reference have been completed and pending action items will be performed by SURICG. | Follow-up: ☐Required from States |
| When: 4-Dec-20 | Status: Adopted by Sub-group |
| Who: ☒Sub groups ☐APAC States ☒ICAO APAC RO ☐ICAO HQ ☐APANPIRG ☒Other: SURICG | |

| **Conclusion CNS SG/24/14 (SURICG/5/4(DAPS WG3/2)) - Mode S DAPs IGD 2.0** | |
|---|---|
| What: That, the *Mode S DAPs Implementation and Operation Guidance Document* Edition 2.0 provided in **Appendix N** to this Report be adopted. | Expected impact:<br>☐ Political / Global<br>☐ Inter-regional<br>☐ Economic<br>☐ Environmental<br>☒ Ops/Technical |
| Why: Editorial correction and revision to reflect regional updates in implementation. | Follow-up: ☐Required from States |
| When: 4-Dec-20 | Status: Adopted by Sub-group |

| Who: ☒Sub groups ☐APAC States ☐ICAO APAC RO ☐ICAO HQ ☐Other: |
|---|

| **Conclusion CNS SG/24/15 (SURICG/5/6) - Revised ADS-B Implementation and Operations Guidance Document (AIGD)** | | |
|---|---|---|
| What: That, the revised ADS-B Implementation and Operations Guidance Document (AIGD) provided in **Appendix O** to this Report, which consolidated all change proposals during SURICG/5, be adopted as Version 13. | | Expected impact:<br>☐ Political / Global<br>☐ Inter-regional<br>☐ Economic<br>☐ Environmental<br>☒ Ops/Technical |
| Why: Updates and editorial correction | Follow-up: ☐Required from States | |
| When: 4 Dec 2020 | Status: Adopted by Sub-group | |
| Who: ☒CNS Sub group ☐APAC States ☒ICAO APAC RO ☐ICAO HQ | | |

| **Decision CNS SG/24/16 (SURICG/5/1) - Establishment of Study Group under SURICG on Sharing of Surveillance Data in SWIM** | | |
|---|---|---|
| What: Noting the operational needs of this region to enhance surveillance data sharing and new technologies available,<br><br>That, the Study Group under SURICG on Sharing of Surveillance Data in SWIM (SURSG) with TOR provided in **Appendix P** to the Report, comprising subject matter experts in relevant areas including surveillance and SWIM to be set up to study and recommend solutions on surveillance data sharing to provide surveillance from "departure to destination", be established. | | Expected impact:<br>☐ Political / Global<br>☐ Inter-regional<br>☐ Economic<br>☐ Environmental<br>☒ Ops/Technical |
| Why: To enhance surveillance coverage, enhance surveillance data availability by providing additional layers of surveillance services, and support implementation of advanced Air Traffic Management (ATM) tools such as Air Traffic Flow Management (ATFM). | Follow-up: ☒Required from States | |
| When: 4-Dec-20 | Status: Adopted by Sub-group | |
| Who: ☒Sub Groups ☒APAC States ☐ICAO APAC RO ☐ICAO HQ<br>☒Other: SURICG | | |

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A List of Conclusions from CNS SG/24 approved by APANPIRG/31 Meeting

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| applications will require EHS and that it's easy for new aircraft to be equipped with EHS. Retrofitting existing airframes with EHS will need further deliberation under challenging pandemic situation. | |
| When: 16-Dec-20 | Status: To be adopted by PIRG |
| Who: ☒Sub groups ☒APAC States ☒ICAO APAC RO ☒APANPIRG ☐ICAO HQ ☒Other: SURICG | |

| **APANPIRG C 31/15** (*Conclusion CNS SG/24/17)* **- Addressing Human Factor Issues of ATSEP** | |
|---|---|
| What: That,<br>a) the States are encouraged to make reference and implement the recommendations made out of the IFATSEA study report *Factors adding stress and fatigue to ATSEP* provided in **Appendix R** to the Report for pro-active measures;<br>b) States are also encouraged to join the small working group for finding the left-out gaps and in preparing the regional ATSEP human factor guidance material. | Expected impact:<br>☐Political / Global<br>☐Inter-regional<br>☒ Economic<br>☐Environmental<br>☒ Ops/Technical |
| Why: to continuously improve the human performance management in practice to better support CNS/ATM system operations. | Follow-up: ☒Required from States |
| When: 16-Dec-20 | Status: Draft to be adopted by PIRG |
| Who: ☒Sub groups ☒APAC States ☐ICAO APAC RO ☐ICAO HQ ☐Other: | |

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| **APANPIRG C 31/15** (*Conclusion CNS SG/24/17)* **- Addressing Human Factor Issues of ATSEP** | |
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| Why: to continuously improve the human performance management in practice to better support CNS/ATM system operations. | Follow-up: ☒Required from States |
| When: 16-Dec-20 | Status: Draft to be adopted by PIRG |
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