



ICAO

Ninth Meeting of the Aeronautical Communication Services Implementation Coordination Group (ACSICG/9)

Video Tele-Conference, 19 - 21 April 2022

Agenda Item 2: Review of outcomes of relevant meetings**REVIEW OF RELEVANT MEETINGS**

(Presented by the Secretariat)

SUMMARY

This paper presents the relevant outcomes of the Twenty Fifth Meeting of the Communications, Navigation and Surveillance Sub-group (CNS SG/25), Thirty Second Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/32) and relevant discussions in other meetings.

1. INTRODUCTION

1.1 The Thirty-second Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/32) was held from *1 to 3 December 2021* via video teleconference. The Meeting was attended by 278 participants from 28 Member States, 2 Special Administrative Regions of China, and 8 International Organizations (AAPA, ACI, CANSO, IATA, ICAO, IFALPA, IFATCA and PASO). APANPIRG/32 meeting report, working papers, information papers, and other resources can be accessed by following link:

<https://www.icao.int/APAC/Meetings/Pages/2021-APANPIRG32.aspx>.

1.2 The Twenty Fifth Meeting of the Communications, Navigation and Surveillance Sub-group (CNS SG/25) of APANPIRG was held from *18 to 22 October 2021* via video teleconference. The meeting was attended by 215 participants from 23 States/Administrations, and 4 International Organizations namely CANSO, IATA, IFALPA and IFATSEA, plus 28 participants from industry partners. CNS SG/25 meeting report, working papers, information papers, and other resources can be accessed by following link:

<https://www.icao.int/APAC/Meetings/Pages/2021-CNS-SG-25.aspx>.

1.3 The Eighth Meeting of the Aeronautical Communication Services Implementation Coordination Group (ACSICG/8) of CNS SG was held from *21 to 23 June 2021* via video teleconference. The meeting was attended by 120 participants from Twenty (20) States/Administrations, Three (3) International Organizations and Two (2) Aviation Industries. ACSICG/8 meeting report, working papers, information papers, and other resources can be accessed by following link:

<https://www.icao.int/APAC/Meetings/Pages/2021-ACSICG8.aspx>.

1.4 The Fifth Meeting of the APAC SWIM Task Force (SWIM TF/5) was held from *9 – 11 August 2021* via video teleconference. The meeting was attended by 173 participants from 21 States/Administrations, 4 International Organizations and 1 service provider. SWIM TF/5 meeting report, working papers, information papers, and other resources can be accessed by following link:

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<https://www.icao.int/APAC/Meetings/Pages/2021-SWIM-TF-5.aspx>.

1.5 The Second Meeting of the Asia/Pacific Air Traffic Management Automation System Task Force (ATMAS TF/2) was held from 14-16 September 2021 via Video Tele-Conference (VTC). The meeting was attended by 143 participants from 17 States/Administrations, 3 International Organizations, and 1 System Provider from the industry. The meeting report, working papers, information papers and other resources can be accessed at

<https://www.icao.int/APAC/Meetings/Pages/2021-ATMAS-TF-2.aspx>

1.6 The APANPIRG/32 meeting reviewed the outcomes of the CNS SG/25, 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/25 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 meetings of CNS SG/25 and APANPIRG/32.

2. DISCUSSION

2.1 The CNS SG/25 meeting adopted following **8** Conclusions and **5** Decisions with outcomes relevant to ACSICG highlighted in **blue**:

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

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

2.2 The contents of above Conclusions/Decisions 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/25 meeting developed 4 Draft Conclusions for consideration by APANPIRG/32 Meeting, which were further adopted by APANPIRG/32. The Conclusions adopted by APANPIRG/32 are as follows with outcomes relevant to ACSICG highlighted in **blue**:

Reference	Subject
APANPIRG C 32/7 (Draft Conclusion CNS SG/25/02(ACSICG/08/02 (CRV/08/02)))	- Implementation of CRV for small Pacific Island and small ANSP in the region using CRV Solution, PCCWG SLA Package D
APANPIRG C 32/8 (Draft Conclusion CNS SG/25/07 (SURICG/6/1))	- Interrogator Code (IC) Planning and Coordination
APANPIRG C 32/9 (Draft Conclusion CNS SG/25/08(SURICG/6/2))	- Transition from II code to II and SI mixed code
APANPIRG C 32/10 (Draft Conclusion CNS SG/25/09(SURICG/6/3))	- The APAC Regional Roadmap for Mode S Implementation

2.4 All APANPIRG/32 Conclusions related to CNS are included in **Attachment B** to this paper.

Election of Chair of the Sub-group

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

Aeronautical Fixed Service (Report of ACSICG/8)

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

CRV Implementation Plan Amendment

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

<https://www.icao.int/APAC/Documents/edocs/CRV%20Implementation%20Plan%20v2.1.pdf>

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CRV Solution for Pacific Islands and small ANSPs

2.8 From the recent regional CRV implementation update submitted by PCCWG, it was noted that there had been slow implementation progress with the Pacific Island States and small ANSP in the region to date. With the target date for the implementation of CRV by 2022, the meeting adopted **Conclusion APANPIRG/32/7 (CNS SG/25/02) - Implementation of CRV for small Pacific Island and small ANSP in the region using CRV Solution, PCCWG SLA Package D.**

Implementation updates in ACSICG/8 and CRV OG/8

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

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

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

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

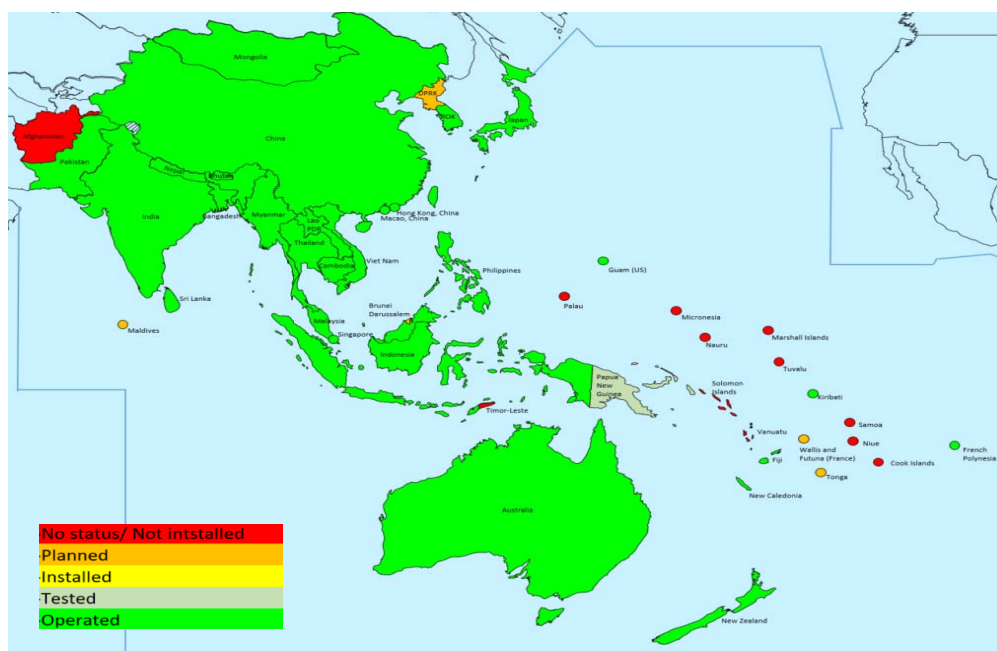


Figure 1 – ATN/AMHS Implementation Status in APAC

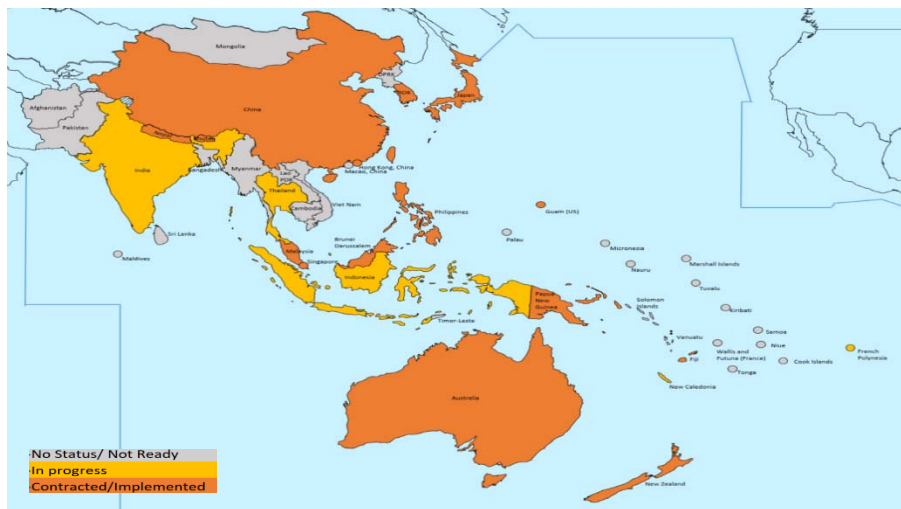


Figure 2 – CRV Implementation Status in APAC

CRV Post Implementation Issues in Bhutan

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

AMHS readiness status for supporting IWXXM Traffic

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

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



Figure 3 – APAC States AMHS Readiness to support IWXXM

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

MPLS/IP Based Inter-Regional Connection

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

AMHS Connections between APAC and EUR/NAT

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

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

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

CRV Webinar

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

Information Management (Report of SWIM TF/5)

2.21 The Fifth Meeting of System Wide Information Management Task Force (SWIM TF/5) was held from 9 to 11 August 2021. Ms. Kristin Cropf, SWIM Program Manager, Federal Aviation Administration (FAA) nominated by Singapore and seconded by Australia and Japan was elected as Co-Chair of SWIM TF.

Expansion of SWIM Implementation Philosophy

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

Asia/Pacific SWIM Implementation Plan and Status Survey

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

FIXM version 4.2 Extension development

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

ToR and Work Plan

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

2.26 The meeting noted that the subject on amendment to ToR of SWIM TF was also discussed by the MET SG/25 which was conducted in the same period with CNS SG/25, with a relevant Draft Conclusion MET SG/25-07 *SWIM architecture to enable the cost-effective and efficient provision and consumption of MET information services* formulated for consideration in APANPIRG/32. The meeting invited supplementary notes from the chairs of CNS SG and MET SG. As the MET SG’s draft conclusion will be captured in the ongoing review of SWIM /TF ToR and considering no further comments from members and the following, the meeting concluded that there was no need to further consider Draft Conclusion MET SG/25-07 :

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

SWIM Workshop

2.27 A two-day SWIM Workshop was held from 6 to 7 July 2021 via VTC. Dr. Amornrat Jirattigalachote, PhD, Policy and Strategy Management Bureau Aeronautical Radio of Thailand Ltd moderated the SWIM Workshop. Total Thirteen (13) presentations including one demonstration were

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delivered by Experts from different parts of the World in SWIM Workshop. Throughout the SWIM Workshop, 57 questions were asked and more than 60 feedbacks for the SWIM Workshop were provided by Participants with 100% positive responses. The detailed information is at:

<https://www.icao.int/APAC/Meetings/Pages/2021-SWIM-Workshop.aspx>

Automation (Report of ATMAS TF/2)

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

Dissolution of APA TF

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

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

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

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

Space-based VHF Communications

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

Spectrum and Interference

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

2.34 The meeting agreed that Member States would keep an eye on monitoring the impact of 5G on radio altimeters in their States/Administrations regarding the safety and frequency spectrum issues. In parallel, it was advised that Member States CAA and airworthiness office may collect all

relevant information and past issues reported, if any, and inform RASG-APAC in case of any significant concern. The issues related to frequency spectrum may be brought to the attention of the CNS section of the ICAO APAC Regional Office for the coordination with RASG-APAC and ICAO headquarter.

ICAO Position for ITU WRC-23

2.35 The ICAO State Letter E 3/5-21/37 *ICAO Position for the ITU WRC-23* was issued on 18 August 2021 informing Member States that the ICAO Council approved the ICAO Position for WRC-23 on issues of critical concern to aviation at its 223rd Session, which was held on 14 June 2021, and thus inviting Member States to consider the ICAO Position when developing the State's position for WRC-23 and to support the ICAO Position during WRC-23.

Regional CNS Requirements

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

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

Status of CNS Deficiencies

2.38 CNS SG/25 discussed the list of Air Navigation Deficiencies in the CNS field which was reviewed in APANPIRG/31. The only outstanding issue was related to unreliability of AFS communication between Afghanistan and Pakistan. Poor performance of AFS including data communication between Kabul and Karachi and ATS voice communication between Lahore and Kabul had become issues of regional concerns. A COM coordination meeting (Afghanistan, China and Pakistan) held in July 2019 in ICAO APAC Regional Sub-Office agreed to restore the VSAT connection by upgrading the VSAT terminals and equipment in Lahore and Karachi. Both Afghanistan and Pakistan were also agreed to implement CRV as soon as practical. However, there was no further progress after last update in 2020. The current List of Air Navigation Deficiencies in the CNS field was reviewed in CNS SG/25 and endorsed by APANPIRG/32, which is provided in **Attachment D** to this paper.

2.39 Pakistan raised a few difficulties in CNS SG/25 that they were facing, including lack of contact point of Afghanistan, challenges in restoring VSAT link, and waiting for pairwise CRV implementation with Afghanistan. The ICAO Secretariat informed they would update Pakistan with the latest contact point of Afghanistan in due course, and invited the meeting, particularly BBIS States including Thailand and India to implement CRV as soon as possible to provide convenient connections to BIS States.

Study on Human Factor Issues of ATSEP

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

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*CNS/ATM systems cybersecurity**Regional Cybersecurity Webinar*

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

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

Cybersecurity and Associated Requirements for CRV Operations

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

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

Information Security Requirements for Exchange of Information over IP

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

New technologies

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

CNS Points of Contact

2.47 The ICAO Secretariat informed the need for points of contact from States/Administrations who would respond in a timely, effective, and efficient manner was important

in addressing CNS-related operational deficiencies notified to the Regional Office. Member States/Administrations were invited to review and update their existing nominated CNS Points of Contact to the APAC Regional Office, and each State/Administration was requested to provide points of contact of CNS contingency planning and administrative support for effective and efficient coordination in CNS aspect.

CNS SG Action Items

2.48 The APANPIRG/32 meeting further noted that the SG had identified a number of actions items related to CNS. Member States were encouraged to take active follow-up actions on CNS related actions items resulted from the relevant meetings. The Action Items from CNS SG/25 is provided in **Attachment E** for information and necessary actions.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the outcome of relevant meetings and take any necessary follow-up actions;
and
- b) discuss any relevant matters as appropriate.

List of Conclusion/Decisions adopted by CNS SG/25 on behalf of APANPIRG on Technical Matters

Conclusion CNS SG/25/01 (ACSICG/08/01(CRV/08/01)) – CRV Implementation Plan amendment (Version 2.1)	
<p>What: That, the CRV Implementation Plan be amended to include the following new text in paragraph 2.4.2 – IP Addressing</p> <p>iii. In the development of the IPv4 plan, a flexible margin has been designated to allow future growth or change. Through draft Conclusion CRV OG/8/01, using 10.46.0.1 to 10.46.255.254, each third party Service Provider (e.g. AIREON LLC providing Automatic Dependent Surveillance - Broadcast data over CRV) is assigned 254, 510, 764 or 1022 usable Network addresses (depending on Service Providers’ technical requirements); and</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global</p> <p><input 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>
<p>Why: To allocate IP addresses to third party service providers for the delivery of services over CRV</p>	<p>Follow-up: <input type="checkbox"/> Required from States</p>
<p>When: 22-Oct-21</p>	<p>Status: Adopted by Subgroup</p>
<p>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: ACSICG</p>	

Conclusion CNS SG/25/03 (SWIM TF/5/01) – Asia/Pacific SWIM Implementation Plan and Status Survey	
<p>What: To conduct a survey on SWIM implementation plan and status of Asia/Pacific Member States.</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global</p> <p><input 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>
<p>Why: To establish a baseline understanding of SWIM implementation plan and status within the Asia/Pacific region so as to aid the development of the regional SWIM implementation roadmap.</p>	<p>Follow-up: <input checked="" type="checkbox"/> Required from States</p>
<p>When: 22-Oct-21</p>	<p>Status: Adopted by Subgroup</p>
<p>Who: <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: SWIM TF</p>	

List of Conclusions/Decisions adopted by CNS SG/25 on behalf of APANPIRG on Technical Matters

Decision CNS SG/25/04 (SWIMTF/05/02) – Revised SWIM TF Terms of Reference	
What: That, the revised SWIM TF Terms of Reference (ToR) as shown in Appendix F to the report be 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 align with the progress made since the establishment of SWIM TF, the update of ICAO global and regional air navigation plans, and the revised task groups under SWIM TF adopted at SWIM TF/4.	Follow-up: <input type="checkbox"/> Required from States
When: 22-Oct-21	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	

Conclusion CNS SG/25/05 – The Catalogue of Asia and Pacific Flight Inspection and Flight Validation Service Providers	
What: That, <i>The Catalogue of Asia and Pacific Flight Inspection and Flight Validation Service Providers</i> (Eleventh Edition) in the Appendix G to the report is adopted and be published on the ICAO Regional Office website.	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 information in <i>The Catalogue of Asia and Pacific Flight Inspection and Flight Validation Service Providers Tenth Edition, April 2018</i>) need to be updated as per the recommendation of CNS SG/24	Follow-up: <input type="checkbox"/> Required from States
When: 22-Oct-21	Status: Adopted by Sub-group
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:	

List of Conclusions/Decisions adopted by CNS SG/25 on behalf of APANPIRG on Technical Matters

Conclusion CNS/SG/25/06 - Update of Flight Inspection Guidance Material (FIGM) for APAC Region	
What: That, the Edition 2.0 of the Flight Inspection Guidance Material (FIGM) provided in Appendix H to the Report be 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 type="checkbox"/> Required from States
When: 22-Oct-21	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:	

Conclusion CNS SG/25/10 (SURICG/6/4) (DAPs WG/4/6) - Mode S DAPs IGD 3.0	
What: That, the <i>Mode S DAPs Implementation and Operation Guidance Document</i> Edition 3.0 provided in Appendix J to the report be 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: Editorial correction and revision to reflect regional updates in implementation.	Follow-up: <input checked="" type="checkbox"/> Required from States
When: 22-Oct-2021	Status: Adopted by Sub-Group
Who: <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: SURICG	

List of Conclusions/Decisions adopted by CNS SG/25 on behalf of APANPIRG on Technical Matters

Conclusion CNS SG/25/11 (SURICG/6/5) (Draft Conclusion DAPs WG/4/7 and Draft Decision DAPs WG/4/8) - Revision of the Regional Supplement to ASTERIX Interface Control Document (ICD)	
<p>What: ICAO APAC Regional Office to:</p> <p>a) update EUROCONTROL with the latest SAC allocation within Asia Pacific; and</p> <p>b) coordinate the allocation of SAC within Asia Pacific and not the SIC.</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global</p> <p><input 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>
<p>Why:</p> <p>a) EUROCONTROL published the SAC for all the regions except Asia Pacific. It is believed that the publication will be beneficial to the developers of future message protocol and surveillance related applications.</p> <p>b) SIC is managed by State and there is little value for ICAO APAC to manage the SIC. Considering the workload to manage the SIC and the negligible benefits, it is proposed that ICAO APAC not to manage SIC.</p>	<p>Follow-up:</p> <p><input type="checkbox"/> Required from States</p>
When: 22-Oct-2021	Status: Adopted by Sub-Group
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 checked="" type="checkbox"/> Other: SURICG	

Decision CNS SG/25/12 (SURICG/6/6): Revised ToR of Surveillance Study Group (SURSG)	
<p>That, the Revised Terms of Reference of the Surveillance Study Group (SURSG) provided in Appendix L to the report be adopted.</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Political /Global</p> <p><input 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>
<p>Why: The SURSG/1 meeting reviewed the ToR and made amendments on adding chair role and function, frequency of the meeting of SURSG and the mode of the various task lead meetings for effective progress update, decision making, work assignments as they arise and the need to update the list of contributing States as necessary.</p>	<p>Follow-up: <input type="checkbox"/> Required from States</p>
When: 22-Oct-2021	Status: Adopted by Sub-Group
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"/> APANPIRG <input checked="" type="checkbox"/> Other: SURICG	

List of Conclusions/Decisions adopted by CNS SG/25 on behalf of APANPIRG on Technical Matters

Conclusion CNS SG/25/13 (SURICG/6/7) - Integrity of ICAO Aircraft Address and Target Identification in ADS-B / MLAT / Mode S Data and Flight Plan	
What: To urge States/Administrations to proactively follow up with air operators to address discrepancies of ICAO Aircraft Address and Target Identification between ADS-B / MLAT / Mode S data and flight plan.	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: Such discrepancies will cause safety implications in ATC operation and induce additional workload to controllers and supporting staff in handling the cases.	Follow-up: <input checked="" type="checkbox"/> Required from States
When: 22-Oct-2021	Status: Adopted by Sub-group
Who: <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: SURICG	

Decision CNS SG/25/14 (SURICG/6/8): Revised ToR of Surveillance Implementation Coordination Group (SURICG)	
That, the Revised Terms of Reference of the Surveillance Implementation Coordination Group (SURICG) provided in Appendix N to the report be 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 ToR from dissolved SEA/BOB ADS-B WG was reviewed and necessary updates were identified.	Follow-up: <input type="checkbox"/> Required from States
When: 22-Oct-2021	Status: Adopted by Sub-Group
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"/> APANPIRG <input checked="" type="checkbox"/> Other: SURICG	

Conclusion CNS SG/25/15 (SURICG/6/9) - 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 the report, which consolidated all change proposals during SURICG/6, is adopted as Version 14.	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: Updates from SURICG/6	Follow-up: <input type="checkbox"/> Required from States
When: 22-Oct-2021	Status: Adopted by Subgroup

List of Conclusions/Decisions adopted by CNS SG/25 on behalf of APANPIRG on Technical Matters

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 checked="" type="checkbox"/> Other: SURICG
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Decision CNS SG/25/16 (ATMAS TF/2/1 (APA TF/7/1)) - Dissolution of APA TF	
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 undertaken by ATMAS TF. That, the APA TF be dissolved.	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 APA TF Terms of Reference have been completed and pending action items will be undertaken by ATMAS TF.	Follow-up: <input type="checkbox"/> Required from States
When: 22-Oct-2021	Status: Adopted by Sub-Group
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 checked="" type="checkbox"/> Other: ATMAS TF	

Decision CNS SG/25/17 (ATMAS TF/2/2) – Revised ATMAS TF Terms of Reference	
What: That, the revised ATMAS TF Terms of Reference (ToR) as shown in Appendix P of the Report be 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: After dissolution of the APA TF, the ongoing APAC regional AIDC work will be conducted by ATMAS TF.	Follow-up: <input type="checkbox"/> Required from States
When: 22-Oct-21	Status: Adopted by Sub-Group
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: ATMAS TF	

List of Conclusions adopted by APANPIRG/32 Meeting related to CNS

Conclusion APANPIRG/32/7 (CNS SG/25/02) - Implementation of CRV for small Pacific Island and small ANSP in the region using CRV Solution, PCCWG SLA Package D.	
<p>What: That, the CRV OG should consider the following to assist small Pacific Islands & small ANSP in APAC in the implementation of CRV:</p> <p>a) Small Pacific Island and small ANSP in the region to consider using CRV SLA package D as the CRV solutions to implement CRV for the exchange of voice & AMHS services</p> <p>b) With target date to implement CRV by the end of 2021 by APANPIRG Conclusion C 31/12, it is recommended that the CRV OG to work closely with the small Pacific Islands, small ANSP in the region and PCCWG on a cost effective CRV solution to implement CRV.</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global</p> <p><input type="checkbox"/> Inter-regional</p> <p><input checked="" type="checkbox"/> Economic</p> <p><input type="checkbox"/> Environmental</p> <p><input checked="" type="checkbox"/> Ops/Technical</p>
<p>Why: To facilitate the implementation of CRV for the small Pacific Island & small ANSP in the region</p>	<p>Follow-up: <input checked="" type="checkbox"/> Required from States</p>
<p>When: 03-Dec-2021</p>	<p>Status: Adopted by PIRG</p>
<p>Who: <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: ACSICG</p>	

Conclusion APANPIRG/32/8 (CNS SG/25/07) - Interrogator Code (IC) Planning and Coordination	
<p>What: That,</p> <p>With the need to extend the Use of Surveillance Identifier (SI) in Interrogator Code (IC) on top of Interrogator Identifier (II), the relevant APANPIRG Conclusions were updated as follows:</p> <p><i>Coordination Process for SSR Mode S Interrogator Code (IC) (formerly Conclusion 19/40)</i></p> <p>a) in view of the increasing density of SSR interrogator installations in the region, and that States have varying readiness to extend from Interrogator Identifier (II) to both Interrogator Identifier and Surveillance Identifiers (SI) codes, there will be a period whereby both II and SI will be used.</p> <p>b) while implementing SSR Mode S, States should take into account following issues while assigning IC for these installations:</p> <ul style="list-style-type: none"> • for planning the implementation of SSR Mode S interrogators, administrations should ensure that the interrogators with overlapping coverage are not operating with the same IC. • where, the coverage of the interrogator extends beyond the boundaries of the State, The IC should be worked out in 	<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>

List of Conclusions adopted by APANPIRG/32 Meeting related to CNS

<p>coordination with the ICAO Asia and Pacific Office and the neighbouring States concerned, and</p> <ul style="list-style-type: none"> • administrations should inform the ICAO Asia and Pacific Office about the assigned IC for these installations. <p><i>Coordination Requirements for SSR Mode S Interrogator Codes (IC) (formerly Conclusion 20/56)</i></p> <p>States be advised to provide the following information on SSR Mode S Interrogator Code to the ICAO Asia/Pacific Office for coordination and registration.</p> <p>a) Name of country/territory and location of facility; b) Antenna Coordinates (Latitude and Longitude); c) Elevation of antenna above the Mean Sea Level (MSL) in meters; d) Maximum Coverage of SSR Mode S Interrogator in nautical mile; e) II Code (1 to 15) or SI Code (1 to 63); and f) Remarks (special configuration such as radar clustering, lockout override, II/SI mode capability)</p> <p><i>Planning Criteria for SSR Mode S Interrogator Code (IC) Assignment (formerly Conclusion 20/57)</i></p> <p>The planning criteria for SSR Mode S IC coordination and assignment as provided in Appendix J of Doc 9924 (Third Edition, 2020) be adopted for use in the Asia/Pacific Region.</p>	
<p>Why: Due to higher density of radars, some States are facing a shortage of II codes. It has to be solved by transiting from II to SI code. It is noted that state may use a mixture of II and SI codes before complete migration to SI code.</p> <p>The assignment of interrogator codes (IC), where necessary in areas of overlapping coverage, across international boundaries of flight information regions, shall be the subject of regional air navigation agreements.</p> <p>States still have to coordinate with ICAO APAC Regional Office on the allocation of II codes and SI codes.</p>	<p>Follow-up: <input checked="" type="checkbox"/>Required from States</p>
<p>When: 03-Dec-2021</p>	<p>Status: Adopted by PIRG</p>
<p>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 checked="" type="checkbox"/>Other: SURICG</p>	

*Note: This draft conclusion superseded **APANPIRG Conclusions 19/40, 20/56 and 20/57.***

<p>Conclusion APANPIRG/32/9 (CNS SG/25/08) - Transition from II code to II and SI mixed code</p>	
<p>What: States with Mode S radar capable of performing II/SI mode operations are encouraged to transit from II code to II and SI mixed code, so as to ease the shortage of II codes. States planning to perform</p>	<p>Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional</p>

List of Conclusions adopted by APANPIRG/32 Meeting related to CNS

the transition shall coordinate with ICAO APAC Regional Office to obtain the SI codes.	<input checked="" type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: Due to higher density of radars, some States are facing a shortage of IC codes, which has to be solved by transiting from II to II and SI mixed code. It is noted that radars using II and SI codes can co-exist, hence there is no need for a big bang approach. However, States still have to coordinate with ICAO APAC Regional Office on the allocation of SI codes.	Follow-up: <input checked="" type="checkbox"/> Required from States
When: 03-Dec-2021	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 checked="" type="checkbox"/> Other: SURICG	

Conclusion APANPIRG/32/10 (CNS SG/25/09) - The APAC Regional Roadmap for Mode S Implementation	
What: That, the APAC Regional Roadmap for Mode S Implementation provided in Appendix D to the Report on Agenda Item 3.4 be adopted.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input checked="" type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: The revised Roadmap defined the scope and rational steps for the implementation of Mode S in APAC region.	Follow-up: <input checked="" type="checkbox"/> Required from States
When: 03-Dec-2021	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 checked="" type="checkbox"/> Other: SURICG	

Presentation of the initial proposal:

1. The *Background* and *Comments* are provided in *italic text*.
2. The text of the proposed amendment is arranged to show deleted text with a line through it and new text highlighted with grey shading, as shown below:

- | | |
|---|-----------------------------------|
| a) Text to be deleted is shown with a line through it. | text to be deleted |
| b) New text to be inserted is highlighted with grey shading. | new text to be inserted |
| c) Text to be deleted is shown with a line through it followed by the replacement text which is highlighted with grey shading. | new text to replace existing text |

**REVISED TERMS OF REFERENCE OF
ASIA AND PACIFIC
ATM AUTOMATION SYSTEM TASK FORCE (ATMAS/TF)**

Consists of objectives and deliverables as follows:

The Objectives of the APAC ATMAS/TF are to:

- 1) *Keep abreast of the latest developments in ATM automation systems and associated technologies to cope with forthcoming development and implementation of ICAO SARPs, the Global Air Navigation Plan (GANP), the Global Aviation Safety Plan (GASP) and Asia/Pacific Seamless Air Navigation Service (ANS) Plan (APSAP);*
- 2) *Facilitate the implementation, enhancements, operation and maintenance of ATM automation systems and services identified in the Aviation System Block Upgrades (ASBU) elements and APSAP elements using the project management principles where appropriate;*
- 3) *Ensure continuous and coherent development of the ATM automation systems that is harmonized with adjacent regions to enhance systems robustness, resilience, interoperability and cybersecurity; and*
- 4) *Review, identify and address major issues in technical, operational, safety and regulatory aspects to facilitate the implementation or provision of safe, efficient and orderly ATM services.*
- 5) *Encourage collaboration among ANSPs in implementing ATM automation systems so as to reduce operating costs and enable quick implementation of new requirements to cope with new challenges.*
- 6) *Follow up, oversee and share experiences of the AIDC implementation and provide a coordination framework among States for wider and effective implementation of AIDC across the APAC region.*

Deliverables to meet the Objectives:

CNS SG/25
Appendix P to the Report

1) To submit progress report to the ICAO CNS Sub-group while keeping ATM Sub-group informed of addressing the APAC ATMAS/TF deliverables (listed in 2 to 7 below);

2) To support the ICAO in making specific recommendations and developing guidance materials, such as minimum functional/performance requirements and additional/local requirements, which aim at facilitating the implementation or provision of robust, safe, efficient and orderly ATM services by the use of existing and/or new procedures, facilities and technologies in relation to ATM automation systems;

3) To review outcome of the AN-Conf., DGCA Conference, APANPIRG, CNS Sub-group, ATM Sub-group, RASMAG, and SURICG related to ATM automation systems, revise and update a tasks list and action items for the ATMAS/WG;

4) To study and identify applicable applications, share experience, and recommend the best industry practice in the Asia and Pacific Regions considering:

- Systems planning and design
- Open / Service Oriented Architecture
- HMI adaptation, data synchronization and operational enhancements
- Safety nets
- ICAO roadmap in the GANP / ASBU
- Systems interoperability
- Standardization of information exchange
- AIDC Implementation
- Operation and maintenance practice
- Acceptance and certification
- Flight inspection
- Cybersecurity
- Safety assessment
- Training
- Transition

5) To encourage research and development, trials and demonstrations of applications and technologies, and, as necessary, steer for the sharing of this information and expertise between States/Administrations through organizing educational seminars and symposia to educate States/Administrations and airspace users;

6) To formulate draft Conclusions and Decisions relating to matters in the field of ATM automation systems that come within the scope of the APANPIRG, CNS Sub-group, ATM Sub-group, and RASMAG work plan; and

7) To collaborate with relevant international organization (such as EuroControl) for harmonisation of ATM system requirements.

Timeframe for Deliverables:

For deliverable item 2 on guidance materials, it is anticipated that a first draft could be made available in 3 years after establishment of the Task Force for seeking endorsement by CNS Sub-group, after which the guidance materials would be updated/enhanced on an on-going basis. For other deliverable items 3-7, they will be made available as appropriate subject to review by the Task Force. The life time of the Task Force would be subject to review after endorsement of the first edition of the guidance materials.

Meeting:

The APAC ATMAS/TF shall convene annually with at least one face-to-face meeting per year, which is supplemented by teleconference meetings (e.g. WebEx) as appropriate.

Membership:

All APAC member States/Administrations providing air navigation services in the Asia and Pacific Regions. APAC members should nominate Subject Matter Experts from Civil Aviation Authorities, ANSPs, and other organizations with strong background in engineering and operation in relation to ATM automation systems to participate into the Task Force. The Task Force would also invite representatives of International Organizations recognized by the ICAO Council as representing important civil aviation interests to participate in its work in a consultative capacity.

CNS SG/25
Appendix Q to the Report

REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE CNS FIELDS IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirement	States/facilities	Description	Date first reported	Remarks	Description	Executing body	Target date for completion	Priority for action
<p>Reliable ground to ground communication as specified in the regional Air Navigation Plan (Doc.9673)</p> <p>Tables CNS II-1; CNS II-2 & CNS II-3</p>	Afghanistan and Pakistan	<p>Unreliability of AFS communication between Afghanistan and Pakistan was brought to the notice of APANPIRG/21. Lack of reliability in the AFS including data communication between Kabul and Karachi and ATS voice communication between Lahore and Kabul was identified.</p>	September 2010	A follow-up COM coordination meeting held in July 2019 discussed way forward	<p>1. Site visits in Pakistan by expert from the VSAT service provider were made in February and March 2016. Remedial recommendations were provided to CAA. Pakistan.</p> <p>2. Both Afghanistan and Pakistan agreed to as first step to recover the VSAT connection by upgrading terminals in Lahore and Karachi. Afghanistan will provide assistance and does the Network Configuration settings;</p> <p>3. Both States also agreed to implement CRV as soon as practical to resolve the existing COM deficiencies.</p>	CAA. Afghanistan and CAA. Pakistan	June 2020	A

ACTION ITEMS OF CNS SG/25					
Action Item	Subject	Status / Target Date	Action Party	Status	Remarks / follow-up
25-1	SWIM TF to consider modifications proposed by Australia in Flimsy/02 in coming task lead meetings and SWIM TF/6 and to present revised ToR, if any as the outcomes of discussion, in CNS SG/26	CNS SG26	SWIM TF, ICAO Secretariat	Open	
25-2	The ICAO Secretariat will prepare a working paper to present in RASG-APAC/11 as an outcome of CNS SG/25 discussion for considering 5G potential interference with radio altimeter as a potential hazard.	RASG-APAC/11	ICAO Secretariat	Open	
25-3	The Member States/Administrations were requested to review and submit the updates to ICAO APAC Regional Office for the updates on various facilities listed in e-ANP Vol II Part III Table CNS II-APAC 2 for new international aerodromes added in 2021 by filling the PFA template specified in section 2.4 and send it to ICAO APAC Regional Office	CNS SG/26	Member States, ICAO Secretariat	Open	
25-4	The Chair of CNS SG invited the ICAO Secretariat to carry out the same review on e-ANP volumes in ATM aspects.	CNS SG/26	ICAO Secretariat	Open	
25-5	The Chair of CNS SG invited ICAO APAC Regional Office to follow up with ICAO Headquarter on regional network cybersecurity issue	CNS SG/26	ICAO Secretariat	Open	
25-6	The meeting requested ICAO to consider organizing another webinar on this subject on how Information Security Requirements for Exchange of Information over IP can be implemented by Member States in a pragmatic manner	CNS SG/26	ICAO Secretariat	Open	