



ICAO

*International Civil Aviation Organization***Eighth Meeting of the Surveillance Implementation Coordination Group (SURICG/8)***Bangkok, Thailand, 6 – 9 June 2023*

Agenda Item 2: Review of outcomes of relevant meetings on Surveillance

**REVIEW OF RELEVANT ICAO MEETINGS**

(Presented by the Secretariat)

**SUMMARY**

The paper presents the relevant outcomes of the meetings held in 2022 including the thirty third Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/33), the twenty sixth meeting of Communications, Navigation, and Surveillance sub-group (CNS SG/26) and relevant discussions in other meetings.

**1. INTRODUCTION**

1.1 The Thirty-third Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/33) was hosted by Indonesia at the Trans Resort Bali in Bali, Indonesia from 22 to 24 November 2022 as a hybrid event (in-person and virtual participation). The Meeting was attended by **326** participants from **30** Member States, **2** Special Administrative Regions of China, and **7** International Organizations (ACI, CANSO, IATA, ICAO, IFALPA, IFATSEA and PASO). The APANPIRG/33 meeting report, working papers, information papers, and other resources can be accessed by the following link:

<https://www.icao.int/APAC/Meetings/Pages/2022-APANPIRG33.aspx>

1.2 The Twenty Sixth Meeting of the Communications, Navigation and Surveillance Sub-group (CNS SG/26) of APANPIRG was held from 5 to 9 September 2022 via Video Tele-Conference (VTC) using Microsoft Teams. The meeting was attended by **247** participants from **26** States/Administrations, and **4** International Organizations, including 21 participants from industry partners. The CNS SG/26 meeting report, working papers, information papers, and other resources can be accessed by the following link:

<https://www.icao.int/APAC/Meetings/Pages/2022-CNS-SG-26.aspx>.

1.3 The APANPIRG/33 meeting reviewed the outcomes of the CNS SG/26 and noted with appreciation the work done and achievements by the CNS SG and the contributory bodies reporting to APANPIRG through the CNS SG. The meeting discussed CNS-related matters and took actions on the report of CNS SG/26 meeting and other papers presented under Agenda Item 3.4 of APANPIRG/33.

1.4 This paper summarized relevant information and updates with the highlight of the reviewed outcomes of relevant discussions of other meetings of CNS SG/26 and APANPIRG/33.

## 2. DISCUSSION

The actions taken by APANPIRG/33 meeting on surveillance related matters are highlighted in blue below:

2.1 The CNS SG/26 meeting adopted the following **5** Conclusions and **2** Decisions:

Reference	Subject
<b>Conclusion CNS SG/26/03</b> ( <i>ACSICG/09/04</i> )	- Revised AFTN/ATSMHS Routing Directory
<b>Decision CNS SG/26/04</b> ( <i>SWIM TF/06/01</i> )	- The Use of the Internet for MET Information Services in Regional SWIM architecture
<b>Decision CNS SG/26/07</b> ( <i>SWIM TF/06/06</i> )	- Revised SWIM TF Terms of Reference
<b>Conclusion CNS/SG/26/09</b>	- Update of Flight Inspection Guidance Material (FIGM)
<b>Conclusion CNS SG/26/10</b> ( <i>SURICG/7/1 (DAPs WG/5/1)</i> )	- Mode S DAPs IGD 4.0
<b>Conclusion CNS SG/26/12</b> ( <i>SURICG/7/4</i> )	- Revised ADS-B Implementation and Operations Guidance Document (AIGD)
<b>Conclusion CNS SG/26/13</b> ( <i>ATMAS TF/3/1</i> )	- ATMAS IGD Edition 1.0

2.2 The contents of the above Conclusions/Decisions adopted by the CNS SG/26 are provided in **Attachment A** to this paper.

2.3 Based on the outcome of discussions on various agenda items, the CNS SG/26 meeting developed **5** Draft Conclusions and **1** Draft Decision for consideration by APANPIRG/33 Meeting, which were further adopted by APANPIRG/33. The Conclusions/Decisions adopted by APANPIRG/33 are as follows:

Reference	Subject
<b>Conclusion APANPIRG/33/6</b> (CNS SG/26/01 ( <i>ACSICG/09/01 (CRV OG/09/01)</i> ))	- Revised Amendment of the Management Service Agreement for CRV project (RAS14801)
<b>Conclusion APANPIRG/33/7</b> (CNS SG/26/02 ( <i>ACSICG/09/02 (CRV OG/10/01)</i> ))	- Extension of CRV Contract for one year.
<b>Decision APANPIRG/33/8</b> (CNS SG/26/05 ( <i>SWIM TF/06/03</i> ))	- Harmonization of Timelines for SWIM-related Initiatives

- Conclusion APANPIRG/33/9** (CNS SG/26/06 (SWIM TF/06/02, SWIM TF/06/04)) - The Asia-Pacific SWIM Implementation Timeframe and inclusion of the Asia/Pacific SWIM Implementation in the Asia/Pacific Seamless ANS Plan
- Conclusion APANPIRG/33/10** (CNS SG/26/08 (SRWG/6/2)) - Planning Principle for Aeronautical Frequency Bands of 108-117.975 MHz, 960-1215 MHz and 117.975-137 MHz
- Conclusion APANPIRG/33/11** (CNS SG/26/11 (SURICG/7/3)) - Revised Surveillance Strategy for the APAC Region

2.4 All APANPIRG/33 Conclusions related to CNS are provided in **Attachment B** to this paper.

2.5 The following captures the highlights of previous discussions in APANPIRG/33 relevant to this Meeting.

### **Surveillance**

#### Outcomes of SURICG/7 Meeting

2.6 The Meeting reviewed the outcomes of SURICG/7 including the achievements made by the Fifth Meeting of Mode S Downlinked Aircraft Parameters Working Group (DAPs WG/5) and the Second Meeting of the Surveillance Study Group (SURSG/2).

#### *Review Report of Mode S DAPs WG/5*

2.7 The Meeting noted that the APAC Regional Workshop on Mode S Implementation was held in conjunction with Mode S DAPs WG/5. The papers and issues discussed in the meeting covered Interregional IC Coordination, Guidance Material for Assignment of Interrogator Codes (IC) for MLAT and ADS-B, Reservation of IC Codes 14 and 15 for Research and Military, Trials of Mode S Surveillance Co-ordination Network, Upper Air Wind Speed Estimation based on Mode S SSR DAPs, Management of 1030/1090MHz Utilization, Planning Criteria for II/SI Code Assignment.

2.8 The Mode S DAPs Implementation and Operations Guidance Document was reviewed to include ADS-B DAPs and their benefits, the mandate of implementing ADS-B DAPs, the Mode S extended squitter transponder capability to broadcast ADS-B DAPs, and the application of ADS-B DAPs in the ATM automation system. CNS SG/26 subsequently endorsed the Conclusion CNS SG/26/10 (SURICG/7/1 (DAPs WG/5/1)): Mode S DAPs IGD 4.0.

2.9 The proposals for amending the Aeronautical Surveillance Manual (Doc. 9924) Appendix H and J were reviewed in CNS SG/26. The proposed text was still being worked out, and Surveillance Panel's Chair commented that the enhancement work could be completed by SP/5 in fall 2023.

2.10 The proposal from DAPs Working Group to rename the Group and update its Terms of Reference (ToR) to better reflect the current work scope that covers not only DAPs but also Mode S radars was reviewed in SURICG/7. After deliberation, SURICG/7 considered it appropriate to rename the Group as "Mode S and DAPs Working Group" and endorsed the Decision SURICG/7/2.

2.11 The latest work, enhancements and functionalities brought to the Frequency Finder tool were discussed to assist ICAO Regional Offices and States to manage and coordinate SSR Mode S II/SI codes, and aeronautical frequency assignments in ICAO COM Lists 2 and 3. Enhanced feature of a global database for Mode S II/SI code assignments was introduced in the latest version. The meeting

was invited to make extensive usage of the Frequency finder tool and provide feedback on the usage, suggestions, bugs, and recommendations.

2.12 The CNS SG/26 meeting supported the suggestion from the ICAO Secretariat on the need for DAPs WG to set up the list of Points of Contact for Mode S matters, such as the Mode S Interrogator Identifier (II)/ Surveillance Identifier (SI) code coordination. The SURICG Co-Chair suggested that States present surveillance related implementation matters in SURICG or its contributory bodies meetings first before considering presenting in higher level meetings such as CNS SG / APANPIRG.

*Review Report of SURSG/2*

2.13 SURSG/2 provided a progress summary of SURSG tasks since SURSG/1, listed out major recommendations in the Study Report, and proposed way forwards for the recommendations for members' discussions and decisions. SURSG/2 reviewed and deliberated the recommendations and moving forward proposals provided in the Table. The details of revised high-level recommendation and moving forward agreed by SURSG/2 were provided in the paper.

2.14 SURSG/2 deliberated and approved the necessity for establishment of the Surveillance Sharing in SWIM Trial Implementation Group (S3TIG) to oversee a trial proposed by the recommendation. SURICG/7 suggested that it would be more effective to form S3TIG as an ad-hoc group within SURSG in lieu of a contributory body under SURSG.

2.15 SURSG/2 discussed the Surveillance Data Sharing Proof of Concept (POC) conducted by HKCAD, PCCWG and Frequentis ComSoft. PCCWG shared the outcomes of a POC conducted on 4 March 2022, which was the collaboration of HKCAD, PCCWG and partner Frequentis ComSoft to demonstrate sharing ADS-B data in a simulated SWIM over CRV environment and the benefits of a Surveillance Central Data Processor (SCDP). PCCWG prepared a video to introduce the POC exercise which was presented in SURICG/7.

2.16 ROK presented its efforts to Implement FF-ICE Interoperability using Globally Unique Flight Identifier (GUFID) in SWIM Environment. The SURSG/2 meeting noted that by introduction of GUFID to the surveillance data, it not only solved mismatch problems on co-relation between FPL and surveillance data by Call sign, DoF, departure/arrival aerodrome, but also made the co-relation become simple and reliable. Additionally, ROK shared the detailed method of introducing the GUFID in the surveillance information domain.

*Review APAC Regional Surveillance Strategy*

2.17 The Surveillance Strategy for the APAC Region is expected to be regularly reviewed to cope with the prevailing circumstances and developments. The ICAO Secretariat presented the last version of the Surveillance Strategy for the APAC Region adopted in 2019 for review. SURICG/7 reviewed the comments/views received for revising the Surveillance Strategy, discussed the amendment proposals, formulated the revised Strategy, and further discussed and endorsed by CNS SG/26. Subsequently, the Meeting adopted the Conclusion as follows:

<b>Conclusion APANPIRG/33/11 (CNS SG/26/11 (SURICG/7/3)): Revised Surveillance Strategy for the APAC Region</b>	
What: That, the Revised Surveillance Strategy for the APAC Region provided in <b>Appendix D to Agenda Item 3.4</b> be adopted.	Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input checked="" type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: To reflect the outcome of the latest development in surveillance technology.	Follow-up: <input checked="" type="checkbox"/> Required from States
When: 24-Nov-22	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	

2.18 The revised Surveillance Strategy for the APAC Region is provided in **Attachment C** to this paper for ease of reference, which was circulated by State Letter Ref.: T 8/5.1 – AP020/23 (CNS) on 27 January 2023. The document is also accessible at the following webpage: <https://www.icao.int/APAC/Pages/eDocs.aspx>

*Other Surveillance-related Topics*

2.19 The Meeting noted that the CNS SG/26 reviewed surveillance topics including the 1090MHz occupancy monitoring in the Region and best practices, the evaluation of Space Based ADS-B in APAC, updates to revised ADS-B Implementation and Operations Guidance Document (AIGD) as Conclusion CNS SG/26/12 (SURICG/7/4), the work done in generating ATS Surveillance and DCPC VHF Coverage Charts for APAC Region, the follow-up of Inconsistent ICAO Aircraft Address and Target Identification between Surveillance Data and Flight Plan and also other surveillance implementation updates from States.

**Automation**

Outcome of ATMAS TF/3 Meeting and ATM Automation System related Issues

*Webinar on Implementation of ATM Automation System*

2.20 The Webinar on Implementation of ATM Automation System was organized in conjunction with the ATMAS TF/3 meeting on 7 June 2022. The Webinar was conducted to cover Experience Sharing of Practices, and System Integration and Interoperability respectively. It provided the APAC region an update on the latest developments and practices related to ATM automation systems at global and regional levels. Total eight comprehensive presentations from contributors were presented during the webinar.

*Repository of the ATMAS in APAC*

2.21 The table of ATMAS status in APAC region, re-designed and re-formatted by the ad-hoc group led by Indonesia, has been reviewed and adopted by the ATMAS TF/3 meeting. State Letter Ref.: T 8/12.18: AP139/22 (CNS) has been issued on 21 October 2022 to invite States/Administrations to complete and return the table of ATMAS Status in APAC Region.

*Air Traffic Management Automation System Implementation and Operations Guidance Document (ATMAS IGD)*

2.22 The Meeting noted that the ATMAS IGD was adopted by ATMAS TF/3 and CNS

SG/26 via *Conclusion CNS SG/26/13 (ATMAS TF/3/1) - Air Traffic Management Automation System Implementation and Operations Guidance Document (1.0)*.

*Other ATM Automation System related topics*

2.23 The Meeting noted the Repository of AIDC Implementation Status in APAC was formulated, and invited States to validate and supplement the information in the Repository via State Letter Ref.: T 8/3.5: AP135/22 (CNS) on 17 October 2022. The Meeting also noted the discussion of the consolidated implementation issues reported and resolved.

**CNS Review and Updates**

*CNS Deficiencies*

2.24 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. In addition, the meeting noted WP/10 of ATM SG/9 regarding the IFALPA defined deficiencies, States/Administrations are encouraged to take note of CNS-related IFALPA deficiencies and take proper action to address these IFALPA deficiencies. Air Navigation Deficiencies were reviewed under Agenda Item 4 of the Meeting.

*Other Global and Regional Issues*

2.25 The CNS SG/26 meeting reviewed Regional CNS Requirements in ICAO APAC e-ANP, Seamless ANS Plan and National Air Navigation Plan (NANP), the regional commitment progress on Beijing Declaration Implementation Related to CNS, as well as updates on Seamless ANS Plan. The meeting also shared the Update on ICAO GANP Study Group related to CNS and the presentation from CNSS Section and Airport Operations and Infrastructure (AOI) Section, ANB, ICAO HQ, regarding global developments on CNS.

**Human Factors and Air Traffic Safety Electronics Personnel (ATSEP)**

*Review Outcomes of Small Working Group Study on Human Factor Issues of ATSEP*

2.26 IFATSEA-led Small Working Group on human factor issues of ATSEP presented the draft guidance material for review in the CNS SG/26 meeting. ICAO Secretariat suggested to share the guidance material with APAC Member States for their comments and observations via State Letter. The meeting encouraged Member States to review the guidance material and respond to the State Letter in a timely manner.

*Standardizing the ATSEP Training for the Successful Implementation of the GANP*

2.27 The Meeting noted in CNS SG/26 a request was made on specifying initial training for certain prioritized modules of ASBU as an integral part of GANP. ICAO Secretariat noted the deliberation and will work with IFATSEA to share with the relevant expert group of ICAO HQ and the deliberation be evaluated along with other topics identified as valuable to the ATSEP training objectives.

**Cybersecurity and New Technologies**

*Updates on ICAO International Aviation Trust Framework*

2.28 The Meeting noted the sharing of recent development ICAO's work on building an International Aviation Trust Framework since CNS SG/25, including developments of TFSG,

information security framework (ISF), new proof of concept exercise, and digital identity. The meeting was informed that several papers on the trust framework and cybersecurity were received for A41, and ICAO is working on SkyTalk and sidebar meetings to promote cyber activities within ICAO.

*Application of New Technologies*

2.29 Apart from encouraging the Member States to share their experience on new technologies application, as the response to APANPIRG's call on enhancing engagement with the industry, CNS SG and its contributory bodies invited various industry partners to share and update the latest progress in relevant areas. The sharing and discussions covered Surface Security Enhancement Application Based on Voice and Photoelectric Intelligent Assistant; Enhancement of AeroMACS SARPs and Technical Manual; LEO Navigation Augmentation Concept, Constellation Construction and Civil Aviation Application Research; Digital Tower and Apron Management System to Support Safe and Efficient Operation, etc.

*Industry Presentations*

2.30 There were four industry presentations invited in CNS SG/26. *CETC Glarun Technology* presented Comprehensive Applications of the Radar-based Monitoring Systems in Airport; *Searidge* presented the Resilience, Recovery, Refocus as its 3Rs concept applied in the process to implement digital tower; *Huawei* presented Advanced Digitization Facilitating Air Traffic Development; and *Saab* shared its Experience on Digital Towers.

**CNS Works and Other Business**

*Impact of COVID-19 to CNS Works in 2022*

2.31 Due to the decline in implementation of CNS/ATM projects by the Member States, the planned programme has been postponed or has broken into phases and the harmonisation of implementing activities between neighbouring States and among stakeholders became more difficult.

*Tracking CNS-Related APANPIRG Conclusions/Decisions*

2.32 In view of the importance of the APANPIRG Conclusions/Decisions, the Secretariat has reviewed the reports of the former meetings from APANPIRG/1 to APANPIRG/32, extracted more than 600 CNS-related APANPIRG Conclusions/Decisions from the reports on various media, and consolidated in one Microsoft Excel table with marked status as *in force/applicable, closed, not applicable, group dissolved, superseded, task completed, and undertaken by ICAO HQ/Panels*, for easy reference and tracking by States/Administrations.

**Other papers presented under Agenda Item 3.4 of APANPIRG/33**

*Development of Fully Integrated Safeguarding Surfaces to Uphold Flight Safety While Facilitating Pressing Needs of Infrastructure / Building Developments in Hong Kong (WP/18)*

2.33 This paper highlighted the potential impacts to airport and ATC operation induced by erection of new/modification of existing buildings at or in vicinity of airports. It presented the successful experience for Hong Kong, China to make use of an advanced computer modelling technology to develop fully integrated safeguarding surfaces with high accuracy and publish them under a legal framework to ensure airport and ATC operation are well protected to uphold flight safety while facilitating the pressing needs of infrastructure/building developments to cope with various economic and development needs of the community. The Meeting was invited to encourage States/Administrations to be fully aware of the potential risks induced by protrusion of safeguarding surfaces; and develop integrated safeguarding surfaces for CNS equipment, aerodrome and flight

procedures with high accuracy, and publish them under a regulatory framework.

Managing Changes to Spectrum Use for Safe Coexistence (IP/06) - United States

2.34 The United States informed the Meeting about the 5G C-Band Implementation in the United States in details, with lessons learnt and future focus beyond. As the radio frequency spectrum is a natural resource with finite capacity and constantly increasing demands, internationally, the aviation industry relies on the use of spectrum for a variety of technologies that ensure safe, efficient and cost effective air travel. Similarly, innovation by the telecommunications industry is critical for economic and societal advances throughout the world, requiring States charged with making spectrum decisions to balance these needs. It was believed that increased and sustained cooperation, coordination, and communication among regulatory entities, consistent with their respective roles and authorities, will be conducive to promoting spectrum coexistence. The Meeting was invited to note the information provided in this paper and visit the FAA’s 5G and Aviation Safety website ([www.faa.gov/5g](http://www.faa.gov/5g)) for more detailed information.

CNS-ATM System Upgrade in Ulaanbaatar FIR (IP/10) – Mongolia

2.35 The Meeting noted the sharing from Mongolia on their strategic plan “Seamless aviation-2030” in accordance to global documents such as ICAO GANP, ASBU, Seamless ANS Plan and regional civil aviation development planning and long-term "Vision-2050" policy of Mongolia, advising their successfully-redesigned Mongolian airspace and their progressing of air navigation equipment upgrades and ANS infrastructure developments.

The Implementation of Surveillance Systems in Pyongyang FIR (IP/11) - Democratic People’s Republic of Korea

2.36 The Meeting noted the information provided by DPRK on the implementation of surveillance systems to provide the safety, regularity and efficiency of the international flights within Pyongyang FIR. The information of DPRK AIP concerned with ADS-B implementation and the SIC assignment within Pyongyang FIR were provided in the paper. DPRK expressed the postponement of their plan to share their SSR surveillance data due to not joining the CRV.

**CNS SG Action Items**

2.37 The CNS SG identified a number of actions items, 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/26 is provided in **Attachment D** for information and necessary actions.

**3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) note the outcome of the APANPIRG/33, CNS SG/26, and relevant contributory bodies, and take any necessary follow-up actions; and
- b) discuss any relevant matters as appropriate.

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SURICG/8  
Attachment A to WP/02

List of Conclusions/Decisions adopted by CNS SG/26 on behalf of APANPIRG on Technical Matters

<b>Conclusion CNS SG/26/03 (ACSICG/09/04) - Revised AFTN/ATSMHS Routing Directory</b>	
What: That, the AFTN/ATSMHS Routing Directory for the APAC Region provided in <b>Appendix B</b> to the report be further updated and distributed to States/Administrations as 29 <sup>th</sup> Edition.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: A number of new ATSMHS connections have been established and became operational. Consequential amendments to the AFTN/ATSMHS Routing Directory are required.	Follow-up: <input type="checkbox"/> Required from States
When: 9-Sep-22	Status: Adopted by Subgroup
Who: <input checked="" type="checkbox"/> CNS SG <input checked="" type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other:	
<b>Decision CNS SG/26/04 (SWIM TF/06/01) - The Use of the Internet for MET Information Services in Regional SWIM architecture</b>	
What: That, the use of Internet for meteorological information services will be considered in designing the regional SWIM architecture.	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 support cost-effective and efficient meteorological information services for exchange of less-sensitive meteorological information in SWIM.	Follow-up: <input type="checkbox"/> Required from States
When: 9-Sep-22	Status: Adopted by Subgroup
Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: SWIM TF	
<b>Decision CNS SG/26/07 (SWIM TF/06/05) – Revised SWIM TF Terms of Reference</b>	
What: That, the revised SWIM TF Terms of Reference (ToR) as shown in <b>Appendix E</b> 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 SWIM TF/5 and outcomes of Action item 25-1 from CNS SG/25.	Follow-up: <input type="checkbox"/> Required from States
When: 09 September 2022	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	

SURICG/8  
Attachment A to WP/02

List of Conclusions/Decisions adopted by CNS SG/26 on behalf of APANPIRG on Technical Matters

<b>Conclusion CNS SG/26/09 - Update of Flight Inspection Guidance Material (FIGM)</b>	
What: That, the Edition 3.0 of the Flight Inspection Guidance Material (FIGM) provided in <b>Appendix F</b> 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: 9-Sep-22	Status: Adopted by Subgroup
Who: <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other: -	

<b>Conclusion CNS SG/26/10 (SURICG/7/1 (DAPs WG/5/1)): Mode S DAPs IGD 4.0</b>	
What: The Mode S DAPs Implementation and Operation Guidance Document Edition 4.0 provided in <b>Appendix G</b> 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 revised draft includes ADS-B DAPs and adds guidance on the measurement of 1030/1090 MHz usage.	Follow-up: <input checked="" type="checkbox"/> Required from States
When: 9-Sep-22	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"/> Other: -	

<b>Conclusion CNS SG/26/12 (SURICG/7/4) - Revised ADS-B Implementation and Operations Guidance Document (AIGD)</b>	
What: That, the revised ADS-B Implementation and Operations Guidance Document (AIGD) provided in <b>Appendix I</b> to the Report, which consolidated all change proposals during SURICG/7, be adopted as Version 15.0.	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/7	Follow-up: <input type="checkbox"/> Required from States
When: 9-Sep-22	Status: Adopted by Subgroup
Who: <input checked="" type="checkbox"/> Subgroup <input type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: SURICG	

<b>Conclusion CNS SG/26/13 (ATMAS TF/3/1) - ATMAS IGD Edition 1.0</b>	
What: The Air Traffic Management Automation System Implementation and Operations Guidance Document Edition 1.0 provided in <b>Appendix J to this Report</b> be adopted	Expected impact: <input type="checkbox"/> Political / Global

SURICG/8  
Attachment A to WP/02

List of Conclusions/Decisions adopted by CNS SG/26 on behalf of APANPIRG on Technical Matters

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	<input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: The revised draft has been added the DMAN function and reviewed/updated with inputs from various States	Follow-up: <input type="checkbox"/> Required from States
When: 9-Sep-22	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: ATMAS TF	

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SURICG8  
Attachment B to WP/02

A List of Conclusions adopted by APANPIRG/33 Meeting related to CNS

<b>Conclusion APANPIRG/33/6 (CNS SG/26/01 (ACSICG/09/01 (CRV OG/09/01))): Revised Amendment of the Management Service Agreement for CRV project (RAS14801)</b>	
<p>What: Recognizing that ICAO Technical Cooperation Bureau satisfactorily completed all the defined work items in the initial Management Service Agreement (MSA) and Project Document of RAS14801, that the required payments were settled, and that in end 2016, all the requirements of both parties have been fully completed and closed on record, That,</p> <p>i) all Pioneer States are encouraged to counter-sign the <b>Revised amended Pro Document provided in Appendix A to Agenda Item 3.4;</b></p> <p>ii) any Pioneer State not countersigning is entitled to get its share of the remaining fund balance back. and</p> <p>iii) a Pioneer State for which a direct CRV connection is not considered feasible in 2017 by the selected vendor is entitled to get its initial contribution in full</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: The initial scope of MSA was completed by ICAO TCB which allowed for a successful evaluation process and selection of a best and final offer; a majority of Pioneer States is willing to use the rest of their initial contribution to continue to support CRV implementation.</p>	<p>Follow-up: <input checked="" type="checkbox"/> Required from States</p>
<p>When: 24-Nov-22</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 type="checkbox"/> Other:</p>	

<b>Conclusion APANPIRG/33/7 (CNS SG/26/02 (ACSICG/09/02 (CRV OG/10/01))): Extension of CRV Contract for one year</b>	
<p>What:</p> <p>a) Recognizing that as per current contract, all authorities shall join the CRV project and sign the relevant Service Contract(s) with PCCWG with the billing start date on or before <b>31 December 2022</b> to not impose additional charges by the service provider and based on the survey responses of 2022, many Member States are in process to join CRV which may not be completed by December 2022, it is recommended to extend <b>current CRV contract for one year.</b></p> <p>b) If agreed to extend, as per amended CRV contract, all authorities shall join the CRV program and sign the relevant Service Contract(s) with PCCWG with the billing start date on or before <b>31 December 2023</b> to not impose additional charges by the service provider.</p> <p>c) After the extension, the CRV contract expiry date will be <b>31 December 2028.</b></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: Several ICAO Member States have requested to extend CRV contract due to COVID-19 pandemic in CRV</p>	<p>Follow-up: <input checked="" type="checkbox"/> Required from States</p>

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Implementation webinar held in 2021 and based on the response of the survey done in 2022, many Member States are in process to join CRV which may not be completed by December 2022.	
When: 24-Nov-22	Status: Adopted by PIRG
Who: <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other:	

<b>Decision APANPIRG/33/8 (CNS SG/26/05 (SWIM TF/06/03)):</b> <b>Harmonization of Timelines for SWIM-related Initiatives</b>	
What: To feedback to the ICAO Air Navigation Commission Technical Panels for a need to harmonize the implementation timelines of SWIM-related initiatives.	Expected impact: <input checked="" type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: There exists different timelines for the implementation of SWIM-related initiatives identified by various ICAO ANC Technical Panels. This creates confusion within States on their corresponding implementation sequences and as to how these different timelines are to be met.	Follow-up: <input type="checkbox"/> Required from States
When: 24-Nov-22	Status: Adopted by PIRG
Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input checked="" type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: SWIM TF	

<b>Conclusion APANPIRG/33/9 (CNS SG/26/06 (SWIM TF/06/02, SWIM TF/06/04)):</b> <b>The Asia-Pacific SWIM Implementation Timeframe and inclusion of the Asia/Pacific SWIM Implementation in the Asia/Pacific Seamless ANS Plan</b>	
What: 1. To set the timeframe for the implementation of SWIM in the Asia-Pacific region to be between 2024 and 2030, with 2030 being the target timeline for implementation completion. 2. To include SWIM implementation in the next edition of the Asia/Pacific Seamless ANS Plan.	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: This is to set the concrete target implementation of the Asia-Pacific regional SWIM to assist States in harmonizing their implementation plans in order to achieve the seamless information exchange across the region in time for future operations, e.g. FF-ICE. Additionally, to ensure that SWIM, a key building block to achieve the vision outlined in ICAO Doc 9854 Global ATM Operational Concept (GATMOC), is captured in the Asia/Pacific Seamless ANS Plan,	Follow-up: <input checked="" type="checkbox"/> Required from States

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A List of Conclusions adopted by APANPIRG/33 Meeting related to CNS

providing an overall framework for Asia/Pacific States to plan their implementations to meet the future performance requirements.	
When: 24-Nov-22	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: SWIM TF	

<b>Conclusion APANPIRG/33/10 (CNS SG/26/08 (SRWG/6/2)):</b> <b>Planning Principle for Aeronautical Frequency Bands of 108-117.975 MHz, 960-1215 MHz and 117.975-137 MHz</b>	
What: That, Doc 9718, Handbook on Radio Frequency Spectrum Requirements for Civil Aviation, Volume II, Second Edition – 2022, is adopted as the planning principle for aeronautical facilities and services operating in the aeronautical frequency bands of 108-117.975 MHz, 960- 1215 MHz and 117.975- 137 MHz in APAC.	Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: To implement the updated ICAO provisions	Follow-up: <input type="checkbox"/> Required from States
When: 24-Nov-22	Status: Adopted by PIRG
Who: <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other: -	

<b>Conclusion APANPIRG/33/11 (CNS SG/26/11 (SURICG/7/3)):</b> <b>Revised Surveillance Strategy for the APAC Region</b>	
What: That, the Revised Surveillance Strategy for the APAC Region provided in <b>Appendix D to Agenda Item 3.4</b> be adopted.	Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input checked="" type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: To reflect the outcome of the latest development in surveillance technology.	Follow-up: <input checked="" type="checkbox"/> Required from States
When: 24-Nov-22	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	

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**NOTES ON THE PRESENTATION OF THE PROPOSED AMENDMENT**

1. The text of the amendment is arranged to show deleted text with a line through it and new text highlighted with grey shading, as shown below:

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

**REVISED SURVEILLANCE STRATEGY FOR THE APAC REGION**

**Considering that:**

1. States are implementing CNS/ATM systems to gain safety, efficiency and environmental benefits, and have endorsed the move toward satellite and data link technologies;
2. The future air traffic environment will require increased use of aircraft-derived surveillance information for the implementation of a seamless automated air traffic flow management system;
3. The 11th Air Navigation Conference endorsed the use of ADS-B as an enabler of the global air traffic management concept and encouraged States to support cost-effective early implementation of ADS-B applications;
4. The 12th Air Navigation Conference endorsed the ICAO Aviation System Block Upgrades (ASBU) Framework with Modules specifying effective use of ADS-B/MLAT and associated communication technologies in bridging surveillance gaps and its role in supporting future trajectory-based ATM operating concepts. Cooperation between States is the key to achieve harmonized ATM system operations;
5. The 13th Air Navigation Conference endorsed the multilayer structure for the GANP, the ASBU and initial version of basic building block (BBB) frameworks and its change management process, which are available in an interactive format as part of the web-based GANP Portal. This allows ICAO to incorporate a flexible framework for new/emerging surveillance-related concepts such as space based ADS-B into future editions of the GANP;
6. APANPIRG has decided to use the 1090MHz Extended Squitter data link for ADS-B air-ground and air-air applications in the Asia/Pacific Region;
7. Use of surveillance systems that do not require GNSS will continue to meet many critical surveillance needs for the foreseeable future;
8. SARPs, PANS and guidance material for the use of ADS-B have been developed;
9. Availability of new technologies, such as space based ADS-B which is now operationally used by some States;
10. Mode S and ADS-B avionics (including DAPs) and processing systems are available;

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11. ADS-B IN applications and equipment are now available in commercial airliners and ICAO ASBUs include ADS-B IN applications;
12. There are continuing significant pressures on the radio spectrum for purposes outside aviation, particularly in the primary radar spectrum; and
13. ADS-B security issues are addressed by the ADS-B regional guidance material and security issues of Mode S surveillance may need to be further considered in the future.

**THE SURVEILLANCE STRATEGY FOR THE ASIA/PACIFIC REGION IS TO:**

1. Minimize the reliance upon pilot position reporting, particularly voice position reporting, for surveillance of aircraft;
2. Maximize the use of ADS-B on major air routes and in terminal areas, giving consideration to the mandatory carriage of ADS-B Out as specified in *Note 1* and use of ADS-B for ATC separation service;
3. Reduce the dependence on Primary Radar for area surveillance, consider the ongoing need for primary radars in terminal areas with a view to reducing primary surveillance coverage or use of phased array radar or other technologies with coverage focusing on areas of concern, and the potential use of alternate technologies or procedures (e.g. transponder veil regulations);
4. Encourage deployment of Mode S systems instead of Mode A/C only radars when replacement is required;
5. Provide maximum contiguous ATS surveillance coverage of air routes using 1090MHz Extended Squitter (1090ES) ADS-B, Wide Area Multilateration and Mode S SSR to meet operational and safety requirements;
6. Make full use of aircraft Mode S capabilities, where suitable surveillance systems and ATM automation systems are available, to reduce reliance on 4-digit octal codes. Mode S capabilities such as DAPs should also be considered for use to support ATM services where appropriate;
7. Make use of alternative technologies where technical constraint or comparative cost benefit analysis does not support the use of ADS-B, SSR or Multilateration;
8. Make use of Multilateration and/or ADS-B for surface, terminal and area surveillance where appropriate, feasible and cost effective;
9. Monitor ADS-B OUT developments such as Version 3 (DO-260C) MOPS development, and Version 2 (DO260B) equipage in the APAC region. ~~At an appropriate time (circa 2020)~~ APAC States should review progress and consider development of transition plans where cost/benefit studies indicate positive advantages for the region;
10. Monitor ADS-B IN development and cost benefits to ensure that APAC States are able to take advantage of ADS-B IN benefits when appropriate, through procedures, rules and ATC automation capabilities;

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11. To the extent possible, implement ADS-B in the non-radar environment as a priority. In the radar or other surveillance environment, use ADS-B to supplement or replace existing surveillance coverage, subject to local factors and risk assessment;
12. Make use of surveillance capability to support the GADSS as appropriate;
13. Implementation of surveillance capability should also include consideration of contingency surveillance requirements<sup>Note 2</sup> and multilayer surveillance provision should be implemented to enhance the availability of surveillance services;
14. Monitor development of surveillance systems to support integration of UAS including new technology capable to detect non cooperative targets such as UAS.
15. Encourage sharing of surveillance data, utilizing provisions in the Region such as CRV, to improve safety and efficiency in air traffic management with a justifiable cost; and
16. Monitor potential congestion on 1090 MHz by means of routine measurements of channel occupancy, at both terrestrial and airborne levels, and monitor the availability of 24-bit aircraft address

**Note 1:**

- a) *Version 0 ES as specified in Annex 10, Volume IV, Chapter 3, Paragraph 3.1.2.8.6 (up to and including Amendment 82 to Annex 10) and Chapter 2 of Technical Provisions for Mode S Services and Extended Squitter (ICAO Doc 9871) (Equivalent to DO260) to be used till at least 2020.*
- b) *Version 1 ES as specified in Chapter 3 of Technical Provisions for Mode S Services and Extended Squitter (ICAO Doc 9871) (Equivalent to DO260A);*
- c) *Version 2 ES as specified in Chapter 4 of Technical Provisions for Mode S Services and Extended Squitter (ICAO Doc 9871) (Equivalent to DO260B).*
- d) *States/Administrations in APAC region are strongly encouraged to mandate aircraft with a maximum take-off mass exceeding 5 700 kg or having a maximum cruising true airspeed capability greater than 250 knots, to be equipped with ADS-B OUT avionics compliant with Version 2 ES (DO-260B) or later version with date of manufacture on or after 1 January 2020.*

**Note 2:**

*Contingency surveillance requirements are requirements to handle contingency situations in surveillance thus retain capacity to continue providing/using air navigation services. Such situations include but are not limited to the followings:*

- *failure of surveillance system or infrastructure such as ground stations or GNSS failure;*
- *avionics failure or equipped aircraft transmitting bad data in flight with good data integrity indicators.*

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<b>ACTION ITEMS OF CNS SG/26</b>					
Action Item	Subject	Status / Target Date	Action Party	Status	Remarks / follow-up
26-1	Submit a joint CNS-ATM Working Paper to discuss and highlight the issue on alerts of AIDC messaging failure (details in WP/32 Air Traffic Management and Airspace Safety Monitoring Outcomes of CNS SG/26 )	ATMAS TF/4	ICAO Secretariat		
26-2	Provide technical support to Sri Lanka for CRV Implementation	CNS SG/27	Sri Lanka, CRV OG Chairs, PCCWG, ICAO Secretariat		
26-3	Ensure SWIM TF and ACSICG experts are involved in the FF-ICE workshop/webinar/seminar to be held by ATMAS TF.	Next FF-ICE workshop/webinar/seminar	ICAO Secretariat		
26-4	State Letter for encouraging States to coordinate with ICAO APAC Regional Office before assigning frequencies for aeronautical services in frequency bands of 190-526.5 kHz, 108-117.975 MHz, 960 – 1215 MHz and 117.975 to 137 MHz that may affect the use of aeronautical frequencies in other States.	CNS SG/27	ICAO Secretariat		
26-5	Review and propose revise APAC Navigation Strategy, if required.	CNS SG/27	APAC Member States, ICAO Secretariat		
26-6	Organize a webinar/workshop on Inconsistent ICAO Aircraft Address and Target Identification between Surveillance Data and Flight Plan	CNS SG/27	Hong Kong China, IATA, ICAO Secretariat		
26-7	Prepare and share the State Letter to all APAC Member States to provide their comments on proposed ICAO ATSEP human factor guidance material.	CNS SG/27	ICAO Secretariat		
26-8	Share the proposition to identify and incorporate the relevant ASBU modules in Doc 10057 - Manual on Air Traffic Safety Electronics Personnel Competency-based Training and Assessment to the relevant HQ expert group	CNS SG/27	ICAO Secretariat		







<b>ACTION ITEMS OF CNS SG/25</b>					
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	<b>Completed, Proposed to Close</b>
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	<p>The ICAO Secretariat prepared WP/17 <i>Potential Impacts From 5G Implementation on Aircraft Radio Altimeters – Outcomes from CNS SG/25 Meeting</i> to RASG-APAC/11, and two RASG-APAC/11 outcomes were adopted accordingly, namely <b>Conclusion RASG-APAC 11/3</b> and <b>Decision RASG-APAC 11/6</b> on actions for dealing with Potential Interference to Aircraft Radio Altimeter by 5G Telecommunications System from WP/17 and other two WPs in RASG-APAC/11.</p> <p style="text-align: center;"><b>Completed, Proposed to Close</b></p>
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	On-going	<p>The ICAO APAC Regional Office reminds States/Administrations to update relevant e-ANP Volumes and Parts due to update in international aerodromes.</p> <p style="text-align: center;"><b>No updates received from any States.</b></p>
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	SOP for updating e-ANP Volumes has been implemented in ICAO APAC Regional Office
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	The GRAIN working group Proof-of-Concept (PoC) does not have any bearing on the regional network.
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	The GRAIN working group is currently planning for a proof-of-concept (PoC) to prove that IPv6 with certificate authentication and DNS register is able to provide end-to-end secure communications between ground-ground and air-ground applications. We hope the PoC results and report to ANC would then provide guidance on regional network cybersecurity issue.







UPDATES ON ACTION ITEMS FROM CNS SG/24					
Action Item	Subject	Status / Target Date	Action Party	Status	Remarks / follow-up
24-1	To address communications, navigation, and surveillance (CNS) systems resilience and mitigation of harmful interference to global navigation satellite system (GNSS) by making use of the ICAO guidance provided in Doc 9849, <i>Global Navigation Satellite System (GNSS) Manual</i> .	CNS SG25	Member States	On-going	Update the region on DFMC progress through CNS SG/25 IP07.
24-2	The meeting 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.  <b>States/Administrations are encouraged to share their new ideas on this issue in future meetings</b>	CNS SG25	Member States, ICAO Secretariat	On-going	Four ad-hoc expert groups within CRV OG along the lines of Strategy, Design, Transition and Operations are working to improve CRV OM to add Continuous Service Improvement, advancement, documentation and reporting to the Operations Group.  <b>Various WPs/IPs in CRV OG/8:</b> 1. <i>In Case Of CRV Core Network Failure- Japan (IP/05)</i> 2. <i>Revisit the CRV solution for small Pacific Islands and small ANSPs in APAC-Fiji (WP/13) and relevant Draft Conclusion CRV/08/02 - Implementation of CRV for small Pacific Island and small ANSP in the region using CRV Solution, PCCWG SLA Package D</i> 3. <i>Backup B2B Internet Service between FAA and Air services- FAA (IP/14)</i> 4. <i>Distribution of Surveillance Data to PNG via CRV- Aireon LLC and NuiSky Pacific (PNG) (IP/07)</i> 5. <i>CRV Connection to Santiago Chile- New Zealand (IP/10)</i>
24-3	MET SG and CNS SG 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, 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	CNS SG/25	Member States, ICAO Secretariat	On-going	ACSICG8 WP08 - Summary on ICAO Actions to facilitate IWXXM on AMHS in APAC Region, and IP07-Relevant Outcomes of ICAO APAC MET/IE WG/19
24-4	The meeting encouraged SWIM TF to make better benefits from the cross cutting coordination with other contributory bodies of APANPIRG, in particular with CRV and ATFM, to further enhance the connection with infrastructure and the users.	CNS SG/25	SWIM TF, CRV OG, ATFM, ICAO Secretariat	On-going	Ongoing Coordination among CRV OG, SWIM TF, and ACSICG
24-5	Support of the ICAO Position by ITU Member States is required to ensure that the position is supported at the WRC-23 and that aviation requirements are met	WRC 23	Member States, ICAO Secretariat	On-going	Promote ICAO Position at ITU/APT RRS-21 and APG 23-3.
24-6	Through <b>Flimsy/03</b> , Singapore informed the meeting about the proposal on a draft conclusion to encourage States/Administrations in APAC Region to participate in the ICAO DCIWG space-based VHF sub-group to review ICAO Annex 10 SARPs for adoption of space-based VHF operations.  The meeting considered further work needs to be done and agreed to recommend States/Administrations who are interested and capable to join the relevant study, and as present ICAO Position for WRC-23 already included space-based VHF agenda.  The Secretariat was requested to coordinate with SRWG chair and ACSICG chair to clarify how to track and monitor this initiative, and form an ad hoc group, if necessary, to take the concerns from States on a regional level so as to make the study meaningful, and the outcome of this deliberation will be reported back to CNS SG/25 for consideration.	CNS SG/25	ACSICG, SRWG, Member States, ICAO Secretariat	On-going	It has been addressed by Flimsy02 during SRWG/5, and developed SRWG Action Item 5-1.

UPDATES ON ACTION ITEMS FROM CNS SG/24					
Action Item	Subject	Status / Target Date	Action Party	Status	Remarks / follow-up
24-7	ICAO APAC will forward this WP/21 <b>Protection of ILS Critical and Sensitive Areas in Three-Dimensional and ILS Facility Performance Category Requirements</b> and its presentation file to secretary of the ICAO Navigation Systems Panel (NSP) for consideration by Conventional Nav aids and Testing Working Group (CNTWG).	CNS SG/25	ICAO Secretariat	Closed	WP/21 and its presentation file are shared with NSP Secretary
24-8	The Secretariat informed the meeting about the regional established practice on II code coordination through <b>Flimsy/05</b> , as well as the need for IC code inter-regional coordination, and urged States/Administration to provide the required information to ICAO Regional Office for updating the APAC II code list	CNS SG/25	Member States, ICAO Secretariat	On-going	Interregional coordination was made for AFG. DAPS WG/4 proposed new requirements in this regard.
24-9	The meeting recalled the regional efforts on cybersecurity issues in the past years, considering the nature of complexity and the need for inter section coordination within the APAC RO and with HQ and in relation to the Cybersecurity Action Plan and promoting similar drills in future, ICAO APAC is requested to plan a webinar on cybersecurity for the region in 2021	CNS SG/25	Member States, ICAO Secretariat	Closed	ICAO Asia Pacific Regional Cybersecurity Webinar held on <del>04</del> <i>4 June 2021</i>