



ICAO

*International Civil Aviation Organization*

**The Fifth Meeting of System Wide Information Management Task Force (SWIM TF/5)**

Video Tele-conference, 9 – 11 August 2021

**Agenda Item 3:** Outcomes of relevant meetings on SWIM related matters

**REVIEW OF RELEVANT MEETINGS/WEB-CONFERENCES**

(Presented by the Secretariat)

**SUMMARY**

This paper presents the relevant outcomes of the Thirty First Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/31), actions of the Twenty Fourth Meeting of the Communications, Navigation and Surveillance Sub-group (CNS SG/24) of APANPIRG on the works accomplished by Fourth Meeting of the APAC SWIM Task Force (SWIM TF/4) and Fifth Meeting of the Surveillance Implementation Coordination Group (SURICG/5).

**1. INTRODUCTION**

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

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

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

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

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

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

1.4 The Fifth Meeting of the Surveillance Implementation Coordination Group (SURICG/5) of CNS SG was held from *22 September to 24 September 2020* via video teleconference.

**Agenda Item 3**

9 – 11/08/21

The meeting was attended by 120 participants from 20 States/Administrations and 5 International Organizations namely CANSO, EUROCAE, IATA, IFATCA, and ICCAIA, plus one service provider from Industry named PCCW Global. SURICG/5 meeting report, working papers, information papers, and other resources can be accessed by following link:

<https://www.icao.int/APAC/Meetings/Pages/2020-SURICG5-.aspx>

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

1.6 This paper summarized relevant information and updates with the highlight on the reviewed outcomes of SWIM TF/4 by CNS SG/24 and APANPIRG/31.

## 2. DISCUSSION

The actions taken by APANPIRG/31 meeting on related matters are highlighted below:

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

<b>Reference</b>	<b>Subject</b>
<b>Conclusion CNS SG/24/3</b> ( <i>ACSICG/7/2 (ATFM/SG/10-3)</i> )	- Amendment of the AFTN/AMHS-based Interface Control Document (ICD) for ATFM
<b>Conclusion CNS SG/24/4</b>	- Publishing of the CRV Operations Manual
<b>Decision CNS SG/24/5</b>	- CRV Landing Page on the ICAO APAC Website
<b>Decision CNS SG/24/6</b> ( <i>SRWG/4/1</i> )	- Frequency requirements for VHF-COM systems and ILS, VOR, DME and GBAS/VDB facilities
<b>Conclusion CNS SG/24/7</b> ( <i>SRWG/4/2</i> )	- Simulation of VHF COM Frequency requirements for next 10 years
<b>Conclusion CNS SG/24/8</b> ( <i>SRWG/4/3</i> )	- Establishment a list of focal point responsible for the operation of Frequency Finder in States
<b>Decision CNS SG/24/9</b> ( <i>SRWG/4/4</i> )	- Revision of the Term of Reference of the SRWG
<b>Conclusion CNS SG/24/10</b>	- Flight Inspection Guidance Material (FIGM) for APAC Region
<b>Conclusion CNS SG/24/11</b>	- Protection of ILS Critical and Sensitive Areas in Three Dimensional
<b>Decision CNS SG/24/12</b> ( <i>SURICG/5/2</i> )	- Dissolution of SEA/BOB ADS-B WG
<b>Conclusion CNS SG/24/14</b> ( <i>SURICG/5/4(DAPs WG/3/2)</i> )	- Mode S DAPs IGD 2.0
<b>Conclusion CNS SG/24/15</b> ( <i>SURICG/5/6</i> )	- Revised ADS-B Implementation and Operations Guidance Document (AIGD) Edition13

**Decision CNS SG/24/16 (SURICG/5/1)** - Establishment of Study Group under SURICG on Sharing of Surveillance Data in SWIM

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

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

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

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

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

*Election of Co-Chair of the Task Force*

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

*Review SWIM Task Force Programme and outstanding action items*

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

*An Approach for APAC Regional SWIM Implementation*

2.7. Japan presented the research and practical results of previous Task 1.8 and the optional approaches of regional SWIM construction and implementations within transition period. The research work of this Task was carried out in coordination with the tasks of ASEAN SWIM Demonstration and SWIM Service and Application Validation. To overcome the limitations of CRV and avoid the unsupportable point-to-point connections between all stakeholders, the cooperation between CRV and SWIM service providers is required. As result of discussion, the meeting agreed to adopt a *CRV-based interoperable architecture* in which the CRV communication and SWIM communication are divided into different layers to assure the performance of CRV for conventional AFTN/AMHS applications and improve the flexibility required for regional SWIM implementation. It is required SWIM service providers to establish common agreements and creating a collaborative environment at the regional

**Agenda Item 3**

9 – 11/08/21

level to ensure information exchange between different systems. The meeting further discussed the technical capabilities of SWIM TI required to achieve interoperability during the transition period

*SWIM Technical Overview Centered around CRV*

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

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

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

*SWIM Discovery Service (SDS): Introduction*

2.10. USA and ROK introduced the concept of a SWIM Discovery Service (SDS). The ability to search for and locate (discover) services offered by a growing number of independently developed and autonomously managed SWIM domains is highly important and is a precursor for achieving global information exchange. The FAA and Korea Airports Corporation (KAC) are collaborating in an effort to define and test an approach for enabling federated service discovery across geographical and organizational boundaries. The paper described SDS interaction patterns and discussed the contents of the Implementation Specification, including SDS behavior model, information model, resource model, interface requirements, and security requirements. The meeting noted that the SDS approach is consistent with the federated registry architecture adopted at SWIM TF/3, and encouraged participants to collaborate on SDS development.

*Security and Trust in the Context of SWIM Service Discovery*

2.11. USA and ROK provided a discussion of Security and Trust in the Context of SWIM Service Discovery. The joint FAA and KAC effort to establish a SDS development and testing environment has identified the need to address issues of security and trust that might occur when multiple independently operated discovery services exchange information. The paper illustrated some of these issues using an example scenario that requires intercommunication among three different discovery services. It went on to explain that FAA and KAC are investigating using a federated identity management solution approach to secure the communication and showed how this approach could answer questions raised in the scenario. The paper also provided an overview of the latest relevant security technologies, and it discussed the proposed APAC Mutual Trust Infrastructure being developed as part of the Security Management subtask (Task 5) and its relationship to issues of trust between discovery services. The meeting recommended that issues identified in the paper be addressed by the TF Governance task and TF Security Management task, and encouraged participants to collaborate further on this subject.

*SWIM Service Category Taxonomy*

2.12. USA presented a SWIM Service Category Taxonomy designed for the purpose of organizing SWIM services into classes or categories to make the services easier to find or manage. The paper defined taxonomies as hierarchical classification schemes and described this particular scheme

as a 3-level hierarchy with a top level “SWIM Service” classified into two categories, “Information Service” (services that provide information products) and “Core Service” (services that provide support capabilities). Each category has subcategories; e.g., “Weather Service” is a subcategory of Information Service, and “Security Service” is a subcategory of Core Service. The virtue of this taxonomy is that it can be extended horizontally by adding more categories to any level of the hierarchy, or vertically by further dividing a particular category into more specialized subcategories; in this way it is able to meet future business needs. Rendering the taxonomy into machine language (see <https://semantics.aero/service-category>) also allows it to support applications for service discovery or governance processing. The paper concluded by suggesting that the taxonomy be adopted as a standard approach for classifying SWIM services.

#### *Implementation Status of SWIM Discovery Service (SDS)*

2.13. USA and ROK provided information on the Implementation Status of the joint FAA/KAC SDS effort. In October 2019, (FAA) SWIM and KAC began a collaborative effort to establish a virtual environment for conducting transparent and replicable development of discovery services for future deployment by APAC SWIM initiatives. The paper presented a list of FAA/KAC work items together with the current status of each item. Completed items include: a service registry for ROK SWIM, a SDS Specification v.1.0.0 (<https://discovery.swim.aero/sds/1.0.0/>), a Service Description Model for JSON (SDM-J) (<https://discovery.swim.aero/sdm-j/1.0.0/>), and several SDS operations implemented. Remaining items include carrying out bi-directional testing of SDS operations and formally reporting the result of the joint effort to SWIM APAC TF/4.

#### *FF-ICE/R1 Service Validation and Implementation*

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

#### *SWIM in APAC Region: Where are we now and where are we going?*

2.15. Japan recalled the main regional activities since the establishment of SWIM Task Force in 2017. Considering the important role and function of SWIM in Global Air Navigation Plan (Doc 9750) and the Global ATM Operation Concept (GATMOC), as well as the significant impact of COVID-19 on the aviation industry, it is essential to highlight more efficiency and a strengthened and shared strategy for implementing SWIM in the region with stakeholders.

#### *Regional Coordination*

2.16. IATA presented to the meeting about the SWIM related activities (and their interdependencies) in planning or development within other Working Groups (WGs) and Task Forces (TFs) at regional level since SWIM TF/3, for a broader coordination of SWIM activities in APAC (not solely MET) and improved awareness of the work of the SWIM Task Force.

#### *Breakout Session Summaries*

**Agenda Item 3**

9 – 11/08/21

2.17. During the planning period of SWIM TF/4, the chair, Task Leads and secretariat team conducted a number of online discussions, therefore agreed to set up a breakout session for SWIM TF/4 to facilitate the Task Leads and contributors to meet and update their assignment respectively with efficiency and effectiveness. Three online breakout meeting rooms were provided to accommodate tasks' discussion. The outcome of breakout session was reported by to the plenary by various Task Leads.

*Update on APAC SWIM Implementation Materials*

2.18. The outbreak of COVID-19 pandemic projected unprecedented impact on aviation industry and also changed the original plan and available resource of this task. Considering the significant change of task force programme after SWIM TF/3, and the progress of DOC 10039 Vol II, the meeting agreed to suspend ACTION ITEM SWIMTF/3/2 for some time and reactivate it upon further updates during the future Task Lead meetings or SWIM TF/5, and the meeting encouraged the participants and concerned parties to provide and share SWIM related video, training material and other useful information to SWIM TF and secretariat for future compilation.

*Generation and Life Cycle Management of GUFIs and Related Issues*

2.19. China implemented the wide-area surveillance network function verification system which was fed with various data sources including AFS message system, satellite/ground-based ADS-B system, surveillance radar system, ACARS, etc. The system provides multi-category data services for airlines, airports, ATC units, administration, GADSS-related organizations and other data users. GUFIs (Globally Unique Flight Identifier) is used in flight data management in the system. The paper briefed the GUFIs' textual representation, encoding rules, and the accessing of various flight-related data, part of which is generated in real time, while others is generated after the flight. At each flight data access point, a GUFIs management component is set up. Some identified issues to be addressed were also discussed in the paper.

*The Status of SWIM R&D in the Republic of Korea*

2.20. The Republic of Korea has been conducting SWIM R&D following the ICAO Global Air Navigation Plan (GANP) and Korea's National ATM Reformation and Enhancement Plan (NARAE) since 2016. Korea Airports Corporation (KAC) is in charge of SWIM R&D and its purpose is to implement SWIM testbed and lay the foundation for the transition to a SWIM environment.

*Report on SWIM in Australia*

2.21. Australia summarised the activities and plans for the design and implementation of SWIM services in Australia. SWIM architecture and planning activities have been carried out by Airservices Australia (ASA) and the Australian Bureau of the Meteorology (BOM) over the past 18 months. A number of proposals for the APAC SWIM community were formulated.

*New IWXXM design to better support SWIM*

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

*The Status of Shared Information Quality Management in China*

2.23. The paper presented the exploration and practice of Civil Aviation Administration of China (CAAC) for establishing information quality management system based on SWIM concept. As the number of participants and information shared for operation coordination are increasing rapidly, it is necessary to clarify the accountabilities, standardize the procedures and enhance the platform functions for information quality management.

*SWIM in ASEAN Demonstration Report*

2.24. Singapore and Thailand presented the SWIM in ASEAN Demonstration Report. SWIM in ASEAN Demonstration was successfully conducted on the 12 and 15 of November 2019, in Bangkok, Thailand and Singapore, respectively to demonstrate the principles of SWIM, show the potential operational benefits of SWIM and to demonstrate a model of SWIM implementation for ASEAN and Asia/Pacific Region. It got a wide participation of aviation stakeholders including CAAs, ANSPs, airport operators, airlines, and international organizations such as ICAO APAC, and IATA. The Report covered details of the demonstration development, including operational scenario development, SWIM infrastructure, information services, and SWIM-enabled applications design, development, and test, and observations and lessons learnt. It was concluded that the existing standardized information exchange models, namely AIXM, FIXM, and IWXXM could be utilized for the exchange of aeronautical information, flight information, and weather information, respectively. It was found that to address the specific needs, extensions to the core of the existing information exchange models are viable and effective solution. The meeting congratulated Thailand and Singapore in leading this SWIM Demonstration, and highly recognized its contribution to the regional SWIM implementation. The meeting also 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.

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

2.25. SURICG/5 noted that the Proposal for Amendment (PfA) to the Regional Supplementary Procedure (SUPP Doc 7030) from SURICG/2 has been processed in accordance with established procedure and the approved PfAs were circulated to States on 18 June 2020 through a State Letter with reference: T8/11.2 – AP130/20 (CNS), and this change will be incorporated in the new Six Edition of Doc 7030/6 as part of the restructuring process of Doc 7030.

*Collaboration in Sharing of Surveillance Data in SWIM*

2.30 Hong Kong China and Singapore presented some key considerations leading to a proposal of a Commercial-ANSP collaboration scheme in sharing and enriching surveillance coverage. It was suggested to establish a Study Group under SURICG and supported by subject matter experts in SWIM, CRV and ATFM etc. and under the guidance of ICAO APAC to advise CNS SG on the best approach for regional surveillance data sharing. This proposal was also presented to SWIM TF/4 as WP/13 and resulted into an action item 4-4. It was requested to consider the potential developments in surveillance data, particularly ADS-B data as SWIM services carried over CRV and support the establishment of the Study Group to recommend solutions on regional surveillance data sharing to provide surveillance from “departure to destination”.

2.31 An ad hoc group led by Hong Kong China had prepared a draft ToR which was discussed through **Flimsy/06**, and deferred to the Study Group to fine-tune its ToR. It was agreed that SURICG will be held after SWIM TF, so that the progress made by the Study Group would be shared with SWIM TF before reporting to SURICG. The meeting adopted the following Decision:

<b>Decision CNS SG/24/16 (SURICG/5/1) - Establishment of Study Group under SURICG on Sharing of Surveillance Data in SWIM</b>	
What: Noting the operational needs of this region to enhance surveillance data sharing and new technologies available,	Expected impact: <input type="checkbox"/> Political / Global

**Agenda Item 3**

9 – 11/08/21

<p>That, the Study Group under SURICG on Sharing of Surveillance Data in SWIM (SURSG) with ToR provided in <b>Appendix P</b> to the Report, comprising subject matter experts in relevant areas including surveillance and SWIM to be set up to study and recommend solutions on surveillance data sharing to provide surveillance from “departure to destination”, be established.</p>	<input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
<p>Why: To enhance surveillance coverage, enhance surveillance data availability by providing additional layers of surveillance services, and support implementation of advanced Air Traffic Management (ATM) tools such as Air Traffic Flow Management (ATFM).</p>	<p>Follow-up: <input checked="" type="checkbox"/> Required from States</p>
<p>When: 4-Dec-20</p>	<p>Status: Adopted by Sub-group</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: SURICG</p>	

2.32 In response to CNS SG/24/16 decision, a study group was formed. The First meeting of Surveillance Study Group SURSG/1 was held from 20-22 April 2021 via Video Tele-Conferencing. The outcomes of the SURSG/1 is summarised in WP/04 under Agenda Item 4.

**3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) review the outcome of the APANPIRG/31 and take any necessary follow-up actions; and
- b) discuss any matters as appropriate.

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

<b>Conclusion CNS SG/24/3(ACSICG/7-2 (ATFM/SG/10-3)) - Amendment of the AFTN/AMHS-based Interface Control Document (ICD) for ATFM</b>	
<p>What: That, the AFTN/AMHS-based Interface Control Document for ATFM Version 2.0 provided in <b>Appendix E</b> to this Report be adopted and posted on the ICAO Asia/Pacific Regional Office website to supersede the existing version, for use by Asia/Pacific Administrations in implementing cross-border ATFM communications in accordance with the provisions of the Regional Framework for collaborative ATFM.</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 align with message format provisions of Annex 10 Vol II, and to support implementation by States through amendment to specific provisions.</p>	<p>Follow-up: <input checked="" type="checkbox"/> Required from States</p>
<p>When: 4-Dec-20</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: ACSICG/7</p>	

<b>Conclusion CNS SG/24/4 - Publishing of the CRV Operations Manual</b>	
<p>What: That the CRV Operations Manual provided in <b>Appendix F</b> to this Report be adopted as first Edition for publishing and use.</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: Provides the information and directions required for CRV OG performance and CRV operations.</p>	<p>Follow-up: <input checked="" type="checkbox"/> Required from States</p>
<p>When: 4-Dec-20</p>	<p>Status: Adopted by Subgroup</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>Decision CNS SG/24/5 - CRV landing page on the ICAO APAC website</b>	
<p>What: That ICAO APAC Office is requested to create CRV landing page on ICAO APAC web page to providing information on CRV and guidance on how to join, leave or make changes.</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global</p> <p><input checked="" type="checkbox"/> Inter-regional</p> <p><input type="checkbox"/> Economic</p> <p><input type="checkbox"/> Environmental</p> <p><input checked="" type="checkbox"/> Ops/Technical</p>
<p>Why: Provides online access to the information and directions required for the Request Fulfilment Process and procedures to join, leave or make changes the CRV network</p>	<p>Follow-up: <input type="checkbox"/> Required from States</p>

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

When: 4-Dec-20	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:	

<b>Decision CNS SG/24/6(SRWG/4/1) - Frequency requirements for VHF-COM systems and ILS, VOR, DME and GBAS/VDB facilities</b>	
What: That, the SRWG is tasked to develop a rolling frequency assignment plan for VHF-COM and ILS, VOR, DME and GBAS/VDB facilities to meet the operational requirements until [2030], subject to a regular review and updating by the SRWG.	Expected impact: <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 secure adequate spectrum for these facilities for the near future.	Follow-up: <input checked="" type="checkbox"/> Required from States
When: 4-Dec-20	Status: Adopted by Sub-group
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/24/7(SRWG/4/2) – Simulation of VHF COM Frequency requirements for next 10 years</b>	
What: To conduct a new round of simulation for VHF COM frequency assignment based on new operational requirements of States to 2030 as necessary.	Expected impact: <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 regional strategy on the use of 8.33KHz channel spacing.	Follow-up: <input checked="" type="checkbox"/> Required from States
When: 4-Dec-20	Status: Adopted by Sub-group
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/24/8(SRWG/4/3) – Establishment a list of focal point responsible for the operation of Frequency Finder in States</b>	
What: That, States in APAC Region are requested to nominate a focal point responsible for operation of the Frequency Finder and coordination for frequencies assignments with ICAO APAC Regional Office in order to reduce operational error and improve quality management for the coordination process.	Expected impact: <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 reduce operational error in accessing the tool of Frequency Finder and improve the spectrum management quality by enhancing the administrative process.	Follow-up: <input checked="" type="checkbox"/> Required from States

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

When: 4-Dec-20	Status: Adopted by Sub-group
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<b>Decision CNS SG/24/9 (SRWG/4/4) – Revision of the Term of Reference of the SRWG</b>	
What: That, the revised Terms of Reference provided in <b>Appendix J</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: Need to refine the scope of related tasks and include the new members.	Follow-up: <input checked="" type="checkbox"/> Required from States
When: 4-Dec-20	Status: Adopted by Sub-group
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:	

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

<b>Conclusion CNS SG/24/10 – Flight Inspection Guidance Material (FIGM) for APAC Region</b>	
What: That, the first edition of the Flight Inspection Guidance Material (FIGM) provided in <b>Appendix K</b> to this 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 provide additional guidance on planning, execution and delivery of flight inspection for States/Administrations in APAC Region.	Follow-up: <input checked="" type="checkbox"/> Required from States
When: 4-Dec-20	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/24/11- Protection of ILS Critical and Sensitive Areas in Three Dimensional</b>	
What: That, States to: a) take note of the importance in extending protection of ILS Critical and Sensitive Areas (CASA) from two dimensional to three dimensional as stated in ICAO Annex 10 (7th Edition, Amendment 92), Volume I, Attachment C, Paragraph 2.1.9.5; b) be aware that departing aircraft and/or manoeuvring helicopters/aircraft can cause disturbances to ILS signals	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

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

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

<p><b>Decision CNS SG/24/12 (SURICG/5/2) - Dissolution of SEA/BOB ADS-B WG</b></p>	
<p>What: Noting that most of the tasks outlined in the TOR have been achieved and the completion of residual part of action items will be performed by SURICG,</p> <p>That, the SEA/BOB ADS-B WG be dissolved.</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 SEA/BOB ADS-B WG terms of reference have been completed and pending action items will be performed by SURICG.</p>	<p>Follow-up: <input type="checkbox"/> Required from States</p>
<p>When: 4-Dec-20</p>	<p>Status: Adopted by Sub-group</p>
<p>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"/> APANPIRG <input checked="" type="checkbox"/> Other: SURICG</p>	

<p><b>Conclusion CNS SG/24/14 (SURICG/5/4(DAPS WG3/2)) - Mode S DAPs IGD 2.0</b></p>	
<p>What: That, the <i>Mode S DAPs Implementation and Operation Guidance Document</i> Edition 2.0 provided in <b>Appendix N</b> to this 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: Editorial correction and revision to reflect regional updates in implementation.</p>	<p>Follow-up: <input type="checkbox"/> Required from States</p>
<p>When: 4-Dec-20</p>	<p>Status: Adopted by Sub-group</p>

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

Who: Sub groups APAC States ICAO APAC RO ICAO HQ Other:

<b>Conclusion CNS SG/24/15 (SURICG/5/6) - 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 O</b> to this Report, which consolidated all change proposals during SURICG/5, be adopted as Version 13.	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 and editorial correction	Follow-up:	<input type="checkbox"/> Required from States
When:	4 Dec 2020	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		

<b>Decision CNS SG/24/16 (SURICG/5/1) - Establishment of Study Group under SURICG on Sharing of Surveillance Data in SWIM</b>			
What:	Noting the operational needs of this region to enhance surveillance data sharing and new technologies available,  That, the Study Group under SURICG on Sharing of Surveillance Data in SWIM (SurSG) with TOR provided in <b>Appendix P</b> to the Report, comprising subject matter experts in relevant areas including surveillance and SWIM to be set up to study and recommend solutions on surveillance data sharing to provide surveillance from “departure to destination”, be established.	Expected impact:	<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 enhance surveillance coverage, enhance surveillance data availability by providing additional layers of surveillance services, and support implementation of advanced Air Traffic Management (ATM) tools such as Air Traffic Flow Management (ATFM).	Follow-up:	<input checked="" type="checkbox"/> Required from States
When:	4-Dec-20	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		

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

<b>APAPPIRG C 31/12 (Conclusion CNS SG/24/1)- Target Year of CRV Implementation in APAC Region</b>	
What: That, set and monitor 2021 as the target for CRV implementation for all ANSPs.	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: Considering the challenges and difficulties faced by States/Administrations under current pandemic situation and recommended to postpone the target year of regional implementation of CRV from 2020 to end of 2021 and further align with follow up actions on Common Ground/Ground Telecommunication Network stated in the Beijing Declaration.	Follow-up: <input checked="" type="checkbox"/> Required from States
When: 16-Dec-20	Status: To be adopted by PIRG
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 type="checkbox"/> Other:	

<b>APANPIRG C 31/13 (Conclusion CNS SG/24/2(ACSICG/7/1)) - the Revised Regional Strategies on AMS and Datalink</b>	
What: That, the revised Aeronautical Mobile Service (AMS) Strategy for the Asia/Pacific Region provided in <b>Appendix C</b> and the revised Strategy for Implementation of the Air-Ground Data Link in the Asia/Pac Region provided in <b>Appendix D</b> to the Report 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: Need to update the regional strategies on AMS and Datalink based on the latest developments	Follow-up: <input checked="" type="checkbox"/> Required from States
When: 16-Dec-20	Status: To be adopted by PIRG
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 type="checkbox"/> Other:	

<b>APANPIRG C 31/14 (Conclusion CNS SG/24/13 (SURICG/5/3(DAPS WG3/1)) - Mode S Forward Fit Equipage in APAC Region</b>	
What: Regarding fitment of Mode S equipage,  That, States/Administrations in APAC Region be strongly encouraged to mandate that registered aircraft with a maximum certified take-off mass exceeding 5 700 kg or having a maximum cruising true airspeed capability greater than 250 knots, with a date of manufacture on or after 1 January 2022 be equipped with Mode S avionics compliant with Enhanced Surveillance (EHS).	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: Considering that a number of DAPs	Follow-up: <input checked="" type="checkbox"/> Required from States

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

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

**APANPIRG C 31/15 (Conclusion CNS SG/24/17) - Addressing Human Factor Issues of ATSEP**

<p>What: That,</p> <p>a) the States are encouraged to make reference and implement the recommendations made out of the IFATSEA study report <i>Factors adding stress and fatigue to ATSEP</i> provided in <b>Appendix R</b> to the Report for pro-active measures;</p> <p>b) States are also encouraged to join the small working group for finding the left-out gaps and in preparing the regional ATSEP human factor guidance material.</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 continuously improve the human performance management in practice to better support CNS/ATM system operations.</p>	<p>Follow-up: <input checked="" type="checkbox"/>Required from States</p>
When: 16-Dec-20	Status: Draft to be adopted by PIRG
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 type="checkbox"/> Other:	

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