International Civil Aviation Organization

Thirty-Fifth Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/35)

Bangkok, Thailand, 25 to 27 November 2024

Agenda Item 3: **Performance Framework for Regional Air Navigation Planning and Implementation**

3.4 **CNS**

REVIEW OF OUTCOMES OF CNS SG28

(Presented by the Secretariat)

SUMMARY

This paper presents the outcomes of the Twenty-Eighth Meeting of the Communications, Navigation and Surveillance Sub-group (CNS SG/28) of the APAC Air Navigation Planning and Implementation Regional Group (APANPIRG) for APANPIRG/35 review.

1. INTRODUCTION

1.1. The Twenty-Eighth Meeting of the Communications, Navigation and Surveillance Sub-group (CNS SG/28) of APAC Air Navigation Planning and Implementation Regional Group (APANPIRG) was held at the ICAO APAC Regional Office, Bangkok, Thailand, from *1-5 July 2024.*

1.2. The Meeting was joined by **120** participants from **25** States/Administrations, **3** International Organizations and **6** participants from industry partners. Mr Richard Wu, Deputy Director-General of Civil Aviation, Civil Aviation Department, Hong Kong China, chaired the Meeting.

1.3. The Meeting considered **35** Working Papers, **28** Information Papers, and **13** Presentations. This paper provides a summary of key outcomes of the Meeting.

1.4. The Meeting Report, papers and other resources can be accessed at https://www.icao.int/APAC/Meetings/Pages/2024-CNS-SG-28.aspx

2. DISCUSSION

Various Updates from relevant Working Groups other than CNS

2.1 The Meeting noted verbal updates on the progress of the Asia and Pacific (APAC) Air Navigation Service Provider (ANSP) Committee (AAC) after the CNS SG/27 Meeting and key outcomes from the other relevant technical working groups within APANPIRG along with global updates presented by ICAO HQ.

2.2 The Meeting noted the key **Decision ATM/SG/10-3**: *Establish FF-ICE Operational Requirements Small Working Group* to prepare a set of harmonised operational requirements of Flight and Flow Information for a Collaborative Environment (FF-ICE) and recommend an approach to devise an FF-ICE implementation strategy for APAC, aligned with APAC Seamless ANS objectives.

Report of the Eleventh Meeting of the Aeronautical Communication Services Implementation Coordination Group (ACSICG/11)

2.3 The Eleventh Meeting of the Aeronautical Communication Services Implementation Coordination Group (ACSICG/11) was held at the ICAO APAC Regional Office, Bangkok, from *19 to 22 March 2024*.

2.4 The CRV Seminar for the Pacific States was held on 22 *January 2024* and the Twelfth Meeting of the Common aeRonautical Virtual Private Network Operations Group of APANPIRG (CRV OG/12) was held from 23 to 26 January 2024 in Denarau Island, Fiji.

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

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

2.7 The latest updates presented on the planning and implementation status of CRV are as follows:

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

- **Under Provisioning**
  Cambodia, French Polynesia, Macao China, New Caledonia, Myanmar.

- **Hot Prospects in 2024**
  Bangladesh, Brunei, Lao PDR, and Maldives

- **Not joined yet**
  Afghanistan, DPRK, Kiribati, Marshal Islands, Micronesia, Nauru, Palau, Samoa, Solomon Islands, Timor Leste, Tonga, Tuvalu, Vanuatu, Russia, ICAO MID States

2.8 Due to the confidentiality of the CRV contract management process, the report under agenda item 7 was published on the ICAO APAC CRV Secure portal under the CRV group.

2.9 The CRV OG/12 Meeting suggested not using MSA's remaining money for security assessment work. As the security assessment of CRV is essential and crucial for determining the security and trust of the APAC regional network, the CRV OG/12 Meeting agreed to incorporate this task in the new CRV contract management process.

2.10 Considering that as per Amendment 79 to Annex 3 (applicable November 2020), States/ Administrations are required to exchange meteorological information in IWXXM form, the CNS SG/28 adopted the Conclusion:

Conclusion CNS SG/28/01 (ACSICG/11/02) - Review of APAC Region IWXXM Implementation Status/ Readiness

States / Administrations provide ICAO an update on the status and readiness dates for the following:

(a) AMHS with FTBP/IHE and configuration for single body part;

(b) AMHS connection(s) will have sufficient capacity to support IWXXM exchange;

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

Report of SWIM TF/8 and SWIM TF/9

2.12 The CNS SG/28 Meeting reviewed the report of the Eighth Meeting of the System Wide Information Management Task Force (SWIM TF/8) held from **8 to 10 November 2023** and the Ninth Meeting of the System Wide Information Management Task Force (SWIM TF/9) held from **14 to 17 May 2024** in ICAO Asia and Pacific Regional Office, Bangkok.

2.13 Due to the need for global standards on SDS, the following **Draft Decision** was adopted by SWIM TF/8 for CNS SG/28 and APANPIRG/35 consideration, which was endorsed by CNS SG/28 Meeting for APANPIRG/35 adoption:

<table>
<tr><td colspan="3">Draft Decision CNS SG/28/02 (Decision SWIM TF/08/01) Information Management Panel consider the adoption of SWIM Discovery Service as a Global Standard for Globally Interoperable Service Discovery.</td></tr>
<tr><td colspan="2">What: To propose to the Information Management Panel (IMP) to consider adopting the SWIM Discovery Service (SDS) as a global standard for globally interoperable service discovery.</td><td>Expected impact:
☒ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: Considering that APAC regional SWIM will also be part of global SWIM and that SDS was studied and tested by the SWIM TF, the consideration of IMP on the possible adoption of SDS as a global standard is required to ensure cross-regional interoperability of SWIM service discovery,</td><td colspan="2">Follow-up: ☐Required from States</td></tr>
<tr><td>When: 27-Nov-24</td><td colspan="2">Status: Draft to be adopted by PIRG</td></tr>
<tr><td colspan="3">Who: ☒Sub groups ☐APAC States ☒ICAO APAC RO ☒ICAO HQ ☒Other: SWIM TF</td></tr>
</table>

2.14 Besides proposing a draft Decision for APANPIRG's consideration, the Meeting requested the IMP members within Asia/Pacific to consider presenting the SDS to the respective working groups under IMP, i.e., the Governance Working Group and Information/Services Working Group, for further deliberation.

2.15 For the need to have a candidate baseline standard for SDS to support APAC SWIM implementation within the 2024-2030 target implementation timeframe, the CNS SG/28 Meeting adopted the Decision:

> **Decision CNS SG/28/03 (Decision SWIM TF/08/02)** Candidate Baseline SWIM Discovery Service Standard for APAC
>
> *To position the SWIM Discovery Service (SDS) specification as a candidate baseline standard for APAC SWIM implementation*.

2.16 The Meeting was informed that once IMP adopts the SDS as a global standard for globally interoperable service discovery, there will be no requirement to request the FAA to confirm the license agreement of the SDS specification document.

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

2.18 The SWIM TF/9 Meeting requested ATFM SG to formulate the detailed change process to revise a commonly agreed FIXM version for the cross-border ATFM-related information exchange and share it with the SWIM TF/10 Meeting next year for further deliberations.

2.19 The Meeting was informed that ATFM/SG/14 agreed that FIXM v4.3 should be formalised as an agreed-upon version to support information exchange between operational ATFM systems. The draft conclusion ***Draft Conclusion ATFM/SG/14-01 – APAC Regional FIXM 4.3*** was presented to SWIM TF. The SWIM TF/9 Meeting provided support to the draft conclusion for further adoption by ATM SG/12.

2.20 The Meeting agreed that Task 4 leads, along with contributors, will evaluate FIXM v4.3's suitability to support ATFM, A-CDM, and integrated ATFM/A-CDM operations. Based on the outcomes of the analysis, a FIXM v4.3 extension may be proposed for consideration by the next Meetings of ATFM SG and SWIM TF.

2.21 The Meeting discussed the possibility of including the latest applicable versions of AIXM, FIXM, and IWXXM in the common APAC information services list. It was concluded that the appropriate bodies to discuss and agree on this matter are ICAO AAITF, FF-ICE Ad-hoc Group and MET/IE WG. The Meeting requested these contributory bodies to consider making a decision on the applicable version of information exchange models during a review of relevant common APAC SWIM Information Services to be submitted to them by SWIM TF.

2.22 Considering the benefits of making the draft version of APAC SWIM Technical Infrastructure Profiles available for States/Administrations to refer to as guidance to assist in their SWIM development and implementation, the SWIM TF/9 Meeting presented the revised draft of APAC SWIM Technical Infrastructure Profiles through this a draft Decision which was adopted by the CNS SG/28 Meeting:

> **Decision CNS SG/28/04 (Decision SWIM TF/09/01) –** APAC SWIM Technical Infrastructure Profiles v1.0
>
> *The APAC SWIM Technical Infrastructure Profiles v1.0 is adopted as a living document for immediate use by APAC States/Administrations*.

2.23 The SWIM TF/9 Meeting noted the need for a dedicated group to support APAC Member States/Administrations in implementing recommendations being developed by the TFP. SWIM TF/9 requested CNS SG/28 to provide guidance, especially for the group responsible for implementing information security provisions in the APAC Region.

2.24 The CNS SG/28 Meeting deliberated the requirements to establish a dedicated group to support the implementation of the ICAO information security provisions in the APAC region. With the expectation that the *Manual on Information Security* is to be published in the second half of 2024, later than the time of the CNS SG/28, the Meeting discussed that the APAC States/Administration would need adequate time to study and understand the content and recommendations contained in the manual before making a decision on the appropriate way forwards. Therefore, it was advised that the discussion on forming a dedicated group be deferred to the CNS SG/29 Meeting in 2025.

Report of Eighth Meeting of the Spectrum Review Working Group (SRWG/8)

2.25 The Eighth Meeting of the Spectrum Review Working Group (SRWG/8) of APANPIRG was held in the ICAO APAC Regional Office, Bangkok, Thailand, with the hybrid option of video teleconferencing on 5 – 7 March 2024.

2.26 The SRWG/8 Meeting endorsed the following Draft Conclusion to initiate actions for timely and effective preparation for WRC-27 in the APAC region for consideration by CNS SG/28 and APANPIRG/35, which was endorsed by CNS SG/28 for APANPIRG/35 adoption.

<table>
<tr><td colspan="2">Draft Conclusion CNS SG/28/05 (SRWG/8/1) – Preparation for World Radiocommunication Conference - 2027 (WRC-27)</td></tr>
<tr><td>That, States,
a) assign high priority to aeronautical spectrum management;
b) participate in the development of the ICAO Position for WRC-27;
c) participate in the development of States’ positions for WRCs at the national level to ensure support for the ICAO Position;
d) ensure, to the extent possible, that, aviation representatives are included in States delegations to the APAC Telecommunity (APT) Conference Preparatory Group Meetings and at WRCs;
e) to nominate an ICAO designated focal point or contact person for aviation issues related to the WRC-27; and
f) ensure participation of the designated focal point or contact person at the ICAO Regional Preparatory Group Meetings for WRC-27, APT Conference Preparatory Group Meetings for WRC-27, and at WRC-27.</td><td>Expected impact:
☐ Political / Global
☒ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why:
a) implement Assembly Resolution A41-7;
b) support the early development and dissemination of the draft ICAO Position;
c) actively participate in the preparatory work of the ITU and the Meetings of APT to ensure the development of proposals by the regional telecommunication organisations to the conference are in line with the ICAO Position;</td><td>Follow-up: ☐Required from States</td></tr>
<tr><td>When: 27-Nov-24</td><td>Status: Draft to be adopted by PIRG</td></tr>
<tr><td colspan="2">Who: ☒Sub groups ☐APAC States ☐ICAO APAC RO ☐ICAO HQ ☒Other: SRWG</td></tr>
</table>

2.27 The SRWG/8 Meeting agreed that States/Administrations that intend to use or are using VHF frequencies for Satellite-based VHF experimental systems during the time the relevant SARPs and planning criteria are being developed should inform ICAO of their use. Furthermore, ICAO was requested to inform all States in APAC through frequency spectrum Point of Contact (PoC) to ensure that all States are aware of and monitor for any possible interference it may cause to VHF terrestrial systems. States/Administrations should also inform ICAO of any interference from VHF Satellite-based experimental systems. In the event of interference, the correction action should be taken as soon as practicable.

2.28 The SRWG/8 Meeting endorsed the following Draft Conclusion to simplify the VHF COM Frequency Allotment Plan and to clarify the function of these twelve frequencies for ACC service in the APAC Region, which was endorsed by CNS SG/28 for APANPIRG/35 adoption.

<table>
<tr><td colspan="3">Draft Conclusion CNS SG/28/06 (SRWG/8/2) VHF COM Frequency Allotment Plan for APAC Region</td></tr>
<tr><td colspan="2">What: The VHF COM Frequency Allotment Plan for the APAC Region provided in Appendix A be adopted.</td><td>Expected impact:
☒ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: Per discussion from SRWG, the Region should simplify the VHF COM Frequency Allotment Plan and clarify the function of the twelve frequencies for inclusion in the next edition of the Frequency Guidance Material (Management Manual).</td><td colspan="2">Follow-up: ☐Required from States</td></tr>
<tr><td>When: 5-Jul-24</td><td colspan="2">Status: Draft to be adopted by PIRG</td></tr>
<tr><td colspan="3">Who: ☒Sub groups ☐APAC States ☐ICAO APAC RO ☐ICAO HQ ☒Other: SRWG</td></tr>
</table>

2.29 The SRWG/8 Meeting formulated and endorsed the **Decision SRWG/8/3** –*Survey on the Utilisation of HF Spectrum Frequency bands*. Following the adoption of the aforementioned Decision, the Secretariat disseminated the revised Survey through a State Letter.

2.30 The participants of the Workshop agreed that the regular publication of the Frequency List 2, i.e., the list of facilities in the band 108 - 117.975 MHz and 960 - 1215 MHz, will no longer be required as the global database of frequencies included in the FF would provide an up-to-date status of frequencies assigned or used by States/Administrations. However, the access procedure by the designated contact points by States/Administrations to the FF should be provided to States accordingly. With the aforementioned, the CNS SG/28 endorsed the following Draft Conclusion for APANPIRG/35 consideration:

<table>
<tr><td colspan="3">Draft Conclusion CNS SG/28/07 (SRWG/8/4) – Transition from the regular publication of Frequency List 2 to the global database of frequencies included in the Frequency Finder</td></tr>
<tr><td colspan="2">What: Transition from the regular publication of Frequency List 2 to the global database of frequencies included in the FF to be adopted</td><td>Expected impact:
☒ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: The regular publication (currently once a year at the end or beginning of the year) of the Frequency List 2 i.e. List of facilities in the band 108 - 117.975 MHz and 960 - 1215 MHz will no longer be required as the global database of frequencies included in the FF would provide an up-to-date status of frequencies assigned or used by States/Administrations.</td><td colspan="2">Follow-up: ☐Required from States</td></tr>
<tr><td>When: 27-Nov-24</td><td colspan="2">Status:Draft to be adopted by PIRG</td></tr>
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</table>

2.31 The Meeting noted that the SRWG/8 Meeting adopted the example forms for GNSS RFI Reporting to States through the Decision **SRWG/8/5** – *GNSS Interference Reporting Form for APAC* and **Conclusion SRWG/8/6** - *APAC Regional Aeronautical Radio Frequency Management Guidance Material Edition 1.1*.

Guidance Material on the Protection of Radio Altimeter from Potential Harmful Interference from Cellular 5G Communications- Sec (WP/13)

2.32 ICAO Secretariat has been working with FSMP and the ICAO MID Regional Office Radio Altimeter (RADALT) Action Group (AG) to develop and finalise guidance material to protect radio altimeters from potential harmful interference from new cellular broadband technologies such as 5G.

2.33 The **Circular 360** *Guidance on Safeguarding Measures to Protect Radio Altimeters from Potential Harmful Interference* has been published under the authority of the Secretary-General. The official publication is available at the ICAO store in digital or printed format for USD 33.

Communication and Satellite Service Provider Outages and Service Degradations Impacting Air Traffic Operations- USA

2.34 The USA discussed the complexity of the overall data link network and the impacts of outages and degradations on air traffic services. USA informed that the collective network provided by the CSPs and SSPs is the backbone of the Future Air Navigation System (FANS). When any segment of data link services is lost or degraded, not only are the aircraft with the lost capability impacted, but aircraft with full capability may also be impacted by less-than-optimal altitude or route changes to re-establish required separation. USA shared records of degradations or outages impacting data link services for each oceanic FIR.

2.35 The Meeting requested that the ICAO Secretariat coordinate with the FANS Interoperability Team – Asia (FIT- Asia) and RASMAG to share the information presented in the paper along with the proposal to consider the NODAR template and NORIA Handbook to use and implement in the APAC and check the equivalent documents availability for APAC region.

Report of the Eleventh Meeting of Performance Based Navigation Implementation Coordination Group (PBNICG/11)

2.37. The PBNICG/11 Meeting was held in Bangkok from 27-29 March 2024. The Workshop on the oversight of Instrument Flight Procedures (IFPs) was also held in conjunction with PBNICG/11 to strengthen the IFPs oversight function in the APAC States in view of several Significant Safety Concerns(SSCs) raised in the world due to IFPs not Meeting the quality assurance requirements.

2.38. By WP/07 in the PBNICG/11 Meeting, Australia presented an overview of issues encountered when implementing RNP separation standards across FIR boundaries within the framework of APAC plans. The PBNICG/11 Meeting requested CNS SG to share the paper with ATM SG to deliberate on the issues raised in the paper and to provide guidance to review the application of RNP separation within Doc 4444 PANS-ATM to include transition from RNP routes or airspace to other route or airspace to improve the seamless nature of boundaries**.**

2.39. IATA proposed simplifying and standardising authorisations and FPL notations for PBN capabilities and their related interpretations in the PBNICG/11 Meeting. After deliberations, the PBNICG/11 Meeting drafted the Draft Decision PBNICG/11-03: PBN Operational Authorizations/Approvals for CNS SG/28 adoption. The CNS SG/28 Meeting suggested sharing the information and concerns communicated by IATA, supported by PBNICG, with relevant HQ panels for further discussion. Therefore, the CNS SG/28 Meeting agreed not to adopt the proposed draft decision with the consent from IATA**.**

2.40. The Meeting noted that after the completion of the tenure of the PBN officer seconded by India in May 2024, no secondee is supported by APAC States/Administration for the PBN Officer position in ICAO APAC RSO, Beijing, China. Therefore, until the secondment position is filled, the next PBNICG Meeting will not be conducted due to the unavailability of Secretariat support.

Report of the Sixth Meeting of ICAO APAC GBAS/SBAS Implementation Task Force (GBAS/SBAS ITF/6)

2.41. The Sixth Meeting of the ICAO APAC GBAS/SBAS Implementation Task Force (GBAS/SBAS ITF/6) was held in Bangkok on 7-9 May 2024.

2.42. GBAS/SBAS ITF/6 formulated and endorsed this draft conclusion on the guidance document for implementing GBAS in the APAC Region, which was adopted by CNS SG/28.

Conclusion CNS SG/28/08 (GBAS-SBAS ITF 06/01) - Guidance Document for Implementation of GBAS in the APAC Region
The Guidance document for the implementation of GBAS in the APAC Region developed by the APAC GBAS/SBAS ITF is ready.

2.43. As the FIGM is subject to regular review and update in the light of ongoing development of flight inspection standards and recommended practices, the CNS SG/28 Meeting reviewed and adopted FIGM by **Conclusion CNS/SG/28/09 -** *Update of Flight Inspection Guidance Material (FIGM)*

ICAO Recommendations and Guidance on GNSS Vulnerability

2.44. An overview of ICAO's Recommendations and Guidance on Global Navigation Satellite System (GNSS) vulnerability, including the Resolution COM5/5 (WRC-23), ongoing work in NSP and regional efforts in APAC, was presented by ICAO Secretariat.

2.45. ICAO APAC Office State Letter T 8/5.10: AP099/22 (CNS) on 21 July 2022 with the Subject: *Prevention of harmful interference to Radio Navigation Satellite Service Receivers in the 1559 – 1610 MHz frequency band* to circulate the ITU RB Circular Letter CR/488 and the ICAO State Letter Ref.: AN 7/5-20/89. The 41st Assembly adopted the new Appendix C to Assembly Resolution 41-8. The new Appendix effectively constitutes the latest and most authoritative statement of ICAO policy on GNSS (and, more generally, CNS systems) resilience.

2.46. Amendment 93 to Annex 10, Volume I (applicable from 2 November 2023) introduces dual-frequency, multi-constellation (DFMC) GNSS. DFMC GNSS, by introducing additional frequencies of GNSS operation and additional GNSS constellations, enhances resistance to GNSS RFI insofar as interference, both intentional and unintentional, targeting only one GNSS frequency or one constellation, can potentially be mitigated by the use of alternative GNSS frequencies and/or constellation. Avionics standards (MOPS) supporting DFMC GNSS have been published (EUROCAE ED-259A/RTCA DO-401, mentioned in paragraph 2.7 above) or are under development. However, as mentioned in paragraph 2.7 above, the general introduction of compliant equipment is unlikely to take place in the short term.

2.47. The Meeting noted ongoing NSP work related to GNSS RFI mitigation driven mainly by Job cards NSP.003 (GNSS Evolution – SBAS), NSP.006 (GNSS RFI) and NSP.008 (Alternative Position Navigation and Timing (APNT)). The Meeting recalled about APANPIRG Conclusion 8/43 - GNSS Frequency Based Interference (1997), Conclusion 9/32 - GNSS Frequency Protection (1998), Conclusion 22/28 - Protection of aviation utility of GNSS (2011), and Conclusion APANPIRG/27/36: Protection of GNSS signal against jamming (2016). It was added that with reference to the 4th Edition of ICAO Doc 9849 GNSS Manual, the SRWG/8 proposed and adopted the example forms for GNSS Interference Reporting in APAC, which was circulated by State Letter Ref**.:** T 8/5.10 – AP052/24(CNS) on 23 April 2024. Lastly, on 30 April 2024, ICAO Secretary General signed a State Letter Ref.: E 3/5-24/54 Subject: Aviation safety concerns regarding interference to the Global Navigation Satellite

System (GNSS), which circulated the outcome of ICAO EUR/MID Radio Navigation Symposium held from 6 to 8 February 2024 in Antalya, Turkey.

GNSS RFI- IATA

2.48. IATA informed that during the ITU WRC23, the ITU issued a resolution on GNSS RFI. However, that resolution **recognises the right of States, as per the ITU Constitution**, to interfere with the Radio Navigation Satellite Service (RNSS) **for security purposes**. Therefore, globally, non-NOTAM interference with GNSS is unlikely to decrease in the near term due to the number of conflict zones. IATA proposed actions to ensure that deliberate interference with GNSS is reduced to the greatest possible extent.

2.49. Mitigating against GNSS RFI has become a critical risk management activity for airlines with few pragmatic options currently available to guarantee operational integrity, considering increasing levels of deliberate RFI, jamming, and spoofing.

2.50. IATA informed that it invited member airlines to specify GBNA they consider could be decommissioned without significantly impacting flight safety. The related IATA survey is located at IATA MON SURVEY. It was added that airlines have responded by listing GBNA, which they consider can be decommissioned at the end of life (not replaced) without compromising safety, assuming GNSS is unavailable. The IATA survey remains open for additional airline input as the GNSS RFI situation evolves globally.

2.51. It was informed that IATA data shows that when exposed to RFI, airborne GNSS receiver recovery time can, in a significant number of cases, **exceed 30 minutes** with consequent elevation in the risk of operational disruption. Some aircraft/GNSS receiver combinations may need a ground maintenance reset to restore normal GNSS operation.

2.52. IATA concluded that a **significant portion of the current GNSS RFI is military**, and advanced coordination with civil aviation authorities is **not always possible**. Therefore, the safety of flight consideration is driving additional investigation into Alternate Positioning Navigation and Timing (APNT) options. However, pragmatic implementation of globally applicable APNT is not a viable near-term solution to GNSS RFI. Despite ICAO and ITU resolutions, the aviation sector still suffers from GNSS RFI, so additional measures and actions are needed to ensure safety.

2.53. IATA requested the Meeting to ensure that necessary action is taken to reduce to the extent possible interference with essential GNSS-based navigation and timing services in the interests of the safety of civil aviation.

Report of the Ninth Meeting of the Surveillance Implementation Coordination Group (SURICG/9)

2.54. The Meeting reviewed the outcomes of SURICG/8, including the Sixth Meeting of the Mode S Downlinked Aircraft Parameters Working Group (Mode S and DAPs WG/6) and the Third Meeting of the Surveillance Study Group (SURSG/3).

2.55. SURICG Co-chair explained the rationale for amending the General Strategy on Assignment of and Migration to SI Code in the APAC Region. The Meeting adopted the following draft Conclusion for APANPIRG/35 adoption:

<table>
<tr><td colspan="3">Draft Conclusion CNS/SG/28/10 (SURICG/9/1) Update of the General Strategy on Assignment of and Migration to SI Code in the APAC Region</td></tr>
<tr><td colspan="2">That:
1. The ICAO APAC regional office will manage the assignment of II codes 14 and 15 and their matching SI codes like the rest of the II and SI codes.
2. Revised General Strategy on Assignment of and Migration to SI Code provided in Appendix B be adopted.</td><td>Expected impact:
☐ Political / Global
☒ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td colspan="2">Why: Study by SURICG concluded that reservation of II codes 14 and 15 and their matching SI codes for research/test radars and military radars on a region-wide basis is not practicable in APAC.</td><td>Follow-up: ☐Required from States</td></tr>
<tr><td>When: 27-Nov-24</td><td colspan="2">Status: Draft to be adopted by PIRG</td></tr>
<tr><td colspan="3">Who: ☒Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other: XXXX</td></tr>
</table>

2.56. The **Frequency Finder program has been enhanced to address the issue of overlapping coverage of Mode S radars in adjacent ICAO regions**, with a new function to hide radar coordinates and allow the owner (the State) to unhide, modify, or add new coordinates. The modified version of Frequency Finder is expected to be distributed to Regional Offices by the end of the second quarter of 2024.

2.57. The CNS SG/28 adopted a Guideline on addressing inconsistencies of Aircraft Address (AD) and Target Identification (ID) between Surveillance Data and Flight Plan by **Conclusion CNS/SG/28/11 (SURICG/9/2)** - *Guideline on addressing inconsistencies of Aircraft Address (AD) and Target Identification (ID) between Surveillance Data and Flight Plan*. The document can be accessed by this link: APAC guideline on addressing inconsistencies of ICAO Aircraft Address (AD) and Target Identification (ID) between Surveillance Data and Flight Plan

Fourth Meeting of the Surveillance Study Group SURSG/4

2.58. The Fourth Meeting of the Surveillance Study Group (SURSG/4) was held in Hong Kong, China, as an In-Person Meeting *from 30 to 31 May 2024* after the Joint event of SWIM over CRV Demonstrations and Surveillance data sharing over SWIM trial *from 28-29 May 2024* in Hong Kong China. The SURSG/4 Meeting discussed the proposed framework of guidance material. Key aspects that would be considered in the draft of the documents were (1) surveillance information service security, (2) infrastructure and bandwidth consideration, (3) surveillance data performance requirements and (4) data formats – ASTERIX, JSON or new data formats. The SURSG/4 Meeting requested volunteers to lead the work on the draft of guidance material. Hong Kong China and the USA agreed to lead the task.

Seminar on Air Traffic Management Automation System and the Fifth Meeting of the APAC Air Traffic Management Automation System Task Force (ATMAS TF/5)

2.59. The Seminar on Air Traffic Management Automation Systems and the Fifth Meeting of the APAC Air Traffic Management Automation System Task Force (APAC ATMAS TF/5) was held in Chengdu, China, from 4 to 7 June 2024. The ATMAS TF/5 Meeting updated the table of the ATMAS Status in the APAC region and adopted the **Conclusion ATMAS TF/05/01** - *ATMAS IGD Edition 1.4.*

2.60. The ATMAS TF/5 Meeting formed an expert group within ATMAS TF to review the core AIDC messages in the IGD. China, Hong Kong China, Malaysia, Pakistan, Philippines and Singapore joined the group voluntarily, which will work offline and conduct online Meetings when necessary. Singapore will act as the group's rapporteur.

2.61. The number of AIDC implementation issues reported by Member States/ Administration, based on fault categories are as shown in the table below:

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

Complexities in Procuring ATM Automation Systems and Sub-Systems Incorporating Commercial-Off-The-Shelf Components- Nepal

2.62. Nepal presented some complexities arising out of the recent trends in the Commercial-Off-The-Shelf (COTS) industry and its adverse effects in the acquisition and maintenance of modern ATM automation systems and sub-systems by ANSPs like the Civil Aviation Authority of Nepal. Several states, including Lao PDR and India, also echoed similar concerns about the issues mentioned in the paper. The Meeting suggested Nepal refer to the Guidance for Procurement and Certification of CNS/ATM Services and Systems Edition 1.0 September 2019, published on the ICAO APAC e-docs portal, for addressing part of the concerns regarding procurement and certification of ATM systems raised in the paper.

Workshop on Seamless ANS Reporting Tool – Sec (WP/18)

2.63. The ICAO Workshop on APAC Seamless ANS Reporting Tool was held from 17 to 19 April 2024 at the ICAO APAC Regional Office. The Meeting recalled the APANPIRG/34 **Conclusion APANPIRG/34/1 -** *APAC Regional Seamless ANS Reporting Form 3.0 and Cloud-based Seamless ANS Implementation Progress Reporting* and **Conclusion APANPIRG/34/2 -** *ICAO HQ Support for Regional ANS Implementation for the reporting of Seamless ANS implementation progress through the Reporting Portal* by not later than 30 June 2024, and then at least once a year by not later than 28 February each year.

2.64. ICAO Secretariat suggested that all APAC States/Administrations should update the ANS reporting tool and attend webinars, when conducted, to efficiently utilise the functionality of the tool.

2.65. The Meeting noted that the tool is new and under upgradation. It lacks several essential notification features. For instance, after the user submits the status of ANS implementation on the reporting tool, the user does not receive an acknowledgement. In addition, the administrator does not receive notifications if there is a new request to subscribe to the reporting portal. The ICAO Secretariat is working with the ICAO HQ IT team to improve the tool's functionality. It was suggested that when States use the tool, they can share their suggestion for its improvement. Based on users' recommendations and needs, more features can be incorporated into the tool's functionality.

Guidance Document for achieving high resilience in Sustaining operations of Critical Aeronautical Infrastructure – Hong Kong China

2.66. Hong Kong China shared their offer to host the Workshop on *high resilience in Sustaining Operations of Critical Aeronautical Infrastructure* and suggested that a 1-to 2-day workshop may be conducted along with relevant CNS contributory body Meetings to save travel costs by Member States/Administrations.

Review Status of CNS Deficiencies

2.67. The paper presented the Air Navigation Deficiencies in the CNS field, which was reviewed in APANPIRG/34. The Meeting noted that the only outstanding issue was the unreliability of AFS communication between Afghanistan and Pakistan. Pakistan informed that it has joined CRV and is actively coordinating with Afghanistan to restore the communication link between Afghanistan and Pakistan. Pakistan shared the expectation to restore the connection by the end of 2024.

Supervisory and managerial Roles of ATSEP – Proposed- IFATSEA

2.68. IFATSEA presented the human factors issues and their countermeasures regarding ATSEP while playing supervisory and managerial roles. IFATSEA presented an additional chapter and requested CNS SG/28 Meeting approval to add this chapter to the guidance material. The Meeting agreed to add this new draft chapter to the guidance material and requested Member States/Administrations to review the content of the new proposed chapter and provide their comments to the ICAO Secretariat for review and compilation by the Ad-hoc work group. The Ad-hoc group will present a revised chapter consolidating all comments for CNS SG/29 review and adoption.

Update on Trust Framework Activities

2.69. The ICAO HQ team will provide a brief about the Manual on Information Security, Doc 10204, in the Air Navigation Cyber Resilience Workshop and Tabletop Exercise (TTX) to be held in Bangkok, Thailand, from 02 – 04 December 2024. Furthermore, the TFP will plan other activities to support States in understanding and implementing the recommendations defined in Doc 10204.

CNS SG/28 Meeting Action Items

2.70. Twenty (20) action items were identified during the CNS SG/28 Meeting.

CNS Meeting Planning for 2025

2.71. The paper shared the following tentative schedule for the CNS contributory bodies' Meetings to be held in 2025 for Meeting information and action. The ICAO Secretariat will inform Member States about the exact dates, mode and venue of the Meeting while issuing invitation letters at least three months before the event.

Meetings Plan for 2025				
No.	**Name of Meeting**	**Dates (in 2025)**	**Mode of Meeting**	**Location**
1.	First Working Session of System Wide Information Management (SWIM) Implementation Pioneer Group (SIPG)	14-17 January	In-Person	Bangkok
2.	WRC27 Workshop	24-25 February	In-Person	Bangkok

3.	FSMP-WG/20	26 February- 7 March	In-Person	Bangkok
4.	CRV OG/13	03 – 08 March	In-Person	Wellington, New Zealand
5.	SURSG/5	Not in 2025	In-Person	N/A
6.	ACSICG/12	24-28 March	-	Bangkok
7.	PBNICG/12	March	In-Person	Bangkok
8.	GNSS RFI Workshop	April	In-Person	New Delhi, India (Tentative)
9.	SURICG/10	22-25 April	In Person	USA (Tentative)
10.	SRWG/9	7-9 May	In-Person/Hybrid	Bangkok
11.	GBAS/SBAS ITF/7	May	In Person	Bangkok
12.	SWIM TF/10	19-23 May	In-Person	Bangkok
13.	Second Working Session of System Wide Information Management (SWIM) Implementation Pioneer Group (SIPG)	26-30 May	In-Person	Bangkok
14.	ATMAS TF/6	2-5 June	In-Person	Singapore (Tentative)
15.	CNS SG/29	1-5 September	In-Person	Bangkok
16.	CRV OG/14	October	In-Person	Bangkok
17.	SWIM and CRV Joint Meeting to review new CRV RFI responses	November/ December	In-Person	USA (Tentative)

Note of appreciation

2.72. The ICAO Secretariat appreciated Mr. Richard Wu, the Chair of the CNS Sub-group, for operating the CNS SG/28 Meeting promptly and efficiently.

3. ACTION BY THE MEETING

3.1 The Meeting is invited to:

a) note the information contained in this paper;

b) review and adopt the Draft Conclusion/Decision titled:

i. **Draft Decision CNS SG/28/02 (Decision SWIM TF/08/01)** Information Management Panel consider the adoption of SWIM Discovery Service as a Global Standard for Globally Interoperable Service Discovery; (Refer section 2.14)

ii. **Draft Conclusion CNS SG/28/05 (SRWG/8/1)** – Preparation for World Radiocommunication Conference - 2027 (WRC-27); (Refer section 2.27)

iii. **Draft Conclusion CNS SG/28/06 (SRWG/8/2)** VHF COM Frequency Allotment Plan for APAC Region; (Refer section 2.29)

iv. **Draft Conclusion CNS SG/28/07 (SRWG/8/4)** – Transition from the regular publication of Frequency List 2 to the global database of frequencies included in the Frequency Finder; (Refer section 2.31)

v. **Draft Conclusion CNS/SG/28/10 (SURICG/9/1)** Update of the General Strategy on Assignment of and Migration to SI Code in the APAC Region; (Refer section 2.55)

c) note the Conclusion/Decision adopted by CNS SG/28 titled:

i. **Conclusion CNS SG/28/01 (ACSICG/11/02) -** Review of APAC Region IWXXM Implementation Status/ Readiness; (Refer section 2.11)

ii. **Decision CNS SG/28/03** (**Decision SWIM TF/08/02)** Candidate Baseline SWIM Discovery Service Standard for APAC; (Refer section 2.16)

iii. **Decision CNS SG/28/04 (Decision SWIM TF/09/01) –**APAC SWIM Technical Infrastructure Profiles v1.0; (Refer section 2.23)

iv. **Conclusion CNS SG/28/08 (GBAS-SBAS ITF 06/01) -** Guidance Document for Implementation of GBAS in the APAC Region; (Refer section 2.42)

v. **Conclusion CNS/SG/28/09 -** Update of Flight Inspection Guidance Material (FIGM) (Refer section 2.43)

vi. **Conclusion CNS/SG/28/11 (SURICG/9/2) -** Guideline on addressing inconsistencies of Aircraft Address (AD) and Target Identification (ID) between Surveillance Data and Flight Plan. (Refer section 2.57)

d) discuss any relevant matters as appropriate.

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VHF COM Frequency Allotment Plan for APAC Region (March 2024)

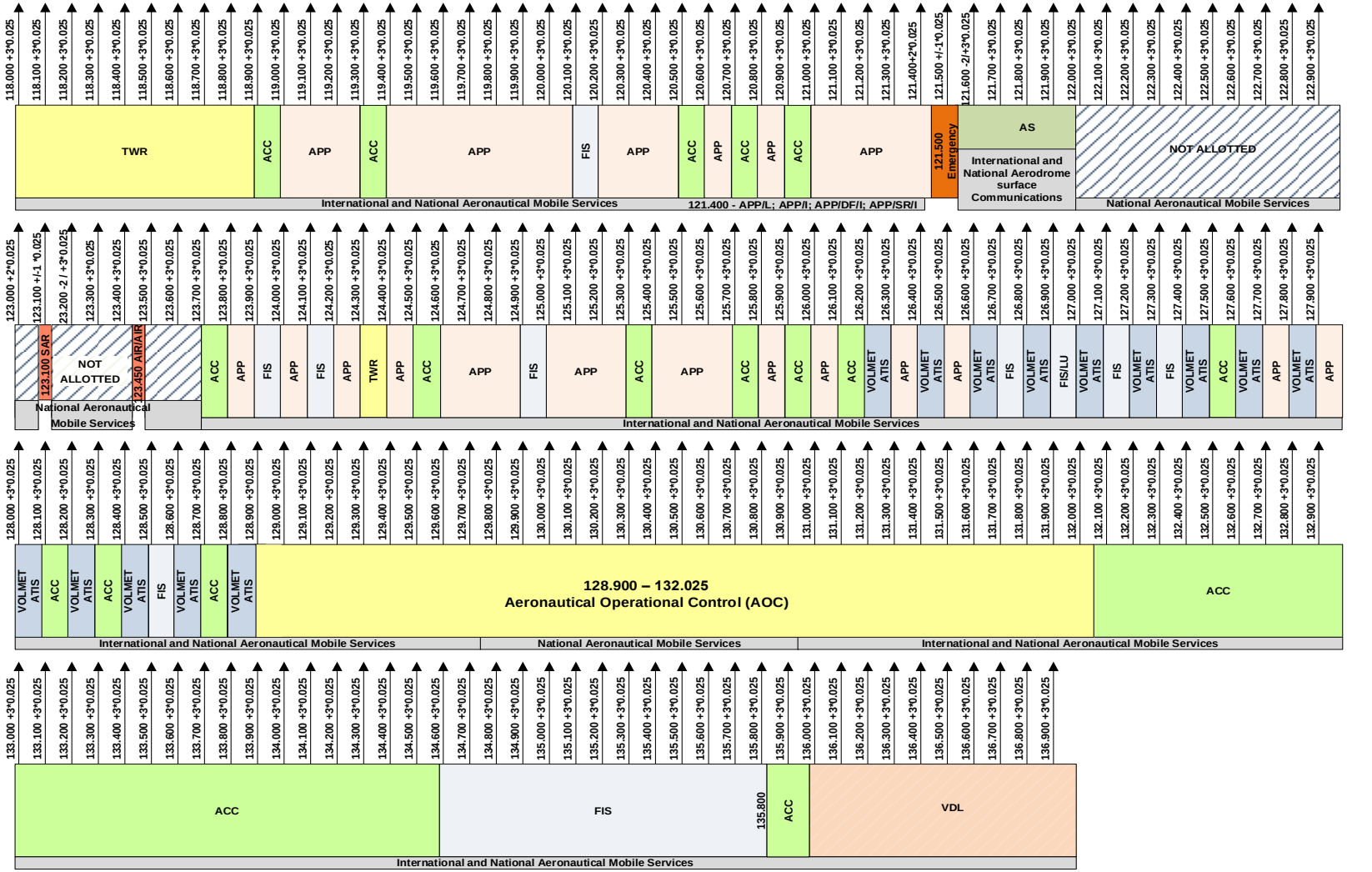
Function (revised)	**Function**	**Frequencies (MHz)**
TWR 118.000-118.875MHz 124.300-124.375MHz	TWR	118.000 118.025 118.050 118.075 118.100 118.125 118.150 118.175 118.200 118.225 118.250 118.275 118.300 118.325 118.350 118.375 118.400 118.425 118.450 118.475 118.500 118.525 118.550 118.575 118.600 118.625 118.650 118.675 118.700 118.725 118.750 118.775 118.800 118.825 118.850 118.875 124.300 124.325 124.350 124.375
AS 121.550-121.975MHz	AS	**121.550 121.575** 121.600 121.625 121.650 121.675 121.700 121.725 121.750 121.775 121.800 121.825 121.850 121.875 121.900 121.925 121.950 121.975
APP 119.000-119.275MHz 119.400-120.075MHz 120.200-120.475MHz	APP	119.500 119.525 119.550 119.575 119.600 119.625 119.650 119.675 119.800 119.825 119.850 119.875 119.900 119.925 119.950 119.975
120.600-120.675MHz 120.800-120.875MHz 121.000-121.450MHz 123.800-123.875MHz 124.000-124.075MHz 124.200-124.275MHz 124.400-124.475MHz 124.600-124.875MHz 125.000-125.275MHz 125.400-125.675MHz 125.800-125.875MHz 126.000-126.075MHz 126.300-126.375MHz 126.500-126.575MHz 127.700-127.775MHz 127.900-127.975MHz	APP-L, APP-I, Also used for APP Direction finding or APP Surveillance radar	119.100 119.125 119.150 119.175 119.200 119.225 119.250 119.275 119.400 119.425 119.450 119.475 119.700 119.725 119.750 119.775 120.000 120.025 120.050 120.075 120.200 120.225 120.250 120.275 120.400 120.425 120.450 120.475 120.600 120.625 120.650 120.675 120.800 120.825 120.850 120.875 121.000 121.025 121.050 121.075 121.100 121.125 121.150 121.175 121.200 121.225 121.250 121.275 121.400 **121.425 121.450** 123.800 123.825 123.850 123.875 124.000 124.025 124.050 124.075 124.700 124.725 124.750 124.775 125.100 125.125 125.150 125.175 125.500 125.525 125.550 125.575 126.500 126.525 126.550 126.575 127.700 127.725 127.750 127.775 127.900 127.925 127.950 127.975
	APP-U	120.300 120.325 120.350 120.375 121.300 121.325 121.350 121.375 124.200 124.225 124.250 124.275 124.400 124.425 124.450 124.475 124.600 124.625 124.650 124.675 124.800 124.825 124.850 124.875 125.000 125.025 125.050 125.075 125.200 125.225 125.250 125.275 125.400 125.425 125.450 125.475 125.600 125.625 125.650 125.675

		125.800 125.825 125.850 125.875 126.000 126.025 126.050 126.075 126.300 126.325 126.350 126.375
ACC 118.900-118.975MHz 119.300-119.375MHz 120.500-120.575MHz	ACC-L Also used for ACC-L Surveillance Radar	126.100 126.125 126.150 126.175 127.500 127.525 127.550 127.575 128.300 128.325 128.350 128.375 128.700 128.725 128.750 128.775
120.700-120.775MHz 120.900-120.975MHz 123.700-123.775MHz 124.500-124.575MHz 125.300-125.375MHz 125.700-125.775MHz 125.900-125.975MHz 126.100-126.175MHz 127.500-127.575MHz 128.100-128.175MHz 128.300-128.375MHz 128.700-128.775MHz 132.050-134.575MHz 135.825-135.975MHz	ACC-U ACC-L	118.900 118.925 118.950 118.975 119.300 119.325 119.350 119.375 120.500 120.525 120.550 120.575 120.700 120.725 120.750 120.775 120.900 120.925 120.950 120.975 123.700 123.725 123.750 123.775 124.500 124.525 124.550 124.575 125.300 125.325 125.350 125.375 125.700 125.725 125.750 125.775 125.900 125.925 125.950 125.975 128.100 128.125 128.150 128.175 132.050 132.075 132.100 132.125 132.150 132.175 132.200 132.225 132.250 132.275 132.300 132.325 132.350 132.375 132.400 132.425 132.450 132.475 132.500 132.525 132.550 132.575 132.600 132.625 132.650 132.675 132.700 132.725 132.750 132.775 132.800 132.825 132.850 132.875 132.900 132.925 132.950 132.975 133.000 133.025 133.050 133.075 133.100 133.125 133.150 133.175 133.200 133.225 133.250 133.275 133.300 133.325 133.350 133.375 133.400 133.425 133.450 133.475 133.500 133.525 133.550 133.575 133.600 133.625 133.650 133.675 133.700 133.725 133.750 133.775 133.800 133.825 133.850 133.875 133.900 133.925 133.950 133.975 134.000 134.025 134.050 134.075 134.100 134.125 134.150 134.175 134.200 134.225 134.250 134.275 134.300 134.325 134.350 134.375 134.400 134.425 134.450 134.475 134.500 134.525 134.550 134.575 135.825 135.850 135.875 135.900 135.925 135.950 135.975
FIS 120.100-120.175MHz 123.900-123.975MHz 124.100-124.175MHz 124.900-124.975MHz 126.700-126.775MHz 126.900-126.975MHz	FIS-L FIS-U	120.100 120.125 120.150 120.175 123.900 123.925 123.950 123.975 124.100 124.125 124.150 124.175 124.900 124.925 124.950 124.975 126.700 126.725 126.750 126.775 126.900 126.925 126.950 126.975 127.100 127.125 127.150 127.175

127.100-127.175MHz 127.300-127.375MHz 128.500-128.575MHz 134.600-135.800MHz		127.300 127.325 127.350 127.375 128.500 128.525 128.550 128.575
	FIS-U Also used for General purpose communications	134.600 134.625 134.650 134.675 134.700 134.725 134.750 134.775 134.800 134.825 134.850 134.875 134.900 134.925 134.950 134.975 135.000 135.025 135.050 135.075 135.100 135.125 135.150 135.175 135.200 135.225 135.250 135.275 135.300 135.325 135.350 135.375 135.400 135.425 135.450 135.475 135.500 135.525 135.550 135.575 135.600 135.625 135.650 135.675 135.700 135.725 135.750 135.775 135.800
VOLMET/ATIS 126.200-126.275MHz 126.400-126.475MHz 126.600-126.675MHz 126.800-126.875MHz 127.000-127.075MHz 127.200-127.275MHz 127.400-127.475MHz 127.600-127.675MHz 127.800-127.875MHz 128.000-128.075MHz 128.200-128.275MHz 128.400-128.475MHz 128.600-128.675MHz 128.800-128.875MHz	VOLMET/ATIS	126.200 126.225 126.250 126.275 126.400 126.425 126.450 126.475 126.600 126.625 126.650 126.675 126.800 126.825 126.850 126.875 127.000 127.025 127.050 127.075 127.200 127.225 127.250 127.275 127.400 127.425 127.450 127.475 127.600 127.625 127.650 127.675 127.800 127.825 127.850 127.875 128.000 128.025 128.050 128.075 128.200 128.225 128.250 128.275 128.400 128.425 128.450 128.475 128.600 128.625 128.650 128.675 128.800 128.825 128.850 128.875
AOC	AOC	128.900-132.025(Except 128.950MHz)
DATA LINK	DATA LINK	136.000-136.975
AIR-TO-AIR	AIR-TO-AIR	123.450 128.950 (TIBA)
NOT ALLOTED	NOT ALLOTED	122.000-123.675(Except 123.100MHz, 123.450MHz)

Note: The allotment of 12 yellow highlighted frequencies for ACC services has not been included in the Asia-Pacific conference outcomes.

VHF COM Frequency Allotment Plan for APAC Region (March 2024)



GENERAL STRATEGY ON ASSIGNMENT OF AND MIGRATION TO SI CODE (revised)

Considering that, when formulating the general strategy:

a) It was previously shared that radars using SI code cannot detect II-only transponders unless a work-around known as the II/SI code operation is used;

b) Even if a radar using SI code supports the II/SI code operation, it will not be able to detect an II-only transponder if that transponder is already locked to a matching II code by a radar using that matching II code. A way to overcome this is for II radars to also use the II/SI code operations whereby it will only lock out SI-capable transponders and not II-only transponders. However, it is difficult to ensure that all radars (including old radars) can support the II/SI code operations in the near future;

c) Transponders that support only II codes are unlikely to disappear totally. Even with strict enforcement by ICAO, there will still be aircraft not subjected to ICAO's provision;

d) While it is possible to configure the lock-out coverage to be smaller than the designated operating coverage, such configuration may not be intuitive and may be subjected to error;

e) The European region is reserving II codes 14 and 15 (and their matching SI codes) for special use (i.e. research/test and military purposes). However, the situation in APAC region is different and do not have the same conditions that allow the reservation of II 14 and 15 (and their matching SI code);

f) The Surveillance Panel is deliberating on a proposal to include a **requirement** for use of II/SI code operations for radars using SI code and a **recommendation** for the use of II/SI code operations for radars using II code; and

g) The strategy is to be kept simple,

The following general strategy has been agreed ~~is thus proposed~~ for the assignment of SI codes:

a) The ICAO APAC regional office will assign SSR Mode S II or Mode S SI codes in accordance with the planning criteria in *Appendix A-1*, at the same time ensuring continued support for Mode S II-only transponders;

b) The ICAO APAC regional office will only assign an SI code if the radar can support II/SI code operations;

c) The ICAO APAC regional office will only assign an SI code to radars having overlapping coverage with another radar using "matching" II code when the radar using "matching" II code can support II/SI code operations;

d) The ICAO APAC Regional Office will assume that the designated operating coverage is the same as the lockout coverage. There will be a 5NM buffer between the coverages of two radars using the same II or SI code. States can, as necessary, select a lockout coverage that is smaller than the Designated Operational Coverage; and

e) ~~The ICAO APAC regional office will generally avoid assigning II 14 and 15 (and their matching SI codes) to new radars.~~ The ICAO APAC regional office will not reserve II codes 14 and 15 (and their matching SI codes) for special use like the case of Europe region. Instead, ICAO APAC regional office will have the full flexibility to assign II 14 and 15 (and their matching SI codes) like the rest of the II and SI codes.

The following general strategy for migration has been agreed ~~is proposed~~:

a) States with Mode S radars that can support II/SI code operation are encouraged to coordinate this functionality with the ICAO APAC regional Office to assign or re-assign SI codes to these radars.

b) The ICAO APAC Regional Office may also approach certain States to start migrating to SI codes.

Appendix A-1

The following planning criteria for assigning SSR Mode S II or SSR Mode S SI codes have been agreed by the Surveillance Panel and will be incorporated in the ICAO Aeronautical Surveillance Manual (DOC 9924)

(Editorial Note: Some of the texts below are edited from the original material in DOC. 9924)

Table 1: Considered interrogator (interrogator for which an Interrogator Code is demanded)
Mode S II-only interrogator
Operating on II code
Can operate with Mode S II-only and Mode S II/SI transponders

Case	Capability of the overlapping interrogator	Operating code	Condition	Transponder Type
A	A Mode S II only	Different II code	Overlap OK	II-only and II/SI
		Same II code	No overlap	
B	Mode S SI operating with II code (1)	Different II code	Overlap OK	II-only and II/SI
		Same II code	No overlap	
C	Mode S SI operating with SI code (1)	Any SI code, including a "matching" SI code	Overlap OK	II/SI
D	Mode S II/SI+ operating with II code (2)	Different II code	Overlap OK	II-only and II/SI
		Same II code	No overlap	
E	Mode S II/SI+ operating with SI code (2)	Non-matching SI code	Overlap OK	II-only and II/SI
		Matching SI code	No overlap	

Note 1: Mode S SI means Mode S II/SI capable interrogator which does not support the II/SI code operation
Note 2: Mode S II/SI+ means Mode S II/SI capable interrogator which does support the II/SI code operation

Table 2: Considered interrogator (interrogator for which an Interrogator Code is demanded)
Mode S II/SI interrogator that does not support the use of II/SI code operation.
Operating on II code
Can operate with Mode S II-only and Mode S II/SI transponders

Case	Capability of the overlapping interrogator	Operating code	Condition	Transponder Type
A	A Mode S II only	Different II code	Overlap OK	II-only and II/SI
		Same II code	No overlap	
B	Mode S SI operating with II code (1)	Different II code	Overlap OK	II-only and II/SI
		Same II code	No overlap	
C	Mode S SI operating with SI code (1)	Any SI code, including a "matching" SI code	Overlap OK	II/SI
D	Mode S II/SI+ operating with II code (2)	Different II code	Overlap OK	II-only and II/SI
		Same II code	No overlap	
E	Mode S II/SI+ operating	Non-matching SI	Overlap OK	II-only and II/SI

	with SI code (2)	code		
		Matching SI code	No overlap	

Note 1: Mode S SI means Mode S II/SI capable interrogator which does not support the II/SI code operation
Note 2: Mode S II/S+I means Mode S II/SI capable interrogator which does support the II/SI code operation

Table 3: Considered interrogator (interrogator for which an Interrogator Code is demanded) Mode S II/SI interrogator that does not support the use of II/SI code operation.
Operating on SI code
Can only operate with Mode S II/SI transponders

Case	Capability of the overlapping interrogator	Operating code	Condition	Transponder Type
A	A Mode S II only	Any II code including the matching II code	Overlap OK	II/SI
B	Mode S SI operating with II code (1)	Any II code including the matching II code	Overlap OK	II/SI
C	Mode S SI operating with SI code (1)	Different SI code	Overlap OK	II/SI
		Same SI code	No overlap	
D	Mode S II/SI+ operating with II code (2)	Any II code including the matching II Code	Overlap OK	II/SI
E	Mode S II/SI+ operating with SI code (2)	Different SI code	Overlap OK	II/SI
		Same SI code	No overlap	

Note 1: Mode S SI means Mode S II/SI capable interrogator which does not support the II/SI code operation
Note 2: Mode S II/SI+ means Mode S II/SI capable interrogator which does support the II/SI code operation

Table 4: Considered interrogator (interrogator for which an Interrogator Code is demanded) Mode S II/SI+ interrogator that supports the use of II/SI code operation.
Operating on II code
Can operate with Mode S II-only and Mode S II/SI transponders

Case	Capability of the overlapping interrogator	Operating code	Condition	Transponder Type
A	A Mode S II only	Different II code	Overlap OK	II-only and II/SI
		Same II code	No overlap	
B	Mode S SI operating with II code (1)	Different II code	Overlap OK	II-only and II/SI
		Same II code	No overlap	
C	Mode S SI operating with SI code (1)	Any SI code including a matching SI code	Overlap OK	II/SI
D	Mode S II/SI+ operating with II code (2)	Different II code	Overlap OK	II-only and II/SI
		Same II code	No overlap	
E	Mode S II/SI+ operating with SI code (2)	Any SI code including a matching SI code	Overlap OK	II-only and II/SI

Note 1: Mode S SI means Mode S II/SI capable interrogator which does not support the II/SI code operation
Note 2: Mode S II/SI+ means Mode S II/SI capable interrogator which does support the II/SI code

operation

Table 5: Considered interrogator (interrogator for which an Interrogator Code is demanded) Mode S II/SI+ interrogator that supports the use of II/SI code operation.
Operating on SI code
Can operate with Mode S II-only and Mode S II/SI transponders

Case	Capability of the overlapping interrogator	Operating code	Condition	Transponder Type
A	A Mode S II only	Non-matching II code	Overlap OK	II-only and II/SI
		Matching II code	No overlap	
B	Mode S SI operating with II code (1)	Non-matching II code	Overlap OK	II-only and II/SI
		Matching II code	No overlap	
C	Mode S SI operating with SI code (1)	Different SI code	Overlap OK	II/SI
		Same SI code	No overlap	
D	Mode S II/SI+ operating with II code (2)	Any II code including a matching II code	Overlap OK	II-only and II/SI
E	Mode S II/SI+ operating with SI code (2)	Different SI code	Overlap OK	II-only and II/SI
		Same SI code	No overlap	

Note 1: Mode S SI means Mode S II/SI capable interrogator which does not support the II/SI code operation
Note 2: Mode S II/SI+ means Mode S II/SI capable interrogator which does support the II/SI code operation