



ICAO

*International Civil Aviation Organization***Seventh Meeting of the Surveillance Implementation Coordination Group (SURICG/7)**

Video Teleconference, 24 – 27 May 2022

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

**REVIEW OF RELEVANT MEETINGS**

(Presented by the Secretariat)

**SUMMARY**

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

**1. INTRODUCTION**

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

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

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

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

1.3 The Sixth Meeting of the Surveillance Implementation Coordination Group (SURICG/6) of CNS SG was held from *24 to 27 August 2021* via video teleconference. The meeting was attended by 116 participants from Nineteen (19) States/Administrations, Four (4) International Organizations, One (1) Aircraft Manufacturer, and One (1) Service Provider from Industry and Three (3) International Organizations. SURICG/6 meeting report, working papers, information papers, and other resources can be accessed by following link:

<https://www.icao.int/APAC/Meetings/Pages/2021-SURICG-6.aspx>.

1.4 The APANPIRG/32 meeting reviewed the outcomes of the CNS SG/25, noted with appreciation the work done and achievements by the SG and the contributory bodies reporting to APANPIRG through the SG, the meeting discussed CNS related matters and took following actions on the report of CNS SG/25 meeting and other papers presented under Agenda Item 3.4.

1.5 This paper summarized relevant information and updates with the highlight on the reviewed outcomes of meetings of SURICG/6, CNS SG/25 and APANPIRG/32.

## 2. DISCUSSION

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

Reference	Subject
<b>Conclusion CNS SG/25/01</b> (ACSICG/08/01(CRV/08/01))	- CRV Implementation Plan amendment ( <i>Version 2.1</i> )
<b>Conclusion CNS SG/25/03</b> (SWIM TF/05/01)	- Asia/Pacific SWIM Implementation Plan and Status Survey
<b>Decision CNS SG/25/04</b> (SWIM TF/05/02)	- Revised SWIM TF Terms of Reference
<b>Conclusion CNS SG/25/05</b>	- The Catalogue of Asia and Pacific Flight Inspection and Flight Validation Service Providers
<b>Conclusion CNS/SG/25/06</b>	- Update of Flight Inspection Guidance Material (FIGM) for APAC Region
<b>Conclusion CNS SG/25/10</b> (SURICG/6/4)	- <b>Mode S DAPs IGD 3.0</b>
<b>Conclusion CNS SG/25/11</b> (SURICG/6/5)	- <b>Revision of the Regional Supplement to ASTERIX Interface Control Document (ICD)</b>
<b>Decision CNS SG/25/12</b> (SURICG/6/6)	- Revised ToR of Surveillance Study Group (SURSG)
<b>Conclusion CNS SG/25/13</b> (SURICG/6/7)	- Integrity of ICAO Aircraft Address and Target Identification in ADS-B / MLAT / Mode S Data and Flight Plan
<b>Decision CNS SG/25/14</b> (SURICG/6/8)	- Revised ToR of Surveillance Implementation Coordination Group (SURICG)
<b>Conclusion CNS SG/25/15</b> (SURICG/6/9)	- Revised ADS-B Implementation and Operations Guidance Document (AIGD)
<b>Decision CNS SG/25/16</b> (ATMAS TF/2/1 (APA TF/7/1))	- Dissolution of APA TF

**Decision CNS SG/25/17 (ATMAS TF/2/2)** - Revised ATMAS TF Terms of Reference

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

2.3 Based on the outcome of discussions on various agenda items, the CNS SG/25 meeting developed 4 Draft Conclusions for consideration by APANPIRG/32 Meeting, which were further adopted by APANPIRG/32. The Conclusions adopted by APANPIRG/32 are as follows with outcomes relevant to surveillance highlighted in blue:

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

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

*Election of chair of the Sub-group*

2.5 Mr. Richard Wu, Deputy Director-General of Civil Aviation Department, Hong Kong China was unanimously elected by CNS SG/25 as the Chair of the CNS Sub-group for the second term.

*Spectrum and Interference*

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

2.7 The meeting agreed that Member States would keep an eye on monitoring the impact of 5G on radio altimeters in their States/Administrations regarding the safety and frequency spectrum issues. In parallel, it was advised that Member States CAA and airworthiness office may collect all relevant information and past issues reported, if any, and inform RASG-APAC in case of any significant concern. The issues related to frequency spectrum may be brought to the attention of the CNS section of the ICAO APAC Regional Office for the coordination with RASG-APAC and ICAO headquarter.

*Flight Inspection Guidance Material*

2.8 Additional guidance in FIGM was provided on the frequency for flight inspections of surveillance radar systems, and other minor amendments including the latest guidelines on Flight Inspection periodicity considerations for radio navigation aids and the glossary of FIGM, were also proposed.

Surveillance (Report of SURICG/6)

2.9 The Sixth Meeting of the Surveillance Implementation Coordination Group (SURICG/6) was held from 24 to 27 August 2021 via VTC, which reviewed the report of the Fourth Meeting of Mode S Downlinked Aircraft Parameters Working Group (DAPs WG/4) held from 29 to 31 March 2021 via VTC, as well as the report of the First Meeting of the Surveillance Study Group (SURSG/1) held from 20 to 22 April 2021 via VTC.

*Interrogator Code (IC) Planning*

2.10 The CNS SG/25 endorsed the proposal from SURICG/6 to amend formerly adopted APANPIRG Conclusions related to II codes and extend the consideration to the use of SI codes. Hence, APANPIRG/32 adopted the following Conclusion:

<b>Conclusion APANPIRG/32/8 (CNS SG/25/07) - Interrogator Code (IC) Planning and Coordination</b>	
<p>What: That,</p> <p>With the need to extend the Use of Surveillance Identifier (SI) in Interrogator Code (IC) on top of Interrogator Identifier (II), the relevant APANPIRG Conclusions were updated as follows:</p> <p><i>Coordination Process for SSR Mode S Interrogator Code (IC) (formerly <b>Conclusion 19/40</b>)</i></p> <p>a) in view of the increasing density of SSR interrogator installations in the region, and that States have varying readiness to extend from Interrogator Identifier (II) to both Interrogator Identifier and Surveillance Identifiers (SI) codes, there will be a period whereby both II and SI will be used.</p> <p>b) while implementing SSR Mode S, States should take into account following issues while assigning IC for these installations:</p> <ul style="list-style-type: none"> <li>• for planning the implementation of SSR Mode S interrogators, administrations should ensure that the interrogators with overlapping coverage are not operating with the same IC.</li> <li>• where, the coverage of the interrogator extends beyond the boundaries of the State, The IC should be worked out in coordination with the ICAO Asia and Pacific Office and the neighbouring States concerned, and</li> <li>• administrations should inform the ICAO Asia and Pacific Office about the assigned IC for these installations.</li> </ul> <p><i>Coordination Requirements for SSR Mode S Interrogator Codes (IC) (formerly <b>Conclusion 20/56</b>)</i></p> <p>States be advised to provide the following information on SSR Mode S</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>

Interrogator Code to the ICAO Asia/Pacific Office for coordination and registration.  a) Name of country/territory and location of facility; b) Antenna Coordinates (Latitude and Longitude); c) Elevation of antenna above the Mean Sea Level (MSL) in meters; d) Maximum Coverage of SSR Mode S Interrogator in nautical mile; e) II Code (1 to 15) or SI Code (1 to 63); and f) Remarks (special configuration such as radar clustering, lockout override, II/SI mode capability)		
<i>Planning Criteria for SSR Mode S Interrogator Code (IC) Assignment (formerly <b>Conclusion 20/57</b>)</i>  The planning criteria for SSR Mode S IC coordination and assignment as provided in Appendix J of Doc 9924 (Third Edition, 2020) be adopted for use in the Asia/Pacific Region.		
Why: Due to higher density of radars, some States are facing a shortage of II codes. It has to be solved by transiting from II to SI code. It is noted that state may use a mixture of II and SI codes before complete migration to SI code.  The assignment of interrogator codes (IC), where necessary in areas of overlapping coverage, across international boundaries of flight information regions, shall be the subject of regional air navigation agreements.  States still have to coordinate with ICAO APAC Regional Office on the allocation of II codes and SI codes.		Follow-up: <input checked="" type="checkbox"/> Required from States
When: 03-Dec-2021	Status: Adopted by PIRG	
Who: <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: SURICG		

*Note: This draft conclusion will supersede **APANPIRG Conclusions 19/40, 20/56 and 20/57** once adopted.*

2.11 In association, the *Table for SSR Mode S Interrogator Code Coordination* was revised.

2.12 The Secretariat provided the latest updates about Mode S II codes coordination in the APAC Region, and the ongoing discussion on allocation of II codes 14 and 15 with matching SI codes was shared. States were encouraged to provide updates and coordination with ICAO APAC Regional Office for updating the SSR II code list through appropriate focal points to eliminate duplicated II code implementation in overlapped coverage at boundary areas.

*Transition to II and SI Mixed Code Operation*

2.13 The SURICG/6 meeting reviewed the strategy of transition from II code to II and SI mixed code, which was then endorsed by the CNS SG/25. With aforementioned, the meeting adopted the following Conclusion:

<b>Conclusion APANPIRG/32/9 (CNS SG/25/08) - Transition from II code to II and SI mixed code</b>	
What: States with Mode S radar capable of performing II/SI mode operations are encouraged to transit from II code to II and SI mixed	Expected impact: <input type="checkbox"/> Political / Global

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

*Roadmap for Mode S Implementation*

2.14 The CNS SG//25 meeting reviewed and endorsed the Regional Roadmap provided in **Appendix D** to the Report on Agenda Item 3.4, which was proposed by SURICG/6 based on the revision of DAPs WG/4. In view of the above, the meeting adopted the following Conclusion:

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

2.15 It was noted that the outcome of the *Survey on Current use and Future planning of Mode S Enhanced Surveillance (EHS) Implementation*, which concluded that most of the twelve States that responded to the survey were not facing any challenges in implementing APANPIRG/31/14 Conclusion. Additionally, the commercial fleet in APAC, North America, and MENA already possessed Mode S ELS and EHS Mode S capability.

2.16 The three APANPIRG/32 Conclusions were conveyed to all APAC States/Administrations through ICAO APAC State Letter Ref.: T 8/5.11-AP200/21 (CNS) on Subject: *Mode S Implementation in APAC Region* provided in **Attachment C** to this paper, which requested States/Administrations to note and take necessary follow-up action on these Conclusions.

*Regional Supplement to ASTERIX Interface Control Document (ICD)*

2.17 EUROCONTROL published the System Area Codes (SAC) for the various regions except for APAC. The DAPs WG/4 meeting proposed the considerations to publish the APAC SAC at the EUROCONTROL website. Additionally, States had their own control over the use of their System

Identification Code (SIC) without the need for ICAO APAC to manage. As such, a Conclusion CNS SG/25/11 (*SURICG/6/5*) (*Draft Conclusion DAPs WG/4/7 and Draft Decision DAPs WG/4/8*) - Revision of the Regional Supplement to ASTERIX Interface Control Document (ICD) was endorsed in SURICG/6 and then was adopted by CNS SG/25. ICAO APAC Regional Office has informed EUROCONTROL to publish the latest SAC allocation within Asia Pacific, and updated information is available in <https://www.eurocontrol.int/asterix/>. In addition, the updated ICD is available at ICAO APAC e-Doc website <https://www.icao.int/apac/pages/edocs.aspx>.

2.18 The ICAO Secretariat presented the recent updates to the Regional Supplement to ASTERIX ICD for APAC Region and introduced the planning criteria and current usage of SAC in the APAC region. SURICG/6 noted that current allotments would be enough to cater for the actual and planned increase of surveillance sensors and automation systems in the APAC Region.

*ToR of Surveillance Study Group and Updates*

2.19 Based on the recommendation of SURICG/6 proposed by SURSG/1, CNS SG/25 reviewed the revised ToR of SURSG and adopted **Decision CNS SG/25/12** (*SURICG/6/6*): *Revised ToR of Surveillance Study Group* (SURSG).

2.20 CNS SG/25 reviewed a proof-of-concept (POC) from SURICG/6 for surveillance data sharing on SWIM to be conducted in Hong Kong China. The POC was explained by a high-level system block diagram in the paper. SURICG/6 expressed support to the POC and on-going work of the SURSG. In addition, CNS SG/25 reviewed the proposed Concept of Operations (CONOPS) from SURICG/6 by Hong Kong China on behalf of SURSG for sharing of surveillance data among multiple parties using a platform such as SWIM along with the objective of the CONOPS, so as to solicit suggestions/concerns from SURICG for consideration by SURSG in formulating the CONOPS.

*ADS-B Implementation*

2.21 CNS SG/25 reviewed the ADS-B Implementation Status in the APAC Region summarised in SURICG/6, as well as other documents through ad-hoc working groups on *ADS-B Data Sharing Implementation Status in the APAC Region* and Reports on the Sub-regional ADS-B Implementation Plan/Projects presented by South East Asia (SEA) and Bay of Bengal (BOB) Ad Hoc Working Groups. The ADS-B Implementation Status in the APAC Region was provided in Appendix E to the APANPIRG/32 Report on Agenda Item 3.4, with a graphical illustration given below in **Figure 1**. During the discussion in Ad Hoc Working Groups, some States had shared to the meeting that with the implementation of space-based ADS-B, the original ground-based ADS-B data sharing project would have to be re-evaluated.

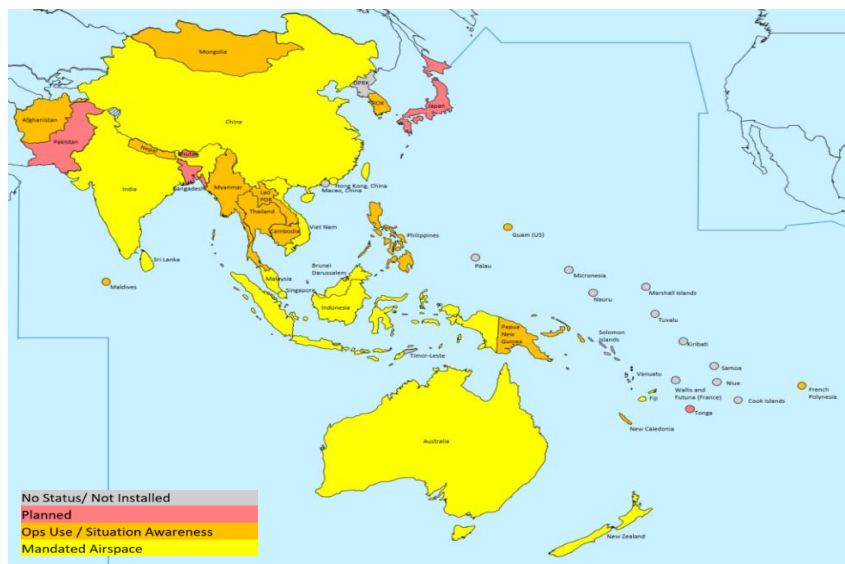


Figure 1 - ADS-B Implementation Status in APAC

*Aircraft Address and Target Identification*

2.22 In CNS SG/25, Hong Kong China presented the observation on recurring inconsistencies of ICAO Aircraft Address and Target Identification between ADS-B / MLAT / Mode S data and flight plan for some aircraft flying within Hong Kong Flight Information Region despite repeated effort had been spent to follow up with concerned airlines. Such issues had caused safety implications to ATC operation and induced additional workload to both ATC and to supporting staff for following up with the concerned airlines. As such, **Conclusion CNS SG/25/13 (SURICG/6/7) - Integrity of ICAO Aircraft Address and Target Identification in ADS-B / MLAT / Mode S Data and Flight Plan** was adopted to urge States/Administrations to proactively follow up with air operators to address such discrepancies.

*ToR and AIGD*

2.23 SURICG ToR was reviewed in SURICG/6 in the view of the integration of SEA/BOB ADS-B WG ToR. The revised SURICG ToR was reviewed and adopted by CNS SG/25 through **Decision CNS SG/25/14 (SURICG/6/8): Revised ToR of Surveillance Implementation Coordination Group (SURICG)**, which was provided in Appendix N to the CNS SG/25 meeting report.

2.24 The revised ADS-B Implementation and Operations Guidance Document (AIGD) was endorsed in CNS SG/25 through **Conclusion CNS SG/25/15 (SURICG/6/9) - Revised ADS-B Implementation and Operations Guidance Document (AIGD)** as version 14.

*ADS-B Webinar*

2.25 The ICAO APAC Webinar on Implementation of ADS-B was successfully conducted on 1 September 2021 via VTC. The objectives of the Webinar were to review concepts, benefits of Automatic Dependent Surveillance – Broadcast (ADS-B), and share implementation experiences that include ADS-B mandate, ADS-B data sharing, implementation issues, and measures to support ADS-B operation. The latest ADS-B technologies including space-based ADS-B were also discussed during the Webinar.

*Automation (Report of ATMAS TF/2)*

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

*Conspicuity Code*

2.27 The ATMAS TF/2 meeting reviewed the report of SURICG/6 and discussed and agreed that the implementation of conspicuity code (Mode A code 1000) in ATM Automation Systems was necessary to support Mode S operations in the Region. It was informed that the ATM Automation System Implementation and Operations Guidance Document (ATMAS IGD) had already provided the recommendation for the ATM Automation Systems on implementation of conspicuity code.

*Repository of the ATM automation systems*

2.28 To follow up ACTION ITEM 1-1 of ATMAS TF/1: *Develop a table to list the current ATMAS status for all states for this task force to establish a repository of the ATM automation systems implemented by States*, Indonesia proposed a draft Table of Current ATMAS Status for all States and invited States/Administrations to review and provide inputs to this regional repository. The ATMAS TF/2 meeting suggested that the table should make reference to the revised version of the ATMAS IGD and agreed to create an ad-hoc group led by Indonesia, including China, Hong Kong China, Republic of Korea, and Singapore with support of the ICAO Secretariat to consider the suggestions provided by the meeting and work out a revised version of the table before conduct a survey.

*Problem Reporting Database*

2.29 Hong Kong China informed ATMAS TF/2 meeting that it had taken up the action item from ATMAS TF/1 on studying the feasibility of expanding the ADS-B Avionics Problem Reporting Database (APRD) to cover the report and sharing of ATMAS-related problems by States/Administrations in APAC region. Hong Kong China provided a detailed proposal to expand the existing APRD, and concluded that it was technically feasible and cost-effective to implement ATMAS PRD by leveraging the framework and hardware resources of APRD with no additional hardware resource requirement. The ATMAS TF/2 meeting agreed that China, Hong Kong China, and Indonesia create an ad-hoc group with the support of the ICAO Secretariat to further progress the development of ATMAS PRD and consider including AIDC implementation issue as well.

*ATM Automation System Implementation and Operations Guidance Document*

2.30 Following the conclusion of ATMAS TF/1, the framework of Recommended Functions and Performances of ATM Automation System (RFAP ATM AS) Edition 0.0, which was led by China, Hong Kong China, and Singapore in preparing, had been adopted. The completed draft guidance document was sent to Member States/Administrations on 6 August 2021 for review, China revised the draft guidance document according to the comments and additional materials received. In order to align with the naming convention of other IGDs for APAC, ATMAS TF/2 adopted "Air Traffic Management Automation System Implementation and Operations Guidance Document (ATMAS IGD)" instead of the original document name Recommended Functions and Performances of ATM Automation System (RFAP ATM AS) as the official name. The ATMAS TF/2 meeting agreed that the advance draft of ATMAS IGD to be taken forward to seek further comments and inputs from States and that the ICAO APAC Regional Office should issue a State Letter to circulate the advance draft of ATMAS IGD to States/Administrations, who should provide feedback within one month after receiving the State Letter.

*Dissolution of APA TF*

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

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

*Regional CNS Requirements*

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

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

Study on Human Factor Issues of ATSEP

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

CNS/ATM systems cybersecurity

*Regional Cybersecurity Webinar*

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

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

*Cybersecurity and Associated Requirements for CRV Operations*

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

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

*Information Security Requirements for Exchange of Information over IP*

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

New technologies.

2.41 In response to APANPIRG's call on enhancing engagement with the industry, CNS SG/25 invited capable member States and various industry partners to share and update the latest progress in relevant areas, which covered UAS-Based PAPI Inspection Technology, Trial Inspection

on CNS Outstations by Drone, Integrated Safeguarding Surface to Uphold Flight Safety While Facilitating Infrastructure/Building Developments by using advanced computer modelling, Standard Making on UAS-based Flight Inspection System and Data Link for UAS-Based Flight Inspection, Implementation of A-SMGCS Level IV Operation, Integration of ATM and UTM, Application of Knowledge Graph in Air Traffic Management.

*CNS Points of Contact*

2.42 The ICAO Secretariat informed the need for points of contact from States/Administrations who would respond in a timely, effective, and efficient manner was important in addressing CNS-related operational deficiencies notified to the Regional Office. Member States/Administrations were invited to review and update their existing nominated CNS Points of Contact to the APAC Regional Office, and each State/Administration was requested to provide points of contact of CNS contingency planning and administrative support for effective and efficient coordination in CNS aspect.

*ADS-B Implementation in Mongolia*

2.43 Mongolia informed the meeting of their plan on Automatic Dependent Surveillance-Broadcast (ADS-B) implementation, including the plan to use ADS-B to provide ATS surveillance separation in the airspace of Mongolia. With the ADS-B covering 95 percent of the whole territory of Mongolia, the use of GNSS in aviation was greater than ever and the reliability of GNSS was utmost important. GNSS outage was reported to be the main concern for their ATS surveillance, which a safety recommendation was issued with safety and risk assessments conducted to address. Despite the mandatory ADS-B flight equipage in the airspace of Mongolia, flexibility was allowed on the equipage to alleviate pressure on airlines due to the pandemic. Furthermore, Civil Aviation Authority of Mongolia provided essential training to develop their staff and personnel and brought forward the needs of innovation in a joint virtual workshop on applications of GNSS co-organized with the UN.

**3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

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

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SURICG/7  
Attachment A to WP/02

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

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

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

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<b>Decision CNS SG/25/04 (SWIMTF/05/02) – Revised SWIM TF Terms of Reference</b>	
What: That, the revised SWIM TF Terms of Reference (ToR) as shown in <b>Appendix F</b> to the report be adopted.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: To align with the progress made since the establishment of SWIM TF, the update of ICAO global and regional air navigation plans, and the revised task groups under SWIM TF adopted at SWIM TF/4.	Follow-up: <input type="checkbox"/> Required from States
When: 22-Oct-21	Status: Adopted by Subgroup
Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: SWIM TF	

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

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<b>Conclusion CNS/SG/25/06 - Update of Flight Inspection Guidance Material (FIGM) for APAC Region</b>	
What: That, the Edition 2.0 of the Flight Inspection Guidance Material (FIGM) provided in <b>Appendix H</b> to the Report be adopted.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: The FIGM is subject to regular review and update, in the light of on-going development of flight inspection standards and recommended practices.	Follow-up: <input type="checkbox"/> Required from States
When: 22-Oct-21	Status: Adopted by Subgroup
Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other:	

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

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

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

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

<b>Decision CNS SG/25/14 (SURICG/6/8): Revised ToR of Surveillance Implementation Coordination Group (SURICG)</b>	
That, the Revised Terms of Reference of the Surveillance Implementation Coordination Group (SURICG) provided in <b>Appendix N</b> to the report be adopted.	Expected impact: <input type="checkbox"/> Political /Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: The ToR from dissolved SEA/BOB ADS-B WG was reviewed and necessary updates were identified.	Follow-up: <input type="checkbox"/> Required from States
When: 22-Oct-2021	Status: Adopted by Sub-Group
Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> APANPIRG <input checked="" type="checkbox"/> Other: SURICG	

<b>Conclusion CNS SG/25/15 (SURICG/6/9) - 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 the report, which consolidated all change proposals during SURICG/6, is adopted as Version 14.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: Updates from SURICG/6	Follow-up: <input type="checkbox"/> Required from States
When: 22-Oct-2021	Status: Adopted by Subgroup

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Who: <input checked="" type="checkbox"/> CNS Sub group <input type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: SURICG
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<b>Decision CNS SG/25/16 (ATMAS TF/2/1 (APA TF/7/1)) - Dissolution of APA TF</b>	
What: Noting that most of the tasks outlined in the ToR have been achieved and the completion of residual part of action items will be undertaken by ATMAS TF.  That, the APA TF be dissolved.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: The APA TF Terms of Reference have been completed and pending action items will be undertaken by ATMAS TF.	Follow-up: <input type="checkbox"/> Required from States
When: 22-Oct-2021	Status: Adopted by Sub-Group
Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: ATMAS TF	

<b>Decision CNS SG/25/17 (ATMAS TF/2/2) – Revised ATMAS TF Terms of Reference</b>	
What: That, the revised ATMAS TF Terms of Reference (ToR) as shown in <b>Appendix P</b> of the Report be adopted.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: After dissolution of the APA TF, the ongoing APAC regional AIDC work will be conducted by ATMAS TF.	Follow-up: <input type="checkbox"/> Required from States
When: 22-Oct-21	Status: Adopted by Sub-Group
Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: ATMAS TF	

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

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

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

*Note: This draft conclusion will supersede **APANPIRG Conclusions 19/40, 20/56 and 20/57** once adopted.*

<b>Conclusion APANPIRG/32/9 (CNS SG/25/08) - Transition from II code to II and SI mixed code</b>	
What: States with Mode S radar capable of performing II/SI mode operations are encouraged to transit from II code to II and SI mixed	Expected impact: <input type="checkbox"/> Political / Global

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

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

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