



ICAO

*International Civil Aviation Organization***Tenth Meeting of the Surveillance Implementation
Coordination Group (SURICG/10)***Bangkok, Thailand, 21 - 23 April 2025*

Agenda Item 3: Review of outcomes of relevant meetings on Surveillance

REVIEW OF RELEVANT MEETINGS

(Presented by the Secretariat)

SUMMARY

The paper presents the relevant outcomes of the meetings held in 2024, including the Thirty-Fifth Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/35), the Twenty-Eighth Meeting of Communication, Navigation, and Surveillance (CNS SG/28), and relevant discussions in other meetings.

1. INTRODUCTION

1.1 The Thirty-Fifth Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/35) was held at the ICAO APAC Regional Office, Bangkok, Thailand, from 25 to 27 November 2024. The Meeting was attended by **163** participants from **24** Member States, **2** Special Administrative Regions of China, and **6** International Organizations. The APANPIRG/35 meeting report, working papers, information papers, and other resources can be accessed by the following link:

<https://www.icao.int/APAC/Meetings/Pages/2024-APANPIRG-35.aspx>

1.2 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 to 5 July 2024. The Meeting was attended by **120** participants from **25** States/Administrations, **3** International Organizations, and **6** participants from industry partners. The Meeting report and other documents of the meeting can be accessed at the ICAO APAC Meeting webpage at:

<https://www.icao.int/APAC/Meetings/Pages/2024-CNS-SG-28.aspx>

1.3 The APANPIRG/35 Meeting reviewed the outcomes of CNS SG/28 and noted with appreciation the following work done and achievements by the CNS SG and the contributory bodies reporting to APANPIRG through the CNS SG. APANPIRG/35 also discussed CNS-related matters and acted on the Report of the CNS SG/28 meeting and other papers presented under Agenda Item 3.4.

1.4 This paper summarized relevant information and updates, highlighting the reviewed outcomes of SURICG/9 and the relevant discussions of other meetings of CNS SG/28 and APANPIRG/35.

2. DISCUSSION

The actions taken by APANPIRG/35 & CNS SG/28 meetings on surveillance-related matters are highlighted below:

2.1 The CNS SG/28 meeting adopted the following 4 Conclusions and 2 Decisions:

Reference	Subject
Conclusion CNS SG/28/01 (ACSICG/11/02)	- Review of APAC Region IWXXM Implementation Status/ Readiness
Decision CNS SG/28/03 (Decision SWIM TF/08/02)	- Candidate Baseline SWIM Discovery Service Standard for APAC
Decision CNS SG/28/04 (Decision SWIM TF/09/01)	- APAC SWIM Technical Infrastructure Profiles v1.0
Conclusion CNS SG/28/08 (GBAS-SBAS ITF 06/01)	- Guidance Document for Implementation of GBAS in the APAC Region
Conclusion CNS SG/28/09	- Update of Flight Inspection Guidance Material (FIGM)
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

2.2 The contents of the above Conclusions/Decisions adopted by the CNS SG/28 are provided in **Attachment A** to this paper.

2.3 Based on the outcome of discussions on various agenda items, the CNS SG/28 meeting developed 4 Draft Conclusions and 1 draft Decision for consideration by APANPIRG/35 Meeting, which were further adopted by APANPIRG/35. The Conclusions/Decisions adopted by APANPIRG/35 are as follows:

Reference	Subject
Decision APANPIRG/35/6 (CNS SG/28/02 (SWIM/TF/08/01))	- Information Management Panel to Consider adoption of SWIM Discovery Service as a Global Standard for Globally Interoperable Service Discovery
Conclusion APANPIRG/35/7 (CNS SG/28/05 (SRWG/8/1))	- Preparation for World Radiocommunication Conference - 2027 (WRC-27)
Conclusion APANPIRG/35/8 (CNS SG/28/06 (SRWG/8/2))	- VHF COM Frequency Allotment Plan for APAC Region

- | | | |
|--|---|--|
| Conclusion APANPIRG/35/9
(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 |
| Conclusion APANPIRG/35/10
(CNS SG/28/10
(SURICG/9/1)) | - | Update of the General Strategy on Assignment of and Migration to SI Code in the APAC Region |

2.4 All APANPIRG/35 Conclusions related to CNS are provided in **Attachment B** to this paper.

2.5 The following captures the highlights of previous discussions in APANPIRG/35 relevant to this Meeting.

Surveillance

Outcomes of the SURICG/9 Meeting

2.6 APANPIRG/35 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). It adopted the **Conclusion APANPIRG/35/10 (CNS/SG/28/10 (SURICG/9/1)) - Update of the General Strategy on Assignment of and Migration to SI Code in the APAC Region** to amend the General Strategy on Assignment of and Migration to SI Code in the APAC Region. The revised General Strategy on Assignment of and Migration to SI Code was published on [ICAO APAC e-docs](#) under CNS.

2.7 APANPIRG/35 noted that the Frequency Finder (FF) program had 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.

2.8 It was also noted that 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**.

2.9 The SURICG/9 Meeting noted 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. The relevant discussions in the 11th Air Navigation Conference (AN Conf/11) in 2003, 12th Air Navigation Conference (AN Conf/12) in 2012, 40th Session of the Assembly / State Letter 2020/89 / ITU Circular Letter 488, and 41st Session of the Assembly were summarized. The meeting also reviewed the Memorandum of Cooperation with the International Telecommunication Union (ITU), Electronic Bulletin 2011/56 on Interference to GNSS Signals, ICAO NSP Liaison Statements to RTCA and EUROCAE on Increased Protection of GNSS Receivers, GNSS Manual (DOC 9849), Amendment 93 to Annex 10, Volume I, and ongoing NSP work.

2.10 By introducing the CNS Challenges in 2024, it was noted the APANPIRG/34 meeting urged States/Administrations and airspace users (through IATA) to report GNSS occurrences to the ICAO APAC Office using the reporting templates which was proposed by SRWG/8 and circulated through State Letter Ref.: T 8/5.10 – AP052/24(CNS) on 23 April 2024. The meeting reiterated the

importance of surveillance (independent of GNSS source) and air-ground communication for operations in case of GNSS outage.

2.11 The SURICG/9 Meeting discussed new improvements in ADS-B avionics, which will transmit the GNSS interference status to the ground station; the Aireon space-based ADS-B payload is able to mitigate the situation through a satellite-based MLAT solution. The meeting also emphasized the importance of the education of operational staff, such as ATCOs and pilots. The meeting was shared with the FAA Safety Alert for Operations (SAFO) 24002, which was posted on the meeting page. Recognizing the issue was ongoing, the meeting agreed to continue monitoring the GNSS vulnerability issue and consider revising the regional surveillance strategy when necessary. **ACTION ITEM 9-1**

2.12 The SURICG/9 Meeting reviewed the reports on the **Sub-regional ADS-B implementation plan/projects presented by BOB and SEA Ad Hoc working groups**, which were led by **Indonesia** and **Singapore**, respectively. The reports updated by BOB and SEA Ad Hoc groups are provided in **Appendix A** and **B** to this Report, which could serve as a basis for further development of the sub-regional implementation plans and follow-up actions for coordination by States/Administrations.

2.13 The SURICG/9 Meeting noted the work that was being undertaken by the Surveillance Panel to manage the 1030/1090 MHz utilization and highlighted the importance of States/Administrations adhering to guidance and SARPs to maintain healthy frequency utilization. It identified issues related to 1030/1090 MHz spectrum load and possible mitigations, with information on the affected ICAO documents and specific aspects such as relevant regulations and standards already available.

2.14 USA summarized the observed NIC/NACp performance computed by its ADS-B Performance Monitor (APM) for air carrier aircraft compared to the requirement of the US ADS-B mandate and provided ADS-B equipage trends in US tracked by APM for each unique ICAO aircraft address.

2.15 New Zealand presented technical issues behind the non-compliant ADS-B data and methods to resolve the issues after coordinating with the regulator and the OEM. Two complex issues related to 2 different ADS-B transponder types were shared with corresponding resolutions.

2.16 Japan provided an overview of the initial findings regarding statistical values associated with the installation values and the characteristics of ADS-B performance on the surface of the airport, where more positional data with lower NIC values were observed compared to the airborne positional data. Japan shared that a monitoring system for ADS-B performance is under development for further investigation into the decrease in performance.

2.17 China presented the trial of the remote tower optical system conducted jointly by a regional air traffic control unit and a local airport. Contents such as system structure, system main functions, performance parameters and test scenario establishment were shared. The future application of the remote tower mode and the prospect of one center for multiple airport modes were also discussed.

2.18 Japan shared the deployment of II-SI code operation with its difficulty in assigning II codes to all SSRs in Japan. Japan shared its plan to manufacture new SSR for II-SI code starting in 2024. Japan was reminded to coordinate with the ICAO APAC Regional Office on assigning II / SI codes.

2.19 Japan shared the multi-sensor system consisting of several surveillance sensors such as SSR, WAM and ADS-B, and Hybrid Air-Route surveillance sensor Processing equipment (HARP),

which provides a higher update rate and higher position accuracy to cope with the increase in traffic. The development and implementation of the system had been completed, and the ATC display in operation already showed multi-sensor target data from SSR/WAM. Integration of ADS-B data is now being planned.

2.20 USA provided a progress update on the ADS-B In Retrofit Spacing (AIRS) evaluation project, which was a large-scale operational evaluation of ADS-B In applications previously discussed in SURICG/6-IP/08. The project involved a collaborative effort between the Federal Aviation Administration (FAA), ACSS and American Airlines (AAL) in a public-private partnership to equip 288 AAL A321 aircraft with an ADS-B In retrofit solution that supports Cockpit Display of Traffic Information (CDTI)-Assisted Visual Separation (CAVS), CDTI Assisted Separation (CAS), and Interval Management (IM) capabilities. The meeting was informed that FAA is continuing to evaluate the data from the trials to determine the gained efficiency and additional benefits for the airspace. The information will serve as an input to assist in determining the appropriate next steps for potential utilization of ADS-B In applications across U.S. airspace.

2.21 Hong Kong China highlighted the latest technology adopted by the Hong Kong International Airport (HKIA) for the implementation of Advanced Surface Movement Guidance and Control System (A-SMGCS), Digital Apron and Tower Management System (DATMS) and Automatic Foreign Object Debris Detection System (AFODDS), providing safe and reliable services from aerodrome control towers and apron control centers in the HKIA, as well as coping with the air traffic growth and operational needs. The meeting is invited to consider the implementation of relevant technologies, based on the ICAO GANP/ASBU framework, if deemed necessary and operationally justified, to enhance surveillance provisions for safe and reliable services for aerodrome control towers and apron control centers for busy airports.

2.22 Singapore provided a summary of surveillance activities in Singapore, including radars, A-SMGCS, ADS-B, ADS-C/CPDLC and DAPS. This paper also shared equipage requirements for ADS-B out exclusive airspace and airport surface, and ADS-B equipage which was monitored over the past few years. The meeting appreciated Singapore's sharing, in particular on the statistics of ADS-B equipage of aircraft, which revealed the difference between States/Administrations as well as the trend of changes. The meeting invited States/Administrations to incorporate individual statistics and trend analysis on equipage similar to IP/20 of SURICG/9 for future meetings to see any need for another initiative on new equipage mandate in the future. **ACTION ITEM 9-3**

2.23 China and Singapore introduced the revised draft of the Mode S DAPs Implementation and Operations Guidance Document. The main amendments to this draft were the addition of some achievements from Mode S and DAPs WG/6, such as the general strategy on the assignment of and migration to SI code and some information about the management of the 1030/1090 MHz utilization. The Edition 6.0 (Draft) consisted of 9 Sections and 6 appendixes, addressing topics such as implementation principles, system integrity, regulations and procedures, training needs, and specific examples of Mode S DAPs application. It provided detailed descriptions of Mode S DAPs data, including the Mode S downlink format, exchange protocol between surveillance and ATM Automation system, and guidance on the progress of implementing DAPs in the ICAO APAC region. The SURICG/9 Meeting noted that the newly added material on the management of the 1030/1090 MHz utilization has been updated by SP, and the general strategy on the assignment of and migration to SI code is being updated by this meeting upon further approval by CNS SG/28. The meeting requested **China and Singapore to update the concerned sections along with the discussion of the meeting and postpone the adoption of Edition 6.0 to SURICG/10 in 2025.**

Automation

Outcome of ATMAS TF/5 Meeting and ATM Automation System-related Issues

2.24 APANPIRG/35 noted 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) held in Chengdu, China. ATMAS TF/5 updated the table of the ATMAS Status in the APAC region, adopted the Conclusion ATMAS TF/05/01 - ATMAS IGD Edition 1.4 and formed an expert group within ATMAS TF to review the core AIDC messages in the IGD.

Regional implementation review and updates

Workshop on Seamless ANS Reporting Tool

2.25 APANPIRG/35 noted the outcomes of the ICAO Workshop on APAC Seamless ANS Reporting Tool held from 17 to 19 April 2024. The Meeting noted that the tool was new and under upgradation. It lacked several essential notification features. The corresponding team in the ICAO APAC Regional Office was working with the ICAO HQ IT team to improve the tool's functionality. States/Administrations were encouraged to provide suggestions for improvement.

Guidance Document for achieving high resilience in Sustaining operations of Critical Aeronautical Infrastructure

2.26 APANPIRG/35 noted that Hong Kong China shared their offer to host the Workshop on High Resilience in Sustaining Operations of Critical Aeronautical Infrastructure.

Cybersecurity of CNS/ATM systems

2.27 APANPIRG/35 noted that the ICAO HQ team would 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 would plan other activities to support States in understanding and implementing the recommendations defined in Doc 10204.

CNS Works and Other Business

CNS Points of Contact

2.28 CNS SG/28 reviewed the CNS Points of Contact of Member States and requested States/Administrations to update points of contact of CNS contingency planning and administrative support for effective and efficient coordination in the CNS aspect.

Additional CNS events in 2024

2.29 APANPIRG/35 noted information about four additional events organized by the ICAO APAC Office besides regular CNS meetings in 2024. APANPIRG/35 noted key outcomes and significance of the ICAO APAC Flight Inspection and Procedure Validation (FIPV) Seminar held from 30 July to 1 August 2024, the ADS-B Implementation Workshop held from 14 to 16 August 2024, the Seminar on Frequency Use from 16 to 18 September 2024 and System-Wide Information Management (SWIM) Working Session from 6 to 8 November 2024 in Jakarta, Indonesia. It was noted that Cybersecurity TTX would be organized from 2 to 4 December 2024 at ICAO APAC Office, Bangkok, Thailand.

Feasibility Study and Trial of Using Drone to Enhance Efficiency in Flight Inspections at the Hong Kong International Airport (WP/21)

2.30 Hong Kong China shared information about their initiative supported by the Flight Inspection Center of Civil Aviation Administration of China (CAAC FIC) in exploring use of drone technology to carry out part of flight inspections at the Hong Kong International Airport (HKIA). Hong Kong China informed about two trials conducted at the HKIA in August 2023 and May 2024 with support of CAAC FIC. It was added that the trials showcased the utilisation of drones for part of flight inspection on navigational aids be more efficient in deployment with increased flexibility in flight maneuvers, and reduced carbon emissions. In addition, during unpredictable weather conditions, drones demonstrated their versatility by quickly adapting to the limited time window and effectively executing the mission.

2.31 Hong Kong China informed that based on the successful experience of the two trials, HKCAD would continue to collaborate with the CAAC FIC and relevant stakeholders to conduct further studies on drone utilisation to carry out part of the flight inspection, complying with the relevant standards and requirements. HKCAD would also closely monitor the development of relevant ICAO standards and guidelines to leverage the benefits of drones in conducting flight inspections with greater efficiency and flexibility.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the outcome of the APANPIRG/35, CNS SG/28, and its contributory bodies, and take any necessary follow-up actions; and
- a) discuss any relevant matter as appropriate

SURICG/10
Attachment A to WP/02

List of Conclusions/Decisions adopted by CNS SG/28 on behalf of APANPIRG on Technical Matters

Conclusion CNS SG/28/01 (ACSICG/11/02) - Review of APAC Region IWXXM Implementation Status/ Readiness	
What: 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;	Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
Why: As per Amendment 79 to Annex 3 (applicable November 2020), States/ Administrations are required to exchange meteorological information in IWXXM form.	Follow-up: ☒ Required from States
When: 05-Jul-2024	Status: Adopted by Subgroup.
Who: ☒ Sub groups ☒ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☐ Other: XX	

Decision CNS SG/28/03 (Decision SWIM TF/08/02) Candidate Baseline SWIM Discovery Service Standard for APAC	
What: To position the SWIM Discovery Service (SDS) specification as a candidate baseline standard for APAC SWIM implementation.	Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
Why: A candidate baseline standard for SDS is needed to support APAC SWIM implementation within the regionally-agreed target implementation timeframe of 2024-2030.	Follow-up: ☐ Required from States
When: 5-Jul-24	Status: Adopted by Subgroup
Who: ☒ Sub groups ☐ APAC States ☐ ICAO APAC RO ☐ ICAO HQ ☐ Other: SWIM TF	

Decision CNS SG/28/04 (Decision SWIM TF/09/01) –APAC SWIM Technical Infrastructure Profiles v1.0	
What: The APAC SWIM Technical Infrastructure Profiles v1.0 is adopted as a living document for immediate use by APAC States/Administrations.	Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
Why: To assist APAC States/Administrations in their SWIM development and implementation,	Follow-up: ☐ Required from States

SURICG/10
Attachment A to WP/02

List of Conclusions/Decisions adopted by CNS SG/28 on behalf of APANPIRG on Technical Matters

guidance specific to the operational environment within APAC is required. The draft APAC SWIM Technical Infrastructure Profiles v1.0 is matured enough to be immediately used by APAC States/Administration.	
When: 5-Jul-24	Status: Adopted by Subgroup
Who: ☒ Sub groups ☐ APAC States ☐ ICAO APAC RO ☐ ICAO HQ ☒ Other: SWIM TF	

Conclusion CNS SG/28/08 (GBAS-SBAS ITF 06/01) - Guidance Document for Implementation of GBAS in the APAC Region	
What: The Guidance document for the implementation of GBAS in the APAC Region developed by the APAC GBAS/SBAS ITF is adopted.	Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
Why: To provide guidance to States for the implementation of GBAS	Follow-up: ☐ Required from States
When: 5 Jul 2024	Status: Adopted by CNS SG
Who: ☒ CNS Sub group ☐ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☐ Other:	

Conclusion CNS/SG/28/09 - Update of Flight Inspection Guidance Material (FIGM)	
What: That, the Edition 4.0 of the Flight Inspection Guidance Material (FIGM) is adopted.	Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ 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: ☒ Required from States
When: 5-Jul-24	Status: Adopted by Subgroup
Who: ☒ Sub groups ☒ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☐ Other:	

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

SURICG/10
Attachment A to WP/02

List of Conclusions/Decisions adopted by CNS SG/28 on behalf of APANPIRG on Technical Matters

What: APAC guideline on addressing inconsistencies of ICAO Aircraft Address (AD) and Target Identification (ID) between Surveillance Data and Flight Plan is adopted.		Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
Why: The guideline consolidated the outcomes of the Workshop on ICAO Aircraft Address and Target Identification between Surveillance Data and Flight Plan held in June 2023.	Follow-up: ☐ Required from States	
When: 05-July-24	Status: Adopted by Subgroup	
Who: ☒ Sub groups ☐ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☐ Other: XXXX		

SURICG/10
Attachment B to WP/02

A List of Conclusions adopted by APANPIRG/35 Meeting related to CNS

Decision APANPIRG/35/6 (<i>Decision CNS SG/28/02 (Decision SWIM TF/08/01)</i>) - The Information Management Panel considers the adoption of SWIM Discovery Service as a Global Standard for Globally Interoperable Service Discovery.		
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.	Expected impact: ☒ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical	
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,	Follow-up: ☐ Required from States	
When: 27-Nov-24	Status: Adopted by PIRG	
Who: ☒ Sub groups ☐ APAC States ☒ ICAO APAC RO ☒ ICAO HQ ☒ Other: SWIM TF		

Conclusion APANPIRG/35/7 (<i>Conclusion CNS SG/28/05 (SRWG/8/1)</i>) - Preparation for World Radiocommunication Conference - 2027 (WRC-27)		
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.	Expected impact: ☐ Political / Global ☒ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical	
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 organizations to the conference are in line with the ICAO Position;	Follow-up:	☐ Required from States

SURICG/10
Attachment B to WP/02

A List of Conclusions adopted by APANPIRG/35 Meeting related to CNS

When: 27-Nov-24	Status: Adopted by PIRG
Who: ☒ Sub groups ☐ APAC States ☐ ICAO APAC RO ☐ ICAO HQ ☒ Other: SRWG	

Conclusion APANPIRG/35/8 (Conclusion CNS SG/28/06 (SRWG/8/2)) - VHF COM Frequency Allotment Plan for APAC Region

What: The VHF COM Frequency Allotment Plan for the APAC Region is adopted.	Expected impact: ☒ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
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).	Follow-up: ☐ Required from States
When: 27-Nov- 24	Status: Adopted by PIRG
Who: ☒ Sub groups ☐ APAC States ☐ ICAO APAC RO ☐ ICAO HQ ☒ Other: SRWG	

Conclusion APANPIRG/35/9 (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

What: Transition from the regular publication of Frequency List 2 to the global database of frequencies included in the FF is adopted	Expected impact: ☒ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
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.	Follow-up: ☐ Required from States
When: 27-Nov-24	Status: Adopted by PIRG
Who: ☒ Sub groups ☐ APAC States ☐ ICAO APAC RO ☐ ICAO HQ ☒ Other: SRWG	

SURICG/10
Attachment B to WP/02

A List of Conclusions adopted by APANPIRG/35 Meeting related to CNS

Conclusion APANPIRG/35/10 (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		
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 is adopted.		Expected impact: ☐ Political / Global ☒ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
Why: A 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.	Follow-up: ☐ Required from States	
When: 27-Nov-24	Status: Adopted by PIRG	
Who: ☒ Sub groups ☒ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☐ Other: XXX		

REPORT FROM BAY OF BENGAL AD HOC WORKING GROUP

~~6–9 June 2023~~ 7 – 10 May 2024

States Presented:

China
Indonesia
Malaysia
Thailand
India
Maldives
Nepal
Sri Lanka

Observer:

IATA
Japan

The participants met to update the status of implementation of ADS-B and possible Data sharing between the neighbouring States.

Implementation Updates

1. Bangladesh (no update provided in 2024)

Not Present

We are trying to modernize our systems through the implementation of ATM project. At first it was in PPP & now it is on G2G with France. This was under the process of government approval. Government approval is granted, and 5 ADS-B receivers will have been installed at detailed below,

Cox's Bazar, Barisal, Saidpur, Dhaka and Sylhet, there is another one for Extended Economic Zone at new area in the Bay of Bengal which is 200NM at south of the country.

2. Bhutan (no update provided in 2024)

Not Present

Bhutan cannot join previous SEA/BOB ADS-B meeting as we do have plan to implement ADS-B, but now we are targeting to complete ADS-B feasibility study by mid of 2019 and now it is extended up to mid of 2020. We found out that feasibility study (Coverage and ground station location) is necessary as Bhutan is surrounded by mountain terrain.

As per the result of feasibility study we are going to implement installation of ground station.

Bhutan do not have any national policy or regulation about data sharing, so we will be sharing data with any neighbouring countries/states as per the regional norms and conditions.

3. China

China has been continuously promoting to push forward the application of ADS-B technology. China provided update on the installation and related activities regarding ADS-B surveillance system as follows:

- 5 UAT ADS-B stations are used for flight training of CAFUC. The upgrade to 1090ES ADS-B stations project has already started in 2017, and the project is finished by 2022;

- 4 ADS-B station in operational in Sanya FIR since 2008;
- Chengdu - Lhasa route with 7 ADS-B stations;
- 9 ADS-B stations deployed on the routes H15 and Z1 by the end of 2015;
- 19 ADS-B station at the small airport; and
- 308 ADS-B stations nationwide have already finished in operation ~~stallation and SAT by~~ at the end of 2018. And there are 2 level-1 data processing centres working in main-standby mode for redundancy, 8 level-2 data processing centres to concentrate data from data stations within its area of responsibility, as well as 36 data stations to collect received data from GSs. All the installation and SAT of GSs, level-2 data processing centres and level-1 data processing centres have already complete. The trial operation has started from October 10, 2019 and the ADS-B mandate had also been published on October 1, 2019, which is effective from October 10, 2019.

4. Indonesia

Indonesia earlier informed that ADS-B ground station at Aceh is already operational and updated to comply with DO-260B (ver 2) and expressed willingness to share data with India (It was earlier decided to have Port Blair-Aceh data sharing, but for better coverage and usability it was suggested in the meeting to have data sharing of upcoming Campbell Bay ADS-B - Aceh when India is ready).

Indonesia now will share the data with Campbell Bay ADS-B – Aceh only.
Campbell Bay ADS-B is installed.

Letter of Agreement between Indonesia and India regarding ADS-B data sharing is on progress
Letter of agreement is agreed by Indonesia and India, yet to be signed.

5. Malaysia

Malaysia has completed the installation of the two new ADS-B ground station in Langkawi and Genting and were now fully integrated into the new ATM system. Both stations are compliant with DO-260B with output data handling function as plot and tracks (ASTERIX CAT21 ver. 0.23, ver. 0.26 and ver. 2.1.)

Malaysia is venturing to share ADS-B data with Indonesia, India and Thailand. Data sharing from India (Port Blair or Campbell Bay ADS-B GS), or from Indonesia (Aceh ADS-B GS) or from Thailand will close the surveillance gap within the KL FIR.

The ADS-B data (from Genting and Langkawi) processed through ADS-B central processing system is now integrated into new ATC Systems and is now ready for data sharing. Malaysia is reviewing the sample agreement proposed by India and Indonesia and will revert as soon as possible.

~~At present, ADS-B Data Sharing with Indonesia is currently on hold due to decision by Indonesia in BOBTFRG/3 meeting to refrain conducting surveillance data sharing in Bay of Bengal due to certain reasons until further notice.~~

6. Maldives

Maldives started using ADS-B to enhance ATS surveillance capability in Male FIR on 7th February 2016.

With 4 ground stations (2 autonomous stations at Male; 2 unduplicated ground stations: 1 at an island in the North and the other in the South), the ADS-B provides coverage up to 90% of Male FIR above FL290.

ADS-B serves as the backup for Male radar and is in use for vectoring and 5NM separation commensurate with Radars

As part of the effort towards full implementation of ADS-B, from March 2017 aircraft imported for commercial air transport in the Maldives are required to be equipped with ADS-B Out, as published in AIP ENR 1.6-3.

The full implementation, which ~~would~~ require carriage of ADS-B Out, ~~is~~ was ~~targeted~~ implemented for the year ~~2020~~-2021

Maldives is making efforts to complete the airworthiness approval for all locally registered aircraft, already equipped with ADS-B.

~~Out of the 73 aircraft registered for commercial air transport in the Maldives, 62 aircraft have given approval for ADS-B by Maldives Civil Aviation Authority (MCAA).~~

~~This include 55 seaplanes (Twin Otter aircraft with floats) conducting commercial air transport between Velana International and resort islands. These aircraft, although operate on VFR, are fitted with ADS-B out functionality combined with GPS to give highly accurate positional information.~~

Maldives is in the process of installing ~~two~~ five additional ADS-B Ground Station in ~~2023~~ 2024, to improve the coverage at low flight levels.

7. Myanmar (no update provided in 2024)

Not Present

The 5 ADS-B ground stations have been installed in Myanmar. Among them, Sittwe and Co Co Island ground stations are installed in 2014 and they are DO260 compliant, and Yangon, Mandalay and Myeik airports ground stations are DO260B compliant and installation was finished in 2016.

All ADS-B data are fused with MSSR data target in the Top Sky ATC Automation system (Thales) in 2016, and using as MSSR backup and surveillance monitoring in Yangon ACC.

In addition, Myanmar have planned to install new ADS-B Station in the First quarter of 2020 at Lashio Airport located in north-eastern part of Myanmar closed to the China-Myanmar border near the LINSO transfer point on A599 ATS route. After the installation finished, the ADS-B data sharing process can be proceeded between Myanmar and China *after March, 2020*.

For the communication links between Yangon and Beijing, it can use the existing 2M E1 IPLC link which is now using for AFTN messaging and (AIDC Testing) Voice, and also can be used the existing Yangon-Beijing VSAT link as backup.

Myanmar also willing to participate the special coordination meetings to promote relevant works in terms of the surveillance data sharing among the countries to enhance the safety and surveillance capability in the sub-region.

Lashio installation will be completed by First quarter of 2020.

Redundant Communication link via Land line / CRV / V-SAT is proposed under discussion.

8. Thailand

Thailand provided update on the installation and related activities regarding ADS-B and other related surveillance system as follows:

ADS-B Ground Infrastructure and ATC System Readiness or Implementation Plan

- ~~MLAT has been in operation at Suvarnabhumi Airport (VTBS) since 2006. Another MLAT installation was carried out at Don Mueang Airport (VTBD) in 2017 and operational since mid 2019 at the same time when the new ATM automation system, which is the system that receives and processes data, was implemented.~~
- 4 ADS-B ground stations (DO260B and lower compliant) have been installed at Doi Inthanon (Chiangmai), Hatyai Airport (VTSS), Samui Airport (VTSM) and Ubon Ratchathani Airport (VTUU). Moreover, 3 SSRs at Surat Thani Airport (VTSB), Ubon Ratchatani Airport (VTUU), and Phuket Airport (VTSP) have been upgraded with ADS-B capability. In total, 7 ADS-B stations are under approval process and is expected for air traffic services by the end of 2024.

Data sharing

- ATS surveillance data sharing with adjacent FIRs was approved in principle in October 2018.
- User requirements, particularly ATS routes to be served, and communication link test plan are discussed in 2018.

9. India (no update provided in 2024)

ADS-B Usage and Mandate in India:

India has installed 36 ADS-B ground receivers to enhance redundancy in existing Radar airspace and also to extend Surveillance coverage in low density airports and in certain oceanic airspace. It will also facilitate extension of Surveillance coverage for low altitude (below existing Radar coverage) leading to more efficient use of airspace. ADS-B data is being used for Terminal as well as Enroute Surveillance operations.

Out of 36 ADS-B ground receivers presently 30 receivers have already been operationalized and efforts are on to operationalize remaining 6 ADS-B ground receivers soon. Further, India has entered into a contract with M/s Aireon in July 2019 to receive ADS-B data for Oceanic regions of Indian FIR to ensure seamless Surveillance coverage across its oceanic airspace, Space Base ADS-B system has been successfully integrated with Data fusion systems of Mumbai, Chennai and Kolkata in January 2021 and presently being used for situational awareness only.

In order to promote ADS-B usage in India, the Director General of Civil Aviation (DGCA) India has issued ADS-B avionics mandate w.e.f. 01st January 2020, all aircrafts flying over Indian continental airspace at or above FL290, are to be equipped with on-board ADS-B equipment.

10. Sri Lanka

Sri Lanka has installed 5, ADS-B stations and data received by the stations have been integrated and available for sharing. The ADS-B coverage is approximately 350NM from Piduruthalagala, the highest mountain situated in central Sri Lanka. Sri Lanka is willing to share this data with India and Maldives. India is requested to provide a soft copy of draft agreement for sharing of ADS-B data with Sri Lanka so as to enable Sri Lanka to look into the terms and conditions of draft agreement.

11. Nepal

Nepal has also completed installation of 4 ADS-B GS at Mt. Phulchowki (Kathmandu), Nepalgunj, Bhairahawa and Dhangadhi Airports and have been integrated with MSDPS.

~~Efforts are on to operationalize soon~~ They are in test operation.

ADS-B Data Sharing

Project 1 - ADS-B Data Sharing between China, Laos and Myanmar

Phase 1 *China and Laos sharing ADS-B data from following:*

Kunming ADS-B data processing Centre (china), which can customize the output of ADS-B data in version, specific area and height range depend on Laos's requirement.

Route to be affected B465.

China and Myanmar sharing ADS-B data from the following sites:

Lashio (Myanmar) Not yet installed – Target to be installed by March 2020. Route to be affected A599

China and Myanmar sharing ADS-B data from the following:

Kunming ADS-B Data Processing Centre (China), which can customize the output of ADS-B data in version, specific area and height range depend on Myanmar's requirement.

Operational Status

N/A

Expected benefits

- Enhanced air navigation safety at FIRs boundary.
- Promoting air traffic control work efficiency.

Project 2 - ADS-B Data Sharing between India and Indonesia

Phase 1

Aceh – Indonesia

Camp Bell Bay – India

Route to be affected B466, P574 and N563

Operational Status

ADS-B data from Campbell Bay (India) is proposed to be integrated with Jakarta (Indonesia) ATC centre. Similarly, data from Banda-Aceh (Indonesia) ADS-B is proposed to be integrated with Chennai (India) ATC centre. Draft Letter of Agreement (LOA) has been shared with Indonesia and necessary Government approval is awaited for implementation of data sharing.

Benefits

Enhanced safety by reduction in occurrences of LHDs and LLDs in BOB region.

Project 3 - ADS-B Data Sharing between India and Malaysia

Phase 1

Port Blair/Campbell Bay - Langkawi (2023)

Route to be affected N571, P628, L510, P627, L645 and P574

Operational Status

ADS-B data from Campbell Bay (India) is proposed to be integrated with Kuala Lumpur (Malaysia) ATC centre. Similarly, data from Langkawi (Malaysia) ADS-B is proposed to be integrated with Chennai (India) ATC centre. Draft Letter of Agreement (LOA) has been shared with Malaysia and necessary Government approval is awaited for implementation of data sharing. India and Malaysia are exchanging comments on the Draft LOA.

Expected benefits

Enhanced safety by reduction in occurrences of LHDs and LLDs in BOB region.

Project 4 - ADS-B Data Sharing between India and Myanmar (no update provided in 2022)

Phase 1

The ADS-B data sharing between Kolkata and Yangon FIR was an initiative taken by India and Myanmar to enhance safety and reduce LHDs along Kolkata-Yangon FIR boundary.

In 6 May 2015, Myanmar and India have signed the MOU agreement for ADS-B data sharing between the two countries.

As per the data sharing agreement, ADS-B data sharing test between Agartala(India) and Sittwe (Myanmar) and Port Blair(India) and Coco Island(Myanmar) has been accomplished between technical teams since June 2018. Kolkata has integrated the ADS-B feed from Sittwe and Co Co Island in its Automation system. Presently the data is given in the back up automation system at Kolkata for test purpose and ADS B equipped aircrafts are tracked from as far as 250 nm west of Bangkok.

But for Myanmar side, India's data is just received to Yangon ACC technical management room and need to discuss with ATM Manufacturer (Thales) of Surveillance Display System to integrate India's ADS-B data to existing Surveillance Display System for operational use in Yangon ACC. Because the multicast address and port from India's ADS-B data are different with existing setup.

The communication link used for ADSB data transfer between Yangon and Kolkata is the existing E1 IPLC link which is used for DSC phone between the two ATS units.

Route to be affected A201, A599, B465, G463, L507, P646, P762, G472, L524, M770 and L759

Operational Status

Operationalized for situational awareness. India-Myanmar data sharing has been completed successfully through under sea cable between Mumbai (India) and Yangon (Myanmar). Data from Sittwe (Myanmar) and Coco Island (Myanmar) has been successfully integrated with Kolkata Automation system, and there were no reported instability issue. Similarly, data from Agartala (India) and Port Blair (India) has been provided to Yangon ATC centre.

Expected benefits

Enhanced safety by reduction in occurrences of LHDs and LLDs in BOB region.

Project 5 - ADS-B Data Sharing between Indonesia and Malaysia

Phase 1

Langkawi - Aceh (TBD)

Route to be affected B466, N571, P628, L510, P627, L645 and P574

ADS-B data from Aceh (Indonesia) is proposed to be integrated with Kuala Lumpur (Malaysia) ATC centre. Similarly, data from Langkawi (Malaysia) ADS-B is proposed to be integrated with Jakarta (Indonesia) ATC centre. Draft Letter of Agreement (LOA) has been shared with Indonesia and Malaysia and necessary Government approval is awaited for implementation of data sharing.

Malaysia and Indonesia is planning to use CRV for the data sharing link.

ASTERIX CAT21 Ver 0.26 format to be used for data sharing.

~~*Surveillance data sharing between Malaysia and Indonesia in Bay of Bengal is currently on hold until further notice.~~

Operational Status

New ATM Automation system Kuala Lumpur is now complete and ready for data sharing.

Expected benefits

Enhanced safety at FIR boundary

Project 6 - ADS-B Data Sharing between Malaysia and Thailand

Phase 1

Langkawi - Phuket

General discussion about possibility to share ADS-B data for route N571, P628, L510, P627, L645 and P574. Malaysia and Thailand to continue discussion to exchange views of the possible ADS-B data sharing.

Operational Status

N/A Currently on hold until further discussion

Expected benefits

- Enhanced visibility of surveillance targets in Bay of Bengal.
- Enhanced situational awareness at FIR boundary.

Project 7 - ADS-B Data Sharing between India and Sri Lanka (no update provided in 2018 - 2022)

Phase 1

In view of integration of Space Based ADS-B data, India's requirement of ADS-B data from Sri Lanka is supplemented, by the data from Aireon. Hence there is no further follow up from India on the data sharing. However, in case Sri Lanka desires to have ADS-B data from India, project may be approached, afresh by Sri Lanka.

Operational Status

N/A

Expected benefits

Enhanced safety at FIR boundary

General remark for all the above projects: As agreed at previous ADS-B Task Force, WG and SURICG meetings, sharing of ADS-B data should include sharing of VHF radio facilities/services, where possible

REPORT FROM SOUTHEAST ASIA SUB GROUP

Bangkok, Thailand, 7 to 10 May 2024

States Present

Australia
Cambodia
China
Hong Kong, China
Indonesia
Malaysia
The Philippines
Singapore
Thailand
Viet Nam

Observer

Fiji
Japan
Macao, China

Previously Identified Projects

The South East Asia Group provide an update on the near term implementation of the following projects that were identified in previous meetings.

Project 1 – ADS-B Data Sharing Between Australia and Indonesia

Phase 1a

Indonesia and Australia sharing ADS-B data from the following sites:

- Saumlaki (Indonesia) (Installed)
- Merauke (Indonesia) (Installed)
- Waingapu (Indonesia) (Installed)
- Kintamani - Bali (Indonesia) (Installed)
- Thursday Island (Australia) (Installed)
- Gove (Australia) (Installed)
- Broome (Australia) (Installed)
- Doongan (Australia) (Installed)

Data Sharing Agreement signed in Nov 2010;

Communications links between Australia and Indonesia were upgraded from VSAT to terrestrial links in Mar 2016. The service quality was improved.

Benefits

Data used for air situational awareness and safety nets.

Enhanced Safety at FIR boundary.

Operational service commenced by Australia in 2010.

Indonesia has been using the data for Tier 2 services since Sep 2014

Phase 1b

Indonesia and Australia plan to share ADS-B data from the following additional sites:

- Timika (Indonesia) (Installed) - Commenced data sharing

- Kupang (Indonesia) (Installed) - Commenced data sharing
- Christmas Island (Australia) (Not yet installed)
- Browse Basin oil rig (Australia) (installed in 2018 and not yet operational)

Data Sharing Agreement signed on 18 Jun 2014.

Sharing agreement extended from 2023 to 2026.

Project 2 – ADS-B Data Sharing In Southeast Asia

Phase 1

Under the near term implementation plan, the parties have commenced ADS-B data sharing from the following sites:

- Singapore (Singapore provide data to Indonesia)
- Natuna (Indonesia provide data to Singapore)
- Matak (Indonesia provide data to Singapore)
- Con Son (Viet Nam provide data to Singapore)
- Sanya FIR (China provide fused data from four ADS-B stations to Hong Kong China)

VHF radio communication services (DCPC) were provided from the following stations to Singapore and Hong Kong China. This is to enable implementation of radar-like separations in the non-radar areas within the Singapore FIR as well as routes L642 and M771.

- Natuna VHF (Install for Singapore by Indonesia) (Installed)
- Matak VHF (Install for Singapore by Indonesia) (Installed)
- Con Son VHF (Install for Singapore by Viet Nam) (Installed)
- Sanya VHF (Install for Hong Kong China by China) (Installed)

ADS-B Data sharing and DCPC services agreement between Singapore and Indonesia signed in Dec 2010.

ADS-B Data sharing and DCPC services agreement between Singapore and Vietnam signed in Nov 2011.

DCPC services agreement between China and Hong Kong China signed in 2005.

ADS-B Data sharing agreement between China and Hong Kong China signed in 2013.

Operational Status

Singapore agreed on separation minima with Viet Nam and have commenced on ADS-B operations since Dec 2013. Singapore commenced with 40nm separation and subsequently reduced to 30nm separation between Singapore and Ho Chi Minh FIR. Further reduction to 20nm longitudinal separation was implemented on 10 Nov 2016.

All 4 administrations (China, Hong Kong China, Singapore and Viet Nam) agreed that operational approval is not required.

Initial Benefits

The above sharing/collaboration arrangements will benefit L642, M771, N891, M753, N892 and L644. Enhanced safety and reduced separation have been achieved. Mandate was effective in Singapore FIR from Dec 2013. China published the mandate in Oct 2019. Mandate for domestic fleet was effective on

10 Oct 2019. Mandate for international fleet will effective on 31 Dec 2020. Hong Kong China's ADS-B mandate was effective from Dec 2016 for aircraft at FL290 and above.

Phase 2

The Philippines has installed ADS-B station at Manila ATM Centre and Bataraza. It is planning to install other ADS-B stations within Manila FIR.

Singapore and the Philippines signed an MOU in Oct 2015 to make available ADS-B data and VHF facilities at Bataraza, Palawan for Singapore. The project was completed in Aug 2017. The ADS-B of Bataraza is yet to be integrated into Manila ATM Centre and it will be done after the hardware is upgraded.

The Philippines indicated that there is a surveillance gap at Northwestern part of Manila FIR and is studying acquisition of space-based ADS-B data to cover the surveillance gap.

China's four ADS-B ground stations deployed in Sanya FIR may be able to cover parts of the surveillance gap. China is prepared to share its ADS-B data, via its ADS-B data processor, with neighbouring states.

Brunei signed an MOU with Singapore in April 2019 where Brunei shared ADS-B data with Singapore and provide the VHF facilities for Singapore ATC use. Data sharing commenced 1 September 2021.

Singapore and Viet Nam signed an agreement in Jul 2016 to make available ADS-B data and VHF facilities at Ca Mau for Singapore. The facilities were commissioned in Nov 2018.

Phase 3

Vietnam has ADS-B coverage at the Southern part of L625, N892, N884, M767 and M772 and Vietnam is willing to share the ADS-B data with the Philippines and Singapore. The discussion between Singapore and Vietnam is in progress.

The Philippines is studying the use of space-based ADS-B to cover its surveillance gaps.

In addition to sharing ADS-B data from its ADS-B station in Terengganu, Malaysia is also willing to share the ADS-B data from its ADS-B stations in Kuching, Bintulu, Kota Kinabalu and Sandakan. The data from these four stations are also useful to Indonesia and will be shared under Project 3. Singapore will share data from its Singapore ADS-B station with Malaysia.

Malaysia and Singapore will initiate discussions on data sharing from the following sites:

- Terengganu (Malaysia) - Installed
- Bintulu (Malaysia) – Installed
- Kota Kinabalu (Malaysia) – Installed
- Kuching (Malaysia) – Installed
- Sandakan (Malaysia) - Installed
- Singapore (Singapore) - Installed

Initial benefits

Enhanced Safety at FIR boundary and coverage redundancy

Project 3 – ADS-B data sharing between Indonesia and Malaysia

Indonesia and Malaysia are willing to share the ADS-B data from the following sites:

- Pontianak (Indonesia) – Installed
- Tarakan (Indonesia) - Installed
- Bintulu (Malaysia) – Installed
- Kota Kinabalu (Malaysia) – Installed
- Kuching (Malaysia) – Installed
- Sandakan (Malaysia) - Installed

Malaysia and Indonesia are reviewing the collaboration agreement.

Initial benefits

Enhanced Safety at FIR boundary and coverage redundancy

Project 4 – ADS-B data sharing between Cambodia, Thailand and Viet Nam

Cambodia is willing to share the ADS-B data from the following sites:

- Phnom Penh International Airport (installed)
- Siem Reap International Airport (installed)
- Stung Treng City (installed)

Viet Nam completed installing 11 new ADS-B stations in the HCM FIR in 2023. Viet Nam is willing to share data with Cambodia and Thailand.

Thailand has 4 ADS-B ground stations (DO260B and lower compliant) installed at Doi Inthanon (Chiangmai), Hatyai Airport (VTSS), Samui Airport (VTSM) and Ubon Ratchathani Airport (VTUU). Moreover, 3 SSRs at Surat Thani Airport (VTSB), Ubon Ratchathani Airport (VTUU), and Phuket Airport (VTSP) have been upgraded with ADS-B capability. In total, 7 ADS-B stations are under approval process and is expected for air traffic service by end of 2024.

Initial benefits

For redundancy

Project 5 – ADS-B data sharing between Indonesia and the Philippines

Indonesia and the Philippines initiated discussion in 2019 on data sharing:

- Melonguane (Indonesia) (installed)
- General Santos (The Philippines) (The plan to install to be reviewed)

Initial benefits

Situational awareness

Project 6 – ADS-B data sharing between Australia, Indonesia and Papua New Guinea

Data Sharing between Australia and Papua New Guinea -

- Thursday Island (Australia) (installed)
- Gove (Australia) (installed)
- Kintore (Australia) Not yet installed – Target to be installed by 2027
- Burns Peak – Port Moresby (PNG) (installed)
- Mt Robinson (PNG) (to be installed by 2018) or Mt Nauwein (to be installed by 2018)

The above data sharing proposal will be re-evaluated due to implementation of space-based ADS-B in Papua New Guinea

Note that the above information from Papua New Guinea was based on previous updates as Papua New Guinea was not present at the meeting.

Data Sharing between Indonesia and Papua New Guinea

- Mt Nauwein (PNG) (to be installed by 2018) – Phase 1
- Merauke (Indonesia) (installed) – Phase 1
- Jayapura (Indonesia) (installed) – Phase 2

New ATM system installed in PNG.

The parties have yet to sign the agreement.

The above data sharing proposal will be re-evaluated due to implementation of space-based ADS-B in Papua New Guinea

General remark for all the above projects: As agreed at previous APAC ADS-B Task Force, WG and SURICG meetings, sharing of ADS-B data should include sharing of VHF radio facilities/services, where possible
