



ICAO

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

Agenda Item 12: Review of the Terms of Reference (ToR) and the Action Items

REVIEW TERMS OF REFERENCE OF SURICG AND ACTION ITEMS

(Presented by the Secretariat)

SUMMARY

This paper presents the Terms of Reference of the SURICG and its action items for review and update.

1. INTRODUCTION

1.1 APANPIRG/26 meeting held from 7-10 September 2015 in Bangkok reviewed and agreed to the draft Terms of Reference for a broader “Surveillance Implementation Coordination Group (SURICG)” and adopted the following Decision:

Decision APANPIRG/26/45 – Surveillance Implementation Coordination Group

*That, the Surveillance Implementation Coordination Group (SURICG) be established with Terms of Reference provided in **Appendix K** to WP/9.*

1.2 It was also suggested that SEA/BOB ADS-B WG which reported to ADS-B SITF would report to APANPIRG through SURICG from 2017 onwards.

1.3 Mode S DAPs WG was established by SURICG/2 in 2017, and the ToR of Mode S DAPs WG was revised in 2022 by SURICG/7, renamed the WG as Mode S and DAPs Working Group. This group was further dissolved in 2023, and outstanding work was transferred to SURICG.

1.4 The SURICG/9 meeting held from 7 - 10 May 2024 reviewed and updated the action items from the SURICG/8 meeting.

2. DISCUSSION

2.1 In August 2021, SURICG ToR was reviewed by SURICG/6 in view of the integration of SEA/BOB ADS-B WG ToR, and CNS SG/25 adopted the revision through **Decision CNS SG/25/14 (SURICG/6/8): Revised ToR of Surveillance Implementation Coordination Group (SURICG)**.

2.2 In June 2023, SURICG/8 reviewed the achievements of Mode S and DAPs WG, considered that most of the tasks outlined in ToR had been completed or already in the process of completion, and the remaining tasks of the WG could be transferred under SURICG and thus of the view that the Mode S and DAPs WG was able to dissolve. Hong Kong China and Singapore analyzed the ToR of Mode S and DAPs WG, and suggested a revised version of ToR of SURICG which was endorsed by SURICG/8 and further adopted in CNS SG/27 through **Decision CNS SG/27/12 - Revised ToR of Surveillance Implementation Coordination Group** to reflect the change due to the dissolution of Mode S and DAPs WG.

2.3 SURICG/9 Meeting further reviewed the revised ToR; however, no changes were made. The revised Terms of Reference of SURICG are provided in **Attachment A** to this paper.

2.4 Noting that Mode S and DAPs WG was dissolved, and its remaining tasks were transferred to SURICG to follow up in June 2023, the consolidated action items list reviewed by the SURICG/9 meeting is provided in **Attachment B** of this paper for review and further updates by the Meeting.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) review the ToR of SURICG provided in **Attachment A**;
- c) review and update the actions items provided in the **Attachment B**; and
- d) discuss any related issues as appropriate.

**TERMS OF REFERENCE OF
SURVEILLANCE IMPLEMENTATION COORDINATION GROUP (SURICG)**

Consists of objectives and deliverables as follows:

The Objectives of the SURICG are to:

- 1) *Ensure continuous and coherent development of the Surveillance parts of the Asia/Pacific Regional Air Navigation Plan (APAC e-ANP) in a manner that is harmonized with adjacent regions, consistent with ICAO SARPs, the Global Air Navigation Plan and the Global Aviation Safety Plan;*
- 2) *Facilitate the implementation of Surveillance systems and services identified in the Aviation System Block Upgrades (ASBU) modules, APAC ANP, and Asia/Pacific Seamless ATM Plan elements using the project management principles where appropriate; and*
- 3) *Review, identify and address major issues in technical, operational, safety and regulatory aspects to facilitate the implementation or provision of efficient Surveillance services in the Asia and Pacific Regions.*

Deliverables to meet the Objectives:

- 1) *Progress report to be submitted to CNS SG addressing the SURICG deliverables (listed in 2 to 13 below);*
- 2) *Surveillance parts of the APAC ANP to be reviewed and aligned with work programme of States and, as necessary, amendment proposals prepared to update the APAC ANP to reflect changes in the operational and global requirements;*
- 3) *To review the outcome of the Surveillance Panel, SAS Panel, AN-Conf, APANPIRG and CNS SG related to surveillance, revise and update a tasks list and action items for the SURICG and formulate relevant Working Groups to work on those tasks / action items;*
- 4) *To develop regional targets/metrics for planning, implementation, measurement and monitoring of Surveillance systems and services;*
- 5) *To review and update the Surveillance Strategy by considering currently available and emerging technologies with respect to concept of operations, relative costing, technical and operational performance and maturity of alternative technology/solutions such as primary radar, secondary radar including Mode-S, ADS-B, Multilateration, ADS-C, multi-static primary radar (MPSR) and existing and emerging technology for detection of UAS including RPAS;*
- 6) *To study and identify applicable multilateration applications in the Asia and Pacific Regions considering:*
 - *Concept of use/operation*
 - *Required site and network architecture*
 - *Expected surveillance coverage*
 - *Cost Benefits Analysis*
 - *Recommended separation minimums*

- 7) To study and identify applicable Mode S ~~radar~~ and DAPs applications in the Asia and Pacific Regions considering:
- Concept of use/operation;
 - Assignment of and migration to SI code in APAC;
 - Required site and network architecture;
 - Expected surveillance coverage;
 - Cost of system;
 - Requirement of surveillance systems (focusing on radar)
 - Matching functionality required in ATC ATM automation system;
 - ~~the use of Enhanced MODE S data (DAPS)~~
 - Other currently available or emerging technologies;
 - ~~ICAO GANP and ASBU; and~~
 - Evaluation method for Mode S and DAPs performance.
- 8) To develop an implementation plan for ADS-B applications in the Asia and Pacific Regions including implementation target dates taking into account:
- available equipment standards;
 - readiness of airspace users and ATS providers;
 - identifying sub-regional areas (FIRs) where there is a positive cost/benefit for implementation of ADS-B and associated VHF voice communications;
 - developing a standardised and systematic task-list approach to ADS-B implementation; and
 - major traffic flows.
- 9) To coordinate ADS-B implementation plan and concept of operations with other ICAO regions where ADS-B implementation is going on and with relevant external bodies such as EUROCONTROL, EUROCAE, RTCA and Industry;
- 10) To encourage research and development, trials and demonstrations in the field of Surveillance and other relevant areas; 5
- 11) Facilitate implementation of surveillance data sharing (including DCPC) and sharing surveillance information and expertise between States through organizing educational seminars and providing guidance materials to educate States and airspace users
- 12) To support the ICAO in making specific recommendations, developing guidance materials, aimed at improving the Surveillance services by the use of existing and/or new procedures, facilities and technologies; and
- 13) Draft Conclusions and Decisions to be formulated relating to matters in the field of Surveillance that come within the scope of the APANPIRG or CNS Sub-group work plan.

[Note: The Implementation Coordination Group, while undertaking the tasks, should take into account of the work being undertaken by SAS, Surveillance Panels with a view to avoid any duplication.

The Implementation Coordination Group will report to CNS Sub-group and CNS Sub-group will coordinate with ATM Sub-group.]

Membership:

All APAC member States/Administrations providing air navigation services in the Asia and Pacific Regions.

The Surveillance Implementation Coordination Group shall normally invite representatives of International Organizations recognized by the ICAO Council and Industry partners as required by the group which represent important civil aviation interests to participate in its work in a consultative capacity.

SURICG/10
Attachment B to WP/09

SN	Reference	Who	What	Due date	Status	Completed on	Result	Comment
1	1-1	IATA and Hong Kong China	In MEL not included the effect of GNSS failure on ADS-B output which should be included. (SEA/BOB WG/9)		close	SURICG/3	Initial result based on contact with AIRBUS & BOEING subject to agreement by the relevant Administrations	SURICG/1: Contact Boeing and Airbus through operators SURICG/2:Initial result based on contact with AIRBUS & BOEING subject to confirmation
2	1-2	All States/ Administrations	States to advise when their ground stations can be upgraded to receive ADS-B DO260B compliant ADS-B data. A survey was conducted during ADS-B SITF/13 (Appendix E). (SEA/BOB WG/9)	1-Dec-19	close	SURICG/5	Review Attachment B to SURICG/2 - WP/03	Table updated and maintained by SURICG SURICG/1: Further updates the Table and report to SURICG/2 SURICG/2: Further updates the Table and report to SURICG/2 SURICG/3:Further updates the Table and report to SURICG/3 SURICG/4:Further updates the Table and report to SURICG/5 SURICG/5:The meeting further reviewed the table of DO260B compliant ADS-B ground stations in APAC Region based on the outcome of the SURICG/4 and noted the proposal from SEA/BOB WG/15 to stop the review of this historical table as almost all ground stations having been
3	1-3	Hong Kong China and RO/RSO Australia, Singapore	General ADS-B Avionics Problem Reporting Database (APRD) –Initial functions of the Database being implemented.)	21-Jul-17	close	SURICG/2	urther progress achieved at SURICG	SURICG/1:Progressed at ADS-B SITF15, end of June 2016 SURICG/2:initial operational July 2017 SURICG/5:the usage of APRD by States/Administrations appears to be low since its deployment.
4	1-4	South Pacific States On-going Transferred to SURICG	Develop and implement regional collaboration project for ADS-B out operational use including data sharing in South Pacific and report on implementation progress.(Previous meeting of ADS-B SITF and ADS-B SITF/13)		close	SURICG/6		SURICG/1:Initial stage Report by Ad Hoc WG at ADS-B SITF14
5	1-5	All Members On-going Transferred to SURICG	Perform data collection and data analysis of ADS-B messages to examine GPS performance in different geographic areas.(Previous meetings of ADS-B SITF and ADS-B WGs)		close	SURICG/4		Report of data collected and analyzed - continuous SURICG 5:USA and China to provide papers
6	1-6	Secretariat prepare initial paper	ICAO Aircraft address-managment (Emerging issue)		close	SURICG/2	Completed	Secretariat prepare initial paper Initial discussion was based WP prepared

SURICG/10
Attachment B to WP/09

SN	Reference	Who	What	Due date	Status	Completed on	Result	Comment
7	1-7	Secretariat prepare initial paper with support from sub-set of members of the group (New Zealand, China, Indonesia, Japan, Mongolia, Singapore)	Working arrangement (sub-working group) for SURICG relevant to Mode S Implementation (in SURICG/1)		close	SURICG/3	Completed	Paper prepared/discussed and agreed by SURICG/2 for establishment of such working group. DAPS WG established.
8	1-8	IATA & all member States/Administrations	a) Inform member airlines/operators about the B787 ADS-B Deficiency and the service Bulletin (SB) B787-81205-SB340005-00 and accomplish the upgrade as soon as possible; b) Member States/Administrations of the		close	SURICG/2		SURICG/1:Inform member airlines SURICG/2:Further updates the service bulletin was provided by Boeing to the SURICG/2 meeting SURICG/3:Further updates on the service bulletin was provided by Boeing to the SURICG/3 meeting
9	2-1	Co-chairs, Japan	Develop guidance material on ICAO aircraft address monitoring for inclusion in AIGD (in SURICG/2)		close	SURICG/5	Status report and procedure on identify a/c address problem and reporting path.	SURICG/3:Work was underway to include guidance on aircraft address management into Doc9924 – ASM. Keep this item and to see if any further detailed guidance can be provided into AIGD SURICG/4:Japan agreed to provide a working paper in SURICG/5 on provision of more detailed guidance materials on this subject. SURICG/5: Japan presented to the meeting on its experience on the ICAO Aircraft Address (Mode-S address) monitoring since 2007, the meeting agreed to incorporate the main content of this paper into the AIGD.
10	2-2	Secretariat in consultation with States. Tasked to ICAO sec. & DAPS WG	Examine the density of Mode S radar installations in the Region to determine the need for development of a SI code allocation/implementation plan and related issues (in SURICG/2)	22-Dec-21	close	SURICG/6	State Letter Ref.: T 8/5.11 AP200/21 (CNS) dated on 22 December 2021	Updates to Modes SS code still not very active by States. Current information shows that II code is still sufficient. SURICG/6:Draft Conclusion SURICG/6/2 (DAPs WG/4/4)-Transition from II code to II and SI mixed code
11	2-3	Secretariat and States	New definition of ADS-B implementation in the Seamless reporting in i-Star and focal point nominated by States/Administration be notified for follow-up actions (in SURICG/2)		close	SURICG/4	Report status	APANPIRG/28:The Secretariat will follow up ICAO HQs to update the iSTAR and notify the focal points once the updated definition was incorporated. The meeting was informed that the PfA to SUPPs (Doc7030) on APANPIRG Conclusion 28/25 was being coordinated within ICAO Secretariat. SURICG/4:Status updates in the Seamless ATM Plan is slow
12	4-1	DAPs WG and secretariat	Review outcome of DAPs WG (in SURICG/4)		close	SURICG/5		SURICG/5:the meeting reviewed outcome of the Third Meeting of the Mode S DAPS WG through WP/06

SURICG/10
Attachment B to WP/09

SN	Reference	Who	What	Due date	Status	Completed on	Result	Comment
13	4-2	Co-Chairs and secretariat	Review APAC regional Surveillance Strategy and revise when necessary (in SURICG/4)		close	SURICG/6		SURICG/4:formulated draft Decision.
14	5-1	Led by Singapore, supported by HK	A Study Group to Explore Solutions on Surveillance Data Sharing in coordination with SWIM/ATFM experts (prepare a working paper to seek endorsement from CNS SG/24) (in SURICG/5)		close	SURICG/6	Decision CNS SG/24/16 (SURICG/5/1) :Establishment of Study Group under SURICG on Sharing of Surveillance Data in SWIM	
15	5-2	Co-chairs, concerned States	Regional planning criteria for additional SAC assignment (in SURICG/5)		close	SURICG/6	Implemented by ICAO APAC SURICG/6:The meeting noted that there is 52 SAC allotments out of 256 in total, which are assigned to 47 contracting States/Administrations/Territories and SACs in APAC Region would be enough to cater the actual and	SURICG/5: the conclusion of IP/20
16	5-3	DAPs WG	Study Mode S roadmap, including SI/II operation experience, 1030/1090MHz congestion and retrofit Mode S avionics (in SURICG/5)		close	SURICG/6	Draft Conclusion SURICG/6/3(DAPs WG/4/5)-The APAC Regional Roadmap for Mode S Implementation	
17	5-4	Co-chairs, ICAO APAC, concerned parties	Follow up the action items from SEA/BOB ADS-B WG/15 (in SURICG/5)		close	SURICG/6	Decision CNS SG/24/12 (SURICG/5/2) - Dissolution of SEA/BOB ADS-B WG	The SURICG/6 agreed that all items were identified to be completed
18	5-5	Co-chairs	Review SURICG TOR to incorporate SEA/BOB ADS-B WG TOR		close	SURICG/6	the SURICG ToR was found necessary to be updated and the following Draft Decision was adopted in the meeting for consideration in CNS SG/25	Decision CNS SG/25/14 (SURICG/6/8): Revised ToR of Surveillance Implementation Coordination Group (SURICG).
19	6-1	DAPs WG in consultation with Surveillance Panel	Mode S and DAPs WG to reflect the required updates for II and SI mixed code allocation in Mode S DAPs IGD.		close	SURICG/8	COMPLETED	
20	6-2	DAPs WG	DAPs Working Group to consider rename to better reflect the focus of work scope not only on DAPs but also on Mode S Radars		close	DAPs WG/5	COMPLETED	

SURICG/10
Attachment B to WP/09

SN	Reference	Who	What	Due date	Status	Completed on	Result	Comment
21	6-3	Hong Kong China and Thailand with Secretariat Support	Regional coverage map of surveillance and DCPC included in the Seamless ANS Plan (3.0) to update the coverage map during next Seamless ANS Plan review		close	Next Seamless ANS Planning and Implementation WG Meeting or suitable forum	Completed , to be incorporated in Plan 4.0	
22	6-4	Secretariat and States (including China, India, Indonesia, ROK, Singapore)	A new Ad-hoc Working Group to discuss performance specifications and benchmarking of radar for APAC Region		close	SURICG/8	Removed Outcome: Guidance Material on radar performance and testing IP/17 SURICG8 Refer to ICAO Doc 8074	
23	6-5	Secretariat with DAPs WG	Development of a SI code allocation/implementation plan and related issues		close	SURICG/8	COMPLETED Enhancement on Tool to support the allocation of SI code	
24	7-1	Secretariat with Mode S and DAPs WG	Set up a List of Points of Contact for Mode S II/SI Coordination Matters		close	Mode S WG/6	COMPLETED	
25	7-2	ROK, with Secretariat support	ROK to provide their point of contact on sharing their software Astecat for measuring Working Paper on reporting the inconsistent ICAO Aircraft Address and Target Identification between surveillance data and flight plan be submitted to RASG-APAC Workshop on consistency of ICAO Aircraft Address and Target Identification between		close	SURICG/8	COMPLETED	
26	7-3	Hong Kong China	Address and Target Identification between surveillance data and flight plan be submitted to RASG-APAC Workshop on consistency of ICAO Aircraft Address and Target Identification between		close	RASG-APAC/12	COMPLETED Need further discussion with ATM	
27	7-4	Hong Kong China, Secretariat	Workshop on consistency of ICAO Aircraft Address and Target Identification between		close	SURICG/8	COMPLETED Need further discussion with ATM	
28	7-5	Hong Kong China, Secretariat	Guidance Material on consistency of ICAO Aircraft Address and Target Identification between		close	SURICG/8	Superseded by ACTION ITEM 8-1 Need further discussion with ATM	
29	7-6	Hong Kong China, Chair of SUR SG	Alignment of SUR SG Report with AIGD regarding definitions of Tiers 1 and 2		close	CNS SG/26	COMPLETED	
30	8-1	Ad-hoc group led by Hong Kong China, supported by China, New Zealand, Singapore, USA and IATA	Regional guidance material to mitigate the discrepancies observed in ICAO Aircraft Address and Target Identification between surveillance data and flight plan		close	SURICG/9	COMPLETED	
31	8-2	ICAO Secretariat	The Action Items List of Mode S and DAPs WG will be incorporated into the Action Items of SURICG.		close	SURICG/9	COMPLETED	In August 2021, SURICG ToR was reviewed by SURICG/6 in the view of integration of SEA/BOB ADS-B WG ToR and CNS SG/25 adopted the revision through Decision CNS SG/25/14 (SURICG/6/8): Revised ToR of Surveillance Implementation Coordination Group (SURICG).
32	8-3	concerned Member States, ICAO Secretariat	Formally update the e-ANP Volume II Table CNS II-APAC-3 SURVEILLANCE in due course at earliest convenience.		close		COMPLETED	
33	D-1	China, Malaysia and Singapore	II code coordination for ADS-B and MLAT (in DAPs WG/2)		close		COMPLETED	New guidance material is under development by SP, DAPS WG will monitor the progress
34	D-2	Member States	Update DAPs Implementation Status table for APAC region (in DAPs WG/2)		close		COMPLETED	To update the information in the table as necessary.

SURICG/10
Attachment B to WP/09

SN	Reference	Who	What	Due date	Status	Completed on	Result	Comment
35	D-3	Co-chairs and hosting States	Harmonization with air space users (in SURICG2)		Open	Propose to close	The "Harmonization with airspace user" came from the objective of the dissolved Mode S DAPS WG, where the harmonization came from the ToR endorsed in SURICG/2. Since this is an ongoing item and has been re-merged back into the ToR of SURICG, I believe the item has already incorporated in the work of SURICG thus could be suggested for removal from the list.	Invite avionics manufacturers and airlines to share experience, where possible.
36	D-10	Co-chairs, ICAO	Reservation of II codes 14 and 15 for Research, Test and Military Purposes (DAPs WG/5)		Open	Propose to close	COMPLETED	To decide when significant number of radars migrated from II to Surveillance Identifier (SI) codes. ICAO APAC will make a conscious effort to avoid allocating II 14 and 15 (and the matching SI codes) to new radars unless due to capacity issue.
37	D-11	China	Update IGD with the discussion outcome on IC planning and coordination (DAPs WG/6)	Target in 2025	Open	Expected paper/IGD from China	China comments: The Edition 6.0 of the Mode S IGD was submitted last year. The main amendments to this version were the addition of some achievements from DAPs/6, such as the general strategy on the assignment of and migration to SI code that has been adopted during the 34th APANPIRG meeting. And there was also a change in the strategy to migrate from II codes to SI code in SURICG/9. The meeting finally decided to delay the update of the Mode S IGD to this year. This year only these related contents will be updated. I think there is no need for a paper to introduce the revised document. And the revised document will be submitted to you as soon as possible. Thank you	
38	D-12	ICAO	Workshop on the use of Mode S and DAPs and Assignment of /migration to II/SI codes (DAPs WG/6)	Target in 2025	Open		Plan with FF SUR module	
39	9-1	Member States, ICAO Secretariat	Continue monitoring GNSS vulnerability issue and consider revising the regional surveillance strategy when necessary		Open			
40	9-2	ICAO Secretariat	Incorporate updates from States during SURICG/9 into e-ANP Volume II Table CNS II-APAC-3 SURVEILLANCE through the PfA process.		Open			

SURICG/10
Attachment B to WP/09

SN	Reference	Who	What	Due date	Status	Completed on	Result	Comment
41	9-3	Member States	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 future.		Open			
42	9-4	Member States	Nominate experts to support and participate in the ADS-B Workshop in person to maximize the benefit .	14-16 August 2024	close			