



ICAO

*International Civil Aviation Organization***Eighth Meeting of the Surveillance Implementation Coordination Group (SURICG/8)***Bangkok, Thailand, 6 – 9 June 2023*

- Agenda Item 8 Update on surveillance activities and explore potential cooperation opportunity
b) Updates from ICAO Surveillance Panel, Standards Making Organization

ICAO SURVEILLANCE PANEL ACTIVITIES

(Presented by ICAO Surveillance Panel)

SUMMARY

This paper describes recent and planned activities of the ICAO Surveillance Panel.

- 1.1 The work programme and activities of the ICAO Surveillance Panel (SP) are relevant to the SURICG. Per its charter from the Air Navigation Commission (ANC), the SP consists of two Working Groups: the Aeronautical Surveillance Working Group (SP-ASWG) and the Airborne Surveillance Working Group (SP-AIRBWG).
- 1.2 Information and discussions from the most recent SP Working Group meetings and plans for SP/5 may be useful for consideration by the SURICG. Note that the results of SP/4 were previously reported in SURICG/7-IP02.

2. DISCUSSION

2.1 In response to ICAO job card SP.008.03 “Ensure performance of surveillance systems”, task 5 “Develop measurable technical performance specifications for surveillance systems and update information on ADS-B versions 1 and 2 as well as WAM definitions included in Cir 326”, the SP created a Performance-Based Surveillance Sub-Group (PBSSG). The PBSSG is charged to develop new guidance material containing performance-based surveillance requirements, including updated materials which would replace ICAO Cir 326, which is now outdated. In November 2021, the PBSSG provided an initial draft RSUR Manual to the membership of the SP for comments and feedback. In September 2023, at the Fifth Meeting of the SP, a major revision of this draft Manual will be provided to SP membership for review and comment. Current PBSSG plans are to revise the draft Manual in response to comments received and submit this Manual to the Sixth Meeting of the SP in the first quarter of 2025.

2.2 Since the last SURICG meeting, each of the Surveillance Panel’s Working Groups have held two meetings.

2.3 The Fourteenth Meeting of the Airborne Surveillance Working Group (AIRBWG) and the Sixteenth Meeting of the Aeronautical Surveillance Working Group (ASWG) were held as consecutive hybrid meetings in Montreal at ICAO Headquarters. AIRBWG/14 was held from 18 to 21

October 2022; ASWG/16 was held from 24 to 28 October 2022. AIRBWG/14 was attended by 34 participants (15 members, 17 advisors, and 2 participants from the ICAO Secretariat) from 13 ICAO States (6 from the APAC region) and five International Organizations (including ICAO). ASWG/16 was attended by 60 participants (17 members, 32 advisors, 8 participants representing the CP-DCIWG, and 3 participants from the ICAO Secretariat) from 15 ICAO States (6 from the APAC region) and six International Organizations (including ICAO).

2.4 The Fifteenth Meeting of the Airborne Surveillance Working Group (AIRBWG) and the Seventeenth Meeting of the Aeronautical Surveillance Working Group (ASWG) were held as consecutive hybrid meetings in Singapore, hosted by the Civil Aviation Authority of Singapore. AIRBWG/15 was held from 28 February to 3 March 2023; ASWG/17 was held from 6 to 10 March 2023. AIRBWG/15 was attended by 25 participants (8 members, 16 advisors, and the Secretary) from 7 ICAO States (3 from the APAC region) and four International Organizations (including ICAO). ASWG/17 was attended by 38 participants (10 members, 27 advisors, and the Secretary) from 13 ICAO States (5 from the APAC region) and four International Organizations (including ICAO).

2.4.1 AIRBWG/15 considered Change Proposals (CPs) to the Manual on Airborne Surveillance Applications (Doc 9994). The first CP suggested adding details on the conduct of Interval Management (IM), including new abbreviations, definitions and illustrated depictions of the five IM clearance types and discussion of off-nominal IM situations. A second CP suggested changes in the definition of TIS-B in Doc 9994 and in Annex 10, Volume IV. A third CP suggested updating references to various external documents in Doc 9994. These CPs will be reviewed again at AIRBWG/16 and are expected to be considered by SP/5.

2.4.2 AIRBWG/15 considered comments received from SASP and RPASP per the inter-panel coordination on the PfA of Annex 10 Volume IV, Chapters 4 and 7. All of the SASP comments were related to the display of traffic information, consistent with IFALPA position papers 21POS03 and 21POS04 and were dispositioned by the meeting. With regard to the RPASP comments, about one-third were related to definitions and some comments were related to unchanged text; all comments on changed text in the PfA from the RPASP were dispositioned by the meeting.

2.4.3 ASWG/17 considered various proposals for amending Annex 10, Volume IV:

[a] to establish an interference tolerance criterion for systems under the purview of the SP, by specifying that existing equipment must meet their performance requirements under an average interference power to average noise power level ratio (I/N); and

[b] to insert a requirement describing the II/SI mode of operation that is needed for an ANSP to start using SI codes before all aircraft are SI code capable; and

[c] changes to the signals-in-space requirements, along with a variety of other clarifications and corrections, plus reorganizing section 3.1 such that section 3.1.1 will now be for Mode A and C capabilities while section 3.1.2 will be for the Mode S and intermode capabilities.

2.4.4 ASWG/17 considered a proposal for amending the proposed Change Proposal for Doc 9871 to make several requested revisions to Appendix A. The primary changes resulted from a request that the transponder retain certain CAS-related information in the Data Link Capability Report instead of clearing the data as a result of a timeout. A similar change to CAS hardware and software registers to prevent timeout was also included. A change to correct the description of the Basic Dataflash monitoring data field in register 0x11 was proposed to align the description with processing requirements. In addition, minor editorial corrections discovered were also included in the revision. These proposals were agreed and will be added to the consolidated CP for Doc 9871 to be considered by SP/5.

2.4.5 ASWG/17 considered various Change Proposals for Doc 9924:

[a] to add material on II/SI code assignment to be inserted in Appendix H and J to facilitate interrogator code assignments using SI code when not all transponders are SI code capable; and

[b] to provide new guidance on how to use the proposed interference tolerance criterion (see section 2.4[a] of this paper) for compatibility studies with 1030 MHz and 1090 MHz receivers; and

[c] to add a recommendation that if separate RF paths are used for P1sum (Σ) and P1control (Ω), care must be taken to ensure that both the P1sum (Σ) and P1control (Ω) pulses comply with the pulse characteristics and timing for P1 pulses.

2.4.6 ASWG/17 was informed by the Panel Secretary on the status of the PfA to Annex 10 Volume III relating to changes to allocations of 24-bit aircraft addresses, which was agreed by SP/4, noting that State Letter AN7/1.3.95-22/106 was published on 22 December 2022 and circulated to States and international organizations for their comments. The expected applicability date for this PfA is 28 November 2024.

2.4.7 ASWG/17 considered and discussed several papers on compatibility testing with LDACS (L-band Digital Aeronautical Communications System) and discussed the ongoing Joint Working Group on this topic between the SP and the Communications Panel. ASWG/17 considered several action items from Assembly/41, including an education paper on public availability of Mode S surveillance data and a paper assessing the merits of moving all flight test guidance material from Doc 9924 into Doc 8071, Volume III. ASWG/17 discussed a paper which reviewed what guidance in Doc 9924 needs to change due to the SARPs changes described in section 2.9 below. ASWG/17 also was briefed on the Technical Sub-Group’s (TSG’s) work to understand the impact of CW interference on Mode S transponders, the ongoing work of the TSG to understand 1030/1090 MHz spectrum congestion issues and mitigations, and the ongoing work of the TSG to update the surveillance material in Doc 9830 (A-SMGCS Manual). Finally, ASWG/17 reviewed and approved a recommendation to the Communications Panel that Chapter 5 be removed from Annex 10, Volume III, since the system in A10V3 Chapter 5 has never been fully implemented and significant concerns exist as to compatibility with the implemented systems in Annex 10 Volume IV; the SP Secretary will forward this recommendation.

2.5 As reported in SURICG/7-IP/02, SP/5 will consider a consolidated proposal for amendment to Annex 10 — Aeronautical Telecommunications, Volume IV —*Surveillance and Collision Avoidance Systems*. The proposal updates technical provisions related to Secondary surveillance radar (SSR) Mode S transponder and 1090 MHz extended squitter (Initial Proposal 1), airborne collision avoidance systems (ACAS) III (Initial Proposal 2), airborne surveillance applications (Initial Proposal 3), as well as the changes described in section 2.4 of this paper. This will result in changes to every chapter of Annex 10, Volume IV, except for Chapter 6. If approved by SP/5, these SARPs changes could be approved and effective by November 2026.

2.6 Additionally, it is expected that consequential changes to Doc 9871 will accompany the SARPs changes to be considered at SP/5. Some consequential changes to other ICAO documents under the purview of the SP, such as Doc 9924 and Doc 9863, are expected to be presented for consideration at SP/5 or will be prepared for SP/6.

2.7 The SP Working Groups discussed and agreed with the future meeting schedule listed in the table below, which includes the timeline for the next Panel meeting, SP/5, to be held in September 2023.

MEETINGS	DATES	VENUE	REMARK
3RD QTR 2023 (The Fifth meeting of the Surveillance Panel (SP/5))			
SP/5	20-29 September 2023 (9am-5pm) Montreal time	ICAO Montreal Canada Conference Room CR5	

Members only Meeting	20th September 2023 <i>Note: There will be a dial in capability</i>		Expected to be held from 0830-0900 Montreal time (time TBC)
First Plenary	20th September 2023 <i>Opening session with the ANC</i>		Expected to be held from 0900-1000 Montreal time (time TBC)
AIRBWG/16	20-22 September 2023		Expected to start at 1000 Montreal time on 20-Sep (time TBC)
ASWG/18	25-27 September 2023		
Last Plenary	28-29 September 2023		A debrief with ICAO Air Navigation Commission is expected on 29-Sep (time TBD)
1ST QTR 2024 (Working Group Meetings)			
AIRBWG/17	5-8 March 2024	ICAO Montreal Canada (TBC) CR A/B (AIRB WG) CR6 (ASWG)	
ASWG/19	11-15 March 2024		
3RD QTR 2024 (Working Group Meetings)			
AIRBWG/18	18-20 September 2024	Montreal Canada (TBC) AIRBWG , hosted by IATA ASWG in CR6, ICAO HQ	
ASWG/20	23-27 September 2024		
1st QTR 2025 (The Sixth meeting of the Surveillance Panel (SP/6))			
SP/6	10-21 March 2025 (9am-5pm Montreal time)	ICAO Montreal Canada Conference Room CR5/CR7A	
Members only Meeting	10th March 2025		
First Plenary	10 March 2025 Opening Session with ANC		
AIRBWG/19	10-14 March 2025		
ASWG/21	17-21 March 2025		

3. ACTION BY THE MEETING

- 3.1 The meeting is invited to:
- a) note the information contained in this paper; and
 - b) discuss any relevant matter as appropriate
