

*International Civil Aviation Organization*



ICAO

**THE FOURTH MEETING OF MODE S DOWNLINKED  
 AIRCRAFT PARAMETERS WORKING GROUP  
 (MODE S DAPs WG/4)**

Video Teleconference, 29 – 31 March 2021

**Agenda Item 8:** Review the TOR and Action Items from DAPs WG/3

**REVIEW OF TERMS OF REFERENCE AND ACTION ITEMS**

(Presented by the Secretariat)

**SUMMARY**

This paper presents Terms of Reference of the Mode S DAPS WG and the action items developed by DAPs WG/3 meeting in May 2020 for review and updating.

**1. INTRODUCTION**

1.1 The Mode S DAPs WG/3 reviewed the Terms of Reference and proposed minor editorial changes to the TOR, and included Australia, Indonesia, Nepal and Sri Lanka as new members. The meeting also updated the action items.

**2. DISCUSSION**

2.1 The Fifth Meeting of the Surveillance Implementation Coordination Group (SURICG/5) was held from 22 to 24 September 2020. The Meeting was an on-line meeting using MS Teams. The revised Terms of Reference of Mode S DAPs WG was adopted by SURICG/5 through Decision SURICG/5/5:

<b>Decision SURICG/5/5 - Revised TOR of Mode S DAPs WG</b>	
What: That, the revised Terms of Reference of Mode S DAPs Working Group 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: Editorial correction and revision to reflect regional updates in implementation.	Follow-up: <input type="checkbox"/> Required from States
When: 24-Sep-20	Status: Referred back to WG/TF
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: SURICG	

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2.2 The list of action items is developed and owned by the working group, and the action items developed by DAPS WG/3 needs to be updated by this meeting.

**3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) review the TOR provided in **Attachment A**;
- b) review and update the list of action items for the WG provided in **Attachment B**;  
and
- c) discuss any matters appropriate.

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**REVISED TERMS OF REFERENCE OF MODE S DAPS WORKING GROUP**  
(by Mode S DAPs WG/3, 14 May 2020)

**Working Arrangement of the Mode S DAPS WG**

**Membership:** The Mode S DAPS WG shall be composed of experts involved in technical and operation of surveillance services as well as operational experts. Member States of SURICG are encouraged to volunteer to form this Working Group. The working 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.

**Meetings:** The Mode S DAPS WG shall convene annually with at least one face-to-face meeting per year, and supplemented with WebEx meetings as required. The outcome of the meetings shall be reported to the SURICG.

**Schedule and delivery:** Subject to the extent of prioritized applications considered by the Mode S DAPS WG, the schedule for delivery of the working group shall be 3 years after initiation of the Mode S DAPS WG (28 March 2018). The delivery point(s) will be nominated by SURICG through discussion. The Mode S DAPS WG shall report to the APANPIRG via the SURICG.

**Terms of Reference.** See next section.

**Term of Reference**

**The Objectives of Mode S DAPs Working Group are to:**

- 1) Ensure harmonized implementation of Mode S DAPs in the Asia and Pacific Regions according to Surveillance Strategy adopted by APANPIRG;
- 2) Facilitate the implementation of Mode S DAPs application in the Asia and Pacific Regions using the project management principles where appropriate to maximize its benefit to region; and
- 3) Review, identify and address major issues in technical, operational and regulatory aspects to facilitate the Mode S DAPs implementation in the Asia and Pacific Regions.

**Deliverables to meet the Objectives:**

- 1) Progress report to be submitted to SURICG addressing the Mode S DAPs Working Group deliverables (listed in 2 to 7 below);
- 2) To study and identify applicable Mode S DAPs applications in the Asia and Pacific Regions considering:
  - Concept of use/operation;
  - Cost of system;
  - Requirement of surveillance systems (focusing on radar);
  - Matching functionality in ATC automation system;
  - Other currently available or emerging technologies;
  - ICAO Global Air Navigation Plan (GANP) and Aviation System Block Upgrades (ASBU); and
  - Evaluation method for Mode S DAPs performance.

- 3) To identify and develop the regional requirements of Mode S DAPs capability in the area of aircraft equipage, surveillance systems (focusing on radar) and ATC automation system, taking into account the relevant performance expectations of the Asia/Pacific Seamless **ATMANS** Plan;
- 4) To develop roadmap for Mode S DAPs application in the Asia and Pacific Regions taking into account of:
  - Available equipment standards;
  - Readiness of airspace users and ATS providers; and
  - Development of standardized and systematic approach to Mode S DAPs application.
- 5) To develop guidance materials to assist States and airspace users on the use of Mode S DAPs in the Asia and Pacific Regions;
- 6) To encourage research and development, trials and demonstrations in the field of Mode S DAPs application; and
- 7) Draft Conclusions and Decisions to be formulated relating to matters in the field of Mode S DAPS that come within the scope of the SURICG work plan.

*[Note: Mode S DAPS Working Group will report to SURICG and SURICG will coordinate with CNS Sub-group.]*

**Current Members:** The working group is currently comprised of representatives from Australia, Cambodia, China, Hong Kong China, India, Indonesia, Japan, Republic of Korea, Malaysia, Nepal, New Zealand, Philippines, Singapore, Sri Lanka, Thailand and Viet Nam, and is led by China and Singapore.

**TERM OF REFERENCE**

		<b>Efforts thus far</b>
<b>The Objectives of Mode S DAPs Working Group are to:</b>		
1	Ensure harmonized implementation of Mode S DAPs in the Asia and Pacific Regions according to Surveillance Strategy adopted by APANPIRG;	Discussed at this meeting.
2	Facilitate the implementation of Mode S DAPs application in the Asia and Pacific Regions using the project management principles where appropriate to maximize its benefit to region; and	High level principle is in the <b>draft</b> guidance material.
3	Review, identify and address major issues in technical, operational and regulatory aspects to facilitate the Mode S DAPs implementation in the Asia and Pacific Regions.	Issues are being discussed in the Working Group.
<b>Deliverables to meet the Objectives:</b>		
1	Progress report to be submitted to SURICG addressing the Mode S DAPs Working Group deliverables (listed in 2 to 7 below);	
2	To study and identify applicable Mode S DAPs applications in the Asia and Pacific Regions considering: <ul style="list-style-type: none"> <li>- Concept of use/operation</li> <li>- Cost of system</li> <li>- Requirement of surveillance systems (focusing on radar)</li> <li>- Matching functionality in ATC automation system</li> <li>- Other currently available or emerging technologies;</li> <li>- ICAO Global Air Navigation Plan (GANP) and Aviation System Block Upgrades (ASBU);</li> <li>- Evaluation method for Mode S DAPs performance.</li> </ul>	Applications are being discussed in the Working Group.
3	To identify and develop the regional requirements of Mode S DAPs capability in the area of aircraft equipage, surveillance systems (focusing on radar) and ATC automation system, taking into account the relevant performance expectations of the Asia/Pacific Seamless <b>ATMANS</b> Plan;	Discussed at this meeting.
4	To develop roadmap with a view to formulate mandates for Mode S DAPs application in the Asia and Pacific Regions taking into account of: <ul style="list-style-type: none"> <li>- Available equipment standards</li> <li>- Readiness of airspace users and ATS providers</li> <li>- Development of standardized and systematic approach to Mode S DAPs application;</li> </ul>	Discussed at this meeting.
5	To develop guidance materials to educate States and airspace users on the use of Mode S DAPs in the Asia and Pacific Regions:	Guidance material to educated States is adopted by SURICG/4. No guidance material for airspace users available yet.
6	To encourage research and development, trials and demonstrations in the field of Mode S DAPs application; and	Research and development activities are being shared in the Working Group.

Appendix H to the Report

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7	Draft Conclusions and Decisions to be formulated relating to matters in the field of Mode S DAPS that come within the scope of the SURICG work plan.	On-going.
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Mode S DAPs WG/3  
Appendix B to the Report

**LIST OF ACTION ITEMS**

No.	Subject	Forum Raised	Status / Target Date	Remarks / follow-up	Action Party
1.	II code coordination process and method	DAPs WG/2	on going	WP provided to DAPs WG/3, and further study is necessary.	China, Malaysia and Singapore
2.	Update DAPs Implementation Status table for APAC region	DAPs WG/2	On-going basis	To update the information in the table as necessary.	Member States
3.	PRF, interrogation pattern coordination	DAPs WG/2	DAPs WG/3/ On going	To prepare working paper under this subject.	Member States
4.	Study of Data Source of DAPs	DAPs WG/2	On going	1. Based on IP05 of DAPs WG/2, to provide a basic and accurate briefing on the avionics systems relevant to DAPs application.  2. Updated to IGD in DAPs WG/3	China
5.	Harmonization with air space users	SURICG/2	On-going basis	Invite avionics manufacturers and airlines to share experience.	Co-chairs and hosting States
6.	Roadmap	DAPs WG/2	Proposed in WG/3	A summary on roadmap is proposed by co-chair and agreed by DAPs WG/3.	Co-chairs, ICAO
7.	Align with APAC Seamless ANS Plan 3.0, GANP 2019 and A40, ANC/13 outcome	DAPs WG/3	DAPs WG/4	As the IGD2.0 and roadmap have been developed, it's necessary to further align the direction and timeline of regional implementation with global guideline by updating the action list, IGD and roadmap.	Co-chairs, ICAO

**LIST OF ACTION ITEMS**

<b>No.</b>	<b>Subject</b>	<b>Forum Raised</b>	<b>Status / Target Date</b>	<b>Remarks / follow-up</b>	<b>Action Party</b>
8.	Empty RA message handling at ATM system	DAPs WG/3	DAPs WG/4	Summarize the experience into appendix 2 "LIST OF IDENTIFIED ISSUES "of IGD.	Republic of Korea, China
9.	Use DAPs data for Weather Forecast	DAPs WG/3	DAPS WG/4	Add new section "9.3 Use DAPs data for Weather Forecast" into IGD	Japan, China

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