

Terms of Reference of Mode S and DAPs Working Group

Working Arrangement of the Mode S and DAPS WG

Membership: The Mode S and 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 and 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 and DAPS WG, the schedule for delivery of the working group shall be 4 +2 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 and DAPS WG shall report to the APANPIRG via the SURICG.

Terms of Reference. See next section.

Term of Reference

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

- 1) Ensure harmonized implementation of Mode S and DAPs in the Asia and Pacific Regions according to Surveillance Strategy adopted by APANPIRG;
- 2) Facilitate the implementation of Mode S and 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 and 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 and DAPs Working Group deliverables (listed in 2 to 7 below);
- 2) To study and identify applicable Mode S and 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-ATM 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 and DAPs performance.
- 3) To identify and develop the regional requirements of Mode S and DAPs capability in the area of aircraft equipage, surveillance systems (focusing on radar) and ATC-ATM automation system, taking into account the relevant performance expectations of the Asia/Pacific Seamless ANS Plan;

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- 4) To develop roadmap for Mode S and 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 and DAPs application.
 - 5) To develop guidance materials to assist States and airspace users (where applicable) on the use of Mode S and DAPs in the Asia and Pacific Regions;
 - 6) To encourage research and development, trials and demonstrations in the field of Mode S and DAPs application; and
 - 7) Draft Conclusions and Decisions to be formulated relating to matters in the field of Mode S and DAPs that come within the scope of the SURICG work plan.

[Note: Mode S and 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, Pakistan, Philippines, Singapore, Sri Lanka, Thailand and Viet Nam, and is led by China and Singapore.

Term of Reference

		Efforts thus far
The Objectives of Mode S and DAPs Working Group are to:		
1	Ensure harmonized implementation of Mode S and DAPs in the Asia and Pacific Regions according to Surveillance Strategy adopted by APANPIRG;	a) Planning of II/SI code assignment in progress. b) Encouraged Mode S forward fit. c) Guidance material on the implementation of DAPs applications in ATM systems is created.
2	Facilitate the implementation of Mode S and 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 draft guidance material.
3	Review, identify and address major issues in technical, operational and regulatory aspects to facilitate the Mode S and DAPs implementation in the Asia and Pacific Regions.	a) Guidance material on measurement of frequency occupancy is created. b) Guidance material to address technical and operational issues is created. c) Guidance material to address regulatory issues is created.
Deliverables to meet the Objectives:		
1	Progress report to be submitted to SURICG addressing the Mode S and DAPs Working Group deliverables (listed in 2 to 7 below);	
2	To study and identify applicable Mode S and 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 ATCATM automation system - Other currently available or emerging technologies; - ICAO Global Air Navigation Plan (GANP) and Aviation System Block Upgrades (ASBU); - Evaluation method for Mode S and DAPs performance.	a) Guidance material on the implementation of DAPs applications in ATM systems is created. b) Means to test and validate DAPs are in the guidance document.
3	To identify and develop the regional requirements of Mode S and DAPs capability in the area of aircraft equipage, surveillance systems (focusing on radar) and ATCATM automation system, taking into account the relevant performance expectations of the Asia/Pacific Seamless ATM Plan;	a) Planning of II/SI code assignment in progress. b) Encouraged Mode S forward fit. c) Guidance material on the implementation of DAPs applications in ATM systems is created.
4	To develop roadmap with a view to formulate mandates for Mode S and DAPs application in the Asia and Pacific Regions taking into account of: - Available equipment standards - Readiness of airspace users and ATS providers - Development of standardized and systematic approach	Road map created.

	to Mode S and DAPs application;	
5	To develop guidance materials to educate States and airspace users (where applicable) on the use of Mode S and DAPs in the Asia and Pacific Regions:	Guidance material to educated States is created. No need for guidance material for airspace users identified yet.
6	To encourage research and development, trials and demonstrations in the field of Mode S and DAPs application; and	Research and development activities are being shared in the Working Group. These include: a) Deriving weather related information from DAPs; b) Detection of BDS swab.
7	Draft Conclusions and Decisions to be formulated relating to matters in the field of Mode S and DAPS that come within the scope of the SURICG work plan.	On going.
