



ICAO

International Civil Aviation Organization

First Meeting of the Surveillance Study Group (SURSG/1)

(Video Teleconference, 20– 22 April 2021)

Agenda Item 3: Review outcomes of relevant meetings

OUTCOMES OF MODE S DAPs WG/4 MEETING

(Presented by Secretariat)

SUMMARY

This paper presents the relevant outcomes of the Fourth Meeting of the Mode S Downlink Aircraft Parameters working group (Mode S DAPs WG/4) held via video Tele-conference from 29 to 31 March 2021.

1. INTRODUCTION

1.1 The Fourth Meeting of the Mode S Downlink Aircraft Parameters working group (Mode S DAPs WG/4) was held via video Tele-conference from 29 to 31 March 2021. The meeting was attended by 99 participants from 18 States/Administration and three International Organizations named EUROCONTROL, IATA and IFATPA. Mode S DAPs WG/4 meeting report, working papers, information papers, and other resources can be accessed by following link:

<https://www.icao.int/APAC/Meetings/Pages/2021-DAPs-WG4.aspx>

1.2 The Mode S DAPs WG/4 meeting noted the outcomes of the relevant meetings of surveillance of CNS SG/24 along with all conclusions and decisions adopted by CNS SG/24 and APANPIRG/31. The meeting noted with appreciation the work done and achievements by the Mode S DAPs WG/3 and the other contributory bodies of surveillance.

1.3 This paper summarized relevant information and updates with the highlight on the reviewed outcomes of Mode S DAPs WG/4 meeting.

2. DISCUSSION

The actions taken by Mode S DAPs WG/4 meeting are highlighted below:

Status of Mode S Interrogator Identifier (II) Codes Coordinated and Registered with ASIA/PAC- Sec (WP/03)

2.1. The ICAO secretariat presented the status of Mode S Interrogator Identifier (II) codes which were coordinated and registered with ICAO APAC Regional Office and urged States/Administrations to provide the required information to ICAO Regional Office for updating the APAC SSR II code list. The meeting was informed by the ICAO secretariat that list of II code can be

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accessed by the point of contact in States on the ICAO secure portal. In case of a revision of II code list, the ICAO Regional Office would issue a State Letter to notify States on the revised list on ICAO secure portal.

Proposals to amend old Conclusions relating to II Codes- China and Singapore (Flimsy/01)

2.2. China and Singapore provided a proposal to amend the three old APANPIRG Conclusions: **Conclusion 19/40** - *Coordination for SSR Mode S Interrogator Identifier Code*, **Conclusion 20/56**- *Coordination for SSR MODE S II Codes*, and **Conclusion 20/57** - *Planning Criteria for SSR Mode S II Code Assignment*.

2.3. The proposed conclusions, which were agreed by the meeting, are:

Draft Conclusion DAPs WG/4/1 - Coordination Process for SSR Mode S Interrogator Code (IC)	
<p>What: That,</p> <p>a) in view of the increasing density of SSR interrogator installations in the region, and that States have varying readiness to extend from Interrogator Identifier (II) to both Interrogator Identifier and Surveillance Identifiers (SI) codes, there will be a period whereby both II and SI will be used.</p> <p>b) while implementing SSR Mode S, States should take into account following issues while assigning IC for these installations:</p> <ul style="list-style-type: none"> • for planning the implementation of SSR Mode S interrogators, administrations should ensure that the interrogators with overlapping coverage are not operating with the same IC. • where, the coverage of the interrogator extends beyond the boundaries of the State, The IC should be worked out in coordination with the ICAO Asia and Pacific Office and the neighboring States, and • administrations should inform the ICAO Asia and Pacific Office about the assigned IC for these installations. 	<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global</p> <p><input checked="" type="checkbox"/> Inter-regional</p> <p><input type="checkbox"/> Economic</p> <p><input type="checkbox"/> Environmental</p> <p><input checked="" type="checkbox"/> Ops/Technical</p>
<p>Why: Due to higher density of radars, some states are facing a shortage of II codes. It has to be solved by transiting from II to SI code. It is noted that state may use a mixture of II and SI codes before complete migration to SI code. However, States still have to coordinate with ICAO APAC Regional Office on the allocation of II codes and SI codes.</p>	<p>Follow-up: <input checked="" type="checkbox"/> Required from States</p>
<p>When: 27-Aug-21</p>	<p>Status: Draft to be adopted by PIRG</p>
<p>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</p>	

Draft Conclusion DAPs WG/4/2 - Coordination requirements for SSR Mode S Interrogator Code (IC)	
<p>What: That,</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global</p>

<p>States be advised to provide the following information on SSR Mode S Interrogator Code to the ICAO Asia/Pacific Office for coordination and registration.</p> <ul style="list-style-type: none"> a) Name of country/territory and location of facility; b) Antenna Coordinates (Latitude and Longitude); c) Elevation of antenna above the Mean Sea Level (MSL) in meters; d) Maximum Coverage of SSR Mode S Interrogator in nautical mile; e) II Code (1 to 15) or SI Code (1 to 63); and f) Remarks (special configuration such as radar clustering, lockout override, II/SI mode capability) 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
<p>Why: The assignment of interrogator codes (IC), where necessary in areas of overlapping coverage, across international boundaries of flight information regions, shall be the subject of regional air navigation agreements. States have to coordinate with ICAO APAC Regional Office on the allocation of IC codes (II codes and SI codes).</p>	<p>Follow-up: <input checked="" type="checkbox"/> Required from States</p>
<p>When: 27-Aug-21</p>	<p>Status: Draft to be adopted by PIRG</p>
<p>Who: <input 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</p>	

<p>Draft Conclusion DAPs WG/4/3- Planning Criteria for SSR Mode S Interrogator Code (IC) Assignment</p>	
<p>What: That,</p> <ul style="list-style-type: none"> a) The planning criteria for SSR Mode S IC coordination and assignment as provided in Appendix J of Doc 9924 (Third Edition, 2020) be adopted for use in the Asia/Pacific Region. 	<p>Expected impact:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
<p>Why: The planning criteria for SSR Mode S IC coordination and assignment has been revised.</p>	<p>Follow-up: <input type="checkbox"/> Required from States</p>
<p>When: 27-Aug-21</p>	<p>Status: Draft to be adopted by PIRG</p>
<p>Who: <input 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</p>	

2.4. The meeting noted that current Doc 9924 did not provide the method on the mixture of II and SI code allocation. There is a need to add some material into the current edition of Doc 9924 if APAC region implements a mixture of II and SI. The Chairperson of DAPs WG and the ICAO secretariat will approach to Surveillance Panel about the addition of SI code allocation criteria into Doc 9924.

Guidance Material for Assignment of Interrogator Codes (IC) for MLAT and ADS-B -Singapore (WP/04)

2.5. The assignment of ICs is to be coordinated within regions by centralised coordinating bodies (e.g. EUROCONTROL for Europe and ICAO APAC for the case of Asia-Pacific). Current practices suggested that II=0 can be used. However, the existing provision in ICAO documents is not clear to the reader and can be confusing. The Surveillance Panel Aeronautical Surveillance Working

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Group is working on revising the text in the SARPS and guidance material. The paper gave a preview on the proposed improved text. It was proposed that amendments be made to show that there is no need of coordination for interrogators not using lockout or multisite datalink protocols. Coordination of IC codes may help aid understanding of RF contribution.

2.6. The meeting was further informed that Section 4 of Appendix M of Doc 9924 states that a Multilateration system is a passive system but it may use interrogations to achieve a certain level of performance. The document however does not mention the code to be used. The paper proposed the text to be improved.

Strategy to migrate to SI codes- China and Singapore (WP/07)

2.7. China and Singapore proposed the strategy for the Asia Pacific region to migrate from II to SI codes. Europe employed a special mode of operation known as the II/SI Operation. Under this mode, the radar will only issue lockout command to SI capable transponders leaving non-SI transponders to reply to further all-calls. China is facing a shortage of II codes for assignment because of its high density of radars. Other places are also facing high density of radars and there may be a shortage of II codes in the future.

2.8. The paper proposed two options:

- a) Option 1: All States in Asia Pacific to switch from II to SI code (using II/SI mode) on a fixed date.
- b) Option 2: States to transit from II to SI (using II/SI mode) individually.

2.9. A draft conclusion was agreed and formulated by the meeting as following:

Draft Conclusion DAPs WG/4/4 - Transition from II code to SI code	
What: States with Mode S radar capable of performing II/SI mode operations are encouraged to transit from II code to SI code, so as to ease the shortage of II codes. States planning to perform the transition shall coordinate with ICAO APAC Regional Office to obtain the SI codes.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input checked="" type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: Due to higher density of radars, some states are facing a shortage of IC codes, which has to be solved by transiting from II to SI code. It is noted that radars using II and SI codes can co-exist, hence there is no need for a big bang approach. However, States still have to coordinate with ICAO APAC Regional Office on the allocation of SI codes.	Follow-up: <input type="checkbox"/> Required from States
When: 27-Aug-21	Status: Draft to be adopted by PIRG
Who: <input 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	

2.10. The meeting also noted challenges for ICAO APAC Regional Office in supporting the mixed II and SI operation due to restriction of resources. It was proposed to create an ad-hoc group to study the migration from II code to SI code schemes and strategies for APAC.

Research on Mode S Interrogator Codes(IC) extend to Surveillance Codes (SI) in China- China (WP/10)

2.11. China shared the information about the investigation of SI transponders' current situation in relevant airspace, the test of Mode S radars' capability and the preliminary research on mechanism of II and SI code allocation. At present, China is considering the allocation mechanism of Mode S interrogator II and SI codes for all radars. China is trying to allocate all the other unallocated II and SI codes reasonably based on the minimum adjustment to the servicing radars allocated II codes. Based on the results of this study, China will re-plan the allocation of II and SI codes for all radars in service.

Mode S radar deploying strategy adjustment- Australia (WP/13)

2.12. Australia informed that Australia has adopted the European Region practice for the allocation of Mode S Interrogator Codes. This practice reserves Interrogator Identification (II) 14 for test, research and development of Mode S Radar and II 15 for military deployable and shipborne radar. Australia proposed that Asia Pacific States adopt the practices of the European Region and Mid East Region for the allocation and management Interrogator Codes (IC) inclusive of Interrogator Identification (II) codes and Surveillance Identifier (SI) codes, and reserve II code 14 and matching SIs for research and testing, and delegate allocation and management of II code 15 and matching SIs to State military agencies for deployable and shipborne radars, to remain consistency with European and Mid East Regions and provide flexibility for testing, research and military activities.

2.13. The meeting was suggested to study this reallocation and to check if II code 14 and 15 can be reserved. It was proposed to add the task (allocation of II code 14 and 15 for specific purposes as discussed in WP/13) into tasks list of the ad-hoc group proposed to study the migration from II code to SI code schemes and strategies for APAC.

The need to strengthen the IC allocation coordination between EUROCONTROL MICA Cell and ICAO APAC Regional Office- EUROCONTROL (P/01)

2.14. EUROCONTROL MICA Cell coordinates the allocation of IC to civil and military Mode S radar, with a fixed position, in the ICAO European region on behalf of the ICAO European Regional Office and supports the ICAO Middle-East Regional Office for Mode S Interrogator Code allocation in the ICAO Middle-East region. Mode S radars are deployed in ICAO regions adjacent to the EUR Region, including Asia and Pacific (APAC), Eastern and Southern Africa (ESAF), and Western and Central Africa (WACAF). Two Mode S radars from two adjacent ICAO regions may have overlapping coverage. Therefore, Inter-regional coordination is necessary to avoid IC conflict between Mode S radars.

2.15. The meeting noted the centralized process applies to the coordination of the allocation of interrogator codes to Mode S radars in the ICAO European region and in the ICAO Middle-East region. The meeting also noted the need to strengthen the IC allocation coordination between EUROCONTROL MICA Cell and the ICAO APAC Regional Office.

Mode-S RADAR SI operation test result- ROK (IP/07)

2.16. ROK presented the test result about the Mode-S radar SI code operation. ROK concluded that by using the analytical method to radar recordings, Incheon airport could identify several MSSR detection issues. ROK suggested that it is very preferable that each ANSP (Air-navigation service provider) regularly review the performance of their surveillance system with an analysis software to maintain a detection capability and to find a new detection issue about a radar.

Analysis of incorrect RA code on Mode S RADAR- China (IP/03)

2.17. China presented the incorrect RA (Resolution Advisory) code of Mode S radar that resulted in the wrong RA warning in the ATM automation system, and shared the result of investigation and analysis. In 2020, the ATC department of Beijing Capital International Airport reported several RA

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warnings prompted by the ATM automation system that the aircraft did not generate TCAS warning after verifying with the crew.

2.18. China analyzed the raw data of Mode S radar and two anomalies were found. China proposed short-term improvements as the new type Mode S radar (Thales radar RSM970s DP16.01) at Beijing Daxing International Airport, which can process the incorrect data after BDS swap. As medium and long-term solutions, it was suggested to realize the "overlay control" function for which both the aircraft transponder and radar needed to be upgraded. Furthermore, it was suggested when BDS3,0 is added to the radar request list, it is necessary to evaluate whether the radar can identify and handle BDS swap problems, to avoid anomalies to the ATM automation system. It was suggested to upgrade the earlier version of Mode S radar to solve the problem of BDS swap.

Analysis of false SFL mismatch alarm in ATM automation system- China (IP/04)

2.19. China described the phenomenon and impact of false SFL mismatch alarm in the ATM automation system, analyzes the causes of false SFL mismatch alarm, and proposes corresponding control measures in Mode S radar and automation system respectively. There are two aspects of methods to reduce the false SFL mismatch alarms: Mode S radar deploying strategy adjustment and Mode S radar interrogation strategy adjustment. For ATM automation systems, the processing logic of the SFL mismatch alarms could be improved. If there are multiple data sources for the aircraft's BDS code 4.0, add a multi-data sources confirmation mechanism. In the case that there is only a single data source for the aircraft's BDS code 4.0, a multi-period confirmation mechanism.

ICAO'S guidance on measurement of 1030/1090 MHz usage- Singapore (WP/08)

2.20. Singapore presented guidance material on the monitoring of the 1030 and 1090 MHz frequency occupancy. During the SURICG/5, it was discussed that there is a need to ascertain the status of the 1030 and 1090 MHz frequency occupancy. In locations where the frequency occupancy is high, there may be a need for regular monitoring. It was proposed that the text in Annex A of the working paper be included in the Mode S DAPs Implementation and Operation Guidance Document. China supported the inclusion of the material in Annex A into the Mode S DAPs Implementation and Operation Guidance Document.

Management of 1030/1090 MHz Utilization- Singapore (IP/05)

2.21. Singapore presented the works that is being undertaken by the Surveillance Panel to manage the 1030/1090 MHz utilization. The utilization of the 1030/1090 MHz frequencies has greatly increased in certain areas of the world. If no action is taken, the situation will reach an unacceptable level that will result in harmful corruption or loss of information to the aeronautical surveillance and collision avoidance systems. It is unclear whether there are frequency congestions occurs in various parts of Asia Pacific (pre-COVID). States are urged to follow the guidance, SARPs, and guidance materials produced to keep the frequency utilization healthy.

Introduction to the Experiment of 1090 MHz Occupancy at two busy Airports in China- China (IP/06)

2.22. China presented the methods and results of the 1090 MHz occupancy experiment conducted around the Beijing Capital Airport and Chengdu Airport. China explained two different experimental methods by calculating the pulses duration and silence duration and by using Rohde & Schwarz (R/S) FSVR real-time spectrum analyser and IQR recorder to build an RF recording system and record 1090 MHz signals. It was said that the 1090 MHz occupancy is not high, the longer the receiver's distance was, the more serious the garbling was. At Chengdu airport the Mode A/C replies account for 41%, the short Mode S replies account for 16%, the long Mode S replies account for 18%, and the rest 25% were the signals that cannot be decoded. Without increasing the overall occupancy of 1090 MHz, there were many interference pulses.

Revised Roadmap for Mode S DAPS- China and Singapore (WP/05)

2.23. This paper proposed a revised roadmap. Considering the evolving and complex nature of Mode S related technology, roadmap was recommended for some of the previously discussed topics.

Mode S Mandates

2.24. It was originally proposed that for a forward fit of Enhanced Mode S by 1 Jan 2022 and retrofit of Elementary Mode S by 1 Jan 2022. Minimally for aircraft with a mass >5700kg or a speed >250kt. considering the difficulty faced by airlines, the proposal was later amended by SURICG/5 to just a forward fit of Enhanced Mode S by 1 Jan 2022. Minimally for aircraft with a mass >5700kg or a speed >250kt. This proposal was subsequently adopted by APANPIRG/31.

Use of SI Codes

2.25. ICAO APAC is currently reviewing whether there is a need to use SI codes. It is noted that for SI code to be used, the Mode S transponders has to be support SI code. Two strategies were proposed: Option 1: All States in Asia Pacific to switch from II to SI code (using II/SI mode) on a fixed date or Option 2: States to transit from II to SI (using II/SI mode) individually (preferred).

Radar Clustering

2.26. The potential advantages of clustering are the use of a single IC (thus reducing the pressure on demands for ICs) and for the potential reduction in all-call FRUIT. The main limitation of clustering is that it adds complexity (& hence cost) to the overall system design and requires additional management functionality for control and co-ordination. Due to the complexity, no roadmap is proposed for this topic. However, States with capability may adopt radar clustering and share the experience with other States.

Use of Conspicuity Code

2.27. In most ATM systems, Mode A is the primary means for flight plan coupling. Due to limited number of Mode A addresses, there may not be sufficient unique Mode A addresses to be allocated to the flights. APAC currently still assigns Mode A codes. In anticipation that Mode S codes would be used in future, it was agreed that the Mode A code of 1000 be reserved as the conspicuity code for APAC so as to match EUR. It is proposed that the roadmap for the ATM systems to be decided by the ATM AS TF.

Mandating Weather Reporting Capability

2.28. Only less than 1% of aircraft provide the data via BDS 4,4 (Wind Speed, Wind Direction, Temperature) and BDS 4,5 (Temperature, Turbulence). There are currently no service bulletins that will help upgrade aircraft with such capability. There is also currently no plan to develop such upgrades. It is envisaged that weather-reporting capability will be available in the next generation transponder. Instead of mandating weather-reporting capability, it may be more practical to wait for the next generation transponder. Weather information may be derived using algorithms.

Datalink Map

2.29. Due to very high usage of the 1090 MHz frequency, in order to prevent States from over interrogating, Europe has a datalink map, which restricts the registers that States can extract from. Europe even have rules stating that Mode S radars should not actively interrogate for Mode A and Flight ID unless there is a change. USA does not have such a map, as USA do not make use of DAPs. The datalink map is difficult to enforce. The coordination efforts may be much higher than the benefits, with

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no certainty of success. Instead of implementing datalink map, States are urged to adopt the related SARPs and guidance material relating to reduction of frequency congestion.

Monitoring of 1030 and 1090 MHz usage

2.30. It is unclear whether parts of Asia Pacific are facing 1030/1090MHz congestion. It is proposed that States with the capability measure the frequency occupancy. To facilitate such measurement, guidance material is proposed. If the RF occupancy were high, there would be a need for regular monitoring.

2.31. The Meeting was informed that conspicuity code assignments are based on regional agreement. It was further informed that ATM Sub Group has already adopted to reserve Mode A code 1000 as conspicuity code by the Conclusion ATM/SG/6-3: Proposed Air Navigation Plan Volume II Amendment. It was further informed it has been already included into the regional Air Navigation Plan (ANP), Volume II, Part IV – Air Traffic Management (ATM), under section 3. *Specific Regional Requirements* and regional agreement have been updated accordingly.

2.32. The meeting further formulated the following draft Conclusion for consideration by SURICG/6 meeting:

Draft Conclusion DAPs WG/4/5 - The APAC Regional Roadmap for Mode S Implementation	
What: That, the APAC Regional Roadmap for Mode S Implementation provided in Appendix A to the Report be adopted.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input checked="" type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: The revised Roadmap defined the scope and rational steps for the implementation of Mode S in APAC region.	Follow-up: <input type="checkbox"/> Required from States
When: 27-Aug-21	Status: Referred back to WG/TF
Who: <input 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	

Proposed deferral of EHS Mode S forward-fitment mandate- IATA (WP/14)

2.33. This paper originally proposed a deferral of the forward-fit mandate for Mode S (adopted by APANPIRG/31) due recent advice that some States would not be utilising (Enhanced) EHS capabilities, and the possible additional costs to airlines without benefit in that case.

2.34. The meeting was informed that Europe has already mandated EHS Mode S forward fitment and retro fitment with effect from 7 Dec 2020. Furthermore, the conclusion APANPIRG C 31/14 asked about forward fitment only. If aircrafts do not apply forward fitment, it may be costlier for them to retrofit in future. Therefore, the meeting did not agree to accept the draft conclusion proposed by IATA. However, on the request of IATA, the meeting agreed that the ICAO secretariat will conduct a survey with APAC states to request the information about the current use and future planning of EHS modes in respective states along with challenges and difficulties faced by states in implementing APANPIRG conclusion C 31/14.

Suggestion of including ADS-B DAPS in DAPS IGD- China (WP/11)

2.35. China suggested to include ADS-B DAPs in DAPs IGD and described the aircraft parameters in ADS-B DAPs, the reasons for the suggestion, and other related issues. The DAPs IGD

(edition 2.0) has included the related technologies and applications of the Mode S SSR DAPs registers. It was suggested that technologies and applications related to ADS-B DAPs should also be included in the DAPs IGD. Recommended modifications include ADS-B DAPs description, ADS-B DAPs application, and DAPs extraction strategy optimization under the hybrid operation of Mode S radar and ADS-B, etc. Singapore supported the proposal from China to include ADS-B DAPs into DAPs IGD. The meeting adopted the proposal from China to include ADS-B DAPs into the Mode S DAPs Implementation and Operations Guidance Document.

Updates to the Mode S DAPS Implementation and Operations Guidance Document- China and Singapore (WP/12)

2.36. China and Singapore presented the revised draft (Edition 3.0) of the Mode S DAPs Implementation and Operations Guidance Document, which was developed based on the adopted edition 2.0 for consideration and endorsement by the meeting. China and Singapore summarized the main amendments to this edition such as compiling the preface of the guidance document, proposing the advice to mandating Mode S transponder, supply descriptions of other protocols for DAPs extraction, revise the descriptions of the use of parameters in the ATM automation system, addition of two examples of Mode S DAPs application and three identified issues, addition of information of Mode S radar parameter set, etc. The document was provided in Appendix A to the working paper.

2.37. The meeting formulated the following draft Conclusion for consideration by SURICG/6 meeting:

Draft Conclusion DAPs WG/4/6 - Mode S DAPs IGD 3.0	
What: That, the <i>Mode S DAPs Implementation and Operation Guidance Document</i> Edition 3.0 provided in Appendix 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: 27-Aug-21	Status: Referred back to WG/TF
Who: <input 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	

2.38. The meeting agreed that states will informed about any editorial and non-substantial changes into the IGD to China within two weeks.

Publishing of APAC SAC in EUROCONTROL Website and the Management of APAC SIC- Singapore (WP/09)

2.39. EUROCONTROL published the System Area Codes (SAC) for the various regions except for Asia Pacific. Singapore discussed the considerations to publish the Asia Pacific SAC at the EUROCONTROL website. ASTERIX format, developed by EUROCONTROL, is the most common way to exchange surveillance data. The EUROCONTROL website also lists the other regions (i.e. South America & Caribbean, USA & Canada, African Region and Middle East). However, the SAC/SIC codes in Asia Pacific is not listed in the EUROCONTROL website. The meeting formulated the following draft conclusion to be considered by the SURICG/6 meeting:

Draft Conclusion DAPs WG/4/7 - Updating EUROCONTROL on SAC allocation	
What: ICAO APAC Regional Office to update EUROCONTROL with the latest SAC allocation within Asia	Expected impact: <input type="checkbox"/> Political / Global

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Pacific.	<input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: EUROCONTROL published the SAC for all the regions except Asia Pacific. It be believed that the publication will be beneficial to the developers of future message protocol and surveillance related applications.	Follow-up: <input type="checkbox"/> Required from States
When: 27-Aug-21	Status: Draft to be adopted by PIRG
Who: <input 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	

2.40. ICAO APAC currently manages the SAC allocation for the Asia Pacific States. ICAO APAC also keeps track of the SIC allocation for the individual surveillance sources within the States. SIC may be changed frequently and it will be onerous to both the States and ICAO to ensure that the list maintained by ICAO is kept up to date. The meeting formulated the following draft conclusion to be considered by the SURICG/6 meeting:

Draft Decision DAPs WG/4/8 - Removal of the need for ICAO APAC to keep track of SIC allocation	
What: ICAO APAC Regional Office to coordinate the allocation of SAC within Asia Pacific and not the SIC.	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: SIC is managed by State and there is little value for ICAO APAC to manage the SIC. Considering the workload to manage the SIC and the negligible benefits, it is proposed that ICAO APAC not to manage SIC.	Follow-up: <input type="checkbox"/> Required from States
When: 27-Aug-21	Status: Draft to be adopted by PIRG
Who: <input 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	

Review of Terms of reference and Action Items-Sec (WP/06)

2.41. The Mode S DAPs WG/4 discussed about the future of the group. China proposed to continue the group for one more year in order to complete the action items and add ADS-B DAPs into Mode S DAPs IGD. The ICAO secretariat supported the position of the meeting to increase the term of the group for one more year. The meeting reviewed the Terms of Reference accordingly, proposed minor editorial changes to the TOR, and included Pakistan as a new member.

2.42. The meeting was invited to update the table for DAPs Implementation Status in the APAC Region uploaded on meeting webpage and send to APAC office within one week.

Election of co-chairs for next term

2.43. Mr. Ho Wee Sin and Mrs. Xie Yulan were elected as new co-chairs of DAPs working group for next tenure.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the outcome of the Mode S DAPs WG/4; and
- b) discuss any matters as appropriate.
