International Civil Aviation Organization

Twenty Fifth Meeting of the Communications/ Navigation and Surveillance Sub-group (CNS SG/25) of APANPIRG

Video Tele-Conference, 18 – 22 October 2021

Agenda Item 2: Review outcomes of APANPIRG/RASG Chairpersons review, APANPIRG/31 meeting, ATM Sub-group and other major meetings relevant to CNS Sub-group

AIR TRAFFIC MANAGEMENT AND AIRSPACE SAFETY MONITORING OUTCOMES

(Presented by the Secretariat)

SUMMARY

This paper presents key outcomes from the technical working groups established under the oversight of the Air Traffic Management and Regional Airspace Safety Monitoring Advisory Sub-Groups of APANPIRG, and other information relevant to CNS Sub-Group.

1. INTRODUCTION

1.1 The Ninth Meeting of the Air Traffic Management Sub-Group of APANPIRG (ATM/SG/9) is scheduled to be held from 01 to 05 November 2021. ATM/SG/9 will consider outcomes relevant to CNS SG from the following meetings:

- The Combined Tenth Meeting of the South Asia – Indian Ocean ATM Coordination Group (SAIOACG/10) and Twenty-Seventh Meeting of the South East Asia ATS Coordination Group (SEACG/27) 29 March to 02 April 2021;
- The Sixteenth Meeting of the Aeronautical Information Services (AIS) – Aeronautical Information Management (AIM) Implementation Task Force (AAITF/16, 07 to 11 June 2021); and
- The Eleventh Meeting of the Air Traffic Flow Management Steering Group (ATFM/SG/11, 02 to 06 August 2021);

1.2 The Twenty-Sixth Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/26) was held by video teleconference from 20 to 23 September 2021. RASMAG, being the responsible APANPIRG Sub-Group, also considered the activities of the Eleventh Meeting of the Future Air Navigation Services (FANS) Interoperability Team – Asia (FIT-Asia/11, 23 to 26 August 2021).

1.3 A summary of ICAO global UAS activities is also provided.

2. DISCUSSION

SAIOACG/10 and SEACG/27

Relevant Meeting Outcomes

2.1 In discussing the outcomes of the CNS SG/24 meeting, the combined SAIOACG/10 and SEACG/27 meeting responded to a query on the most appropriate Interface Control Document (ICD) for ATS Inter-Facility Data Communication (AIDC). After offline coordination ICAO informed the meeting that, while both the *Asia/Pacific Regional ICD for AIDC* (2007) and the *Pan-Regional (NAT and APAC) ICD for AIDC* (PAN AIDC ICD, 2014) remained valid documents, the *AIDC Implementation and Operations Guidance Document Edition 1.0* (July 2017) included multiple cross-references to the PAN AIDC ICD and therefore this document would be the most appropriate to use.

2.2 The CNS SG/25 meeting is therefore invited to consider whether there may be a need to rationalize the available regional guidance documents for AIDC.

Application of ATC Separation Minimums

2.3 ICAO presented information to SAIOACG/10 and SEACG/27 on the survey conducted to determine which ATC separation standards were being applied within the Asia/Pacific Region, in accordance with the provisions of the *Asia/Pacific Seamless ANS Plan*.

2.4 **Figure 1** provides an indication as at March 2021 of the efficiency of ATC spacing between aircraft at the same level as it was theoretically being applied inbound at FIR TOC points.

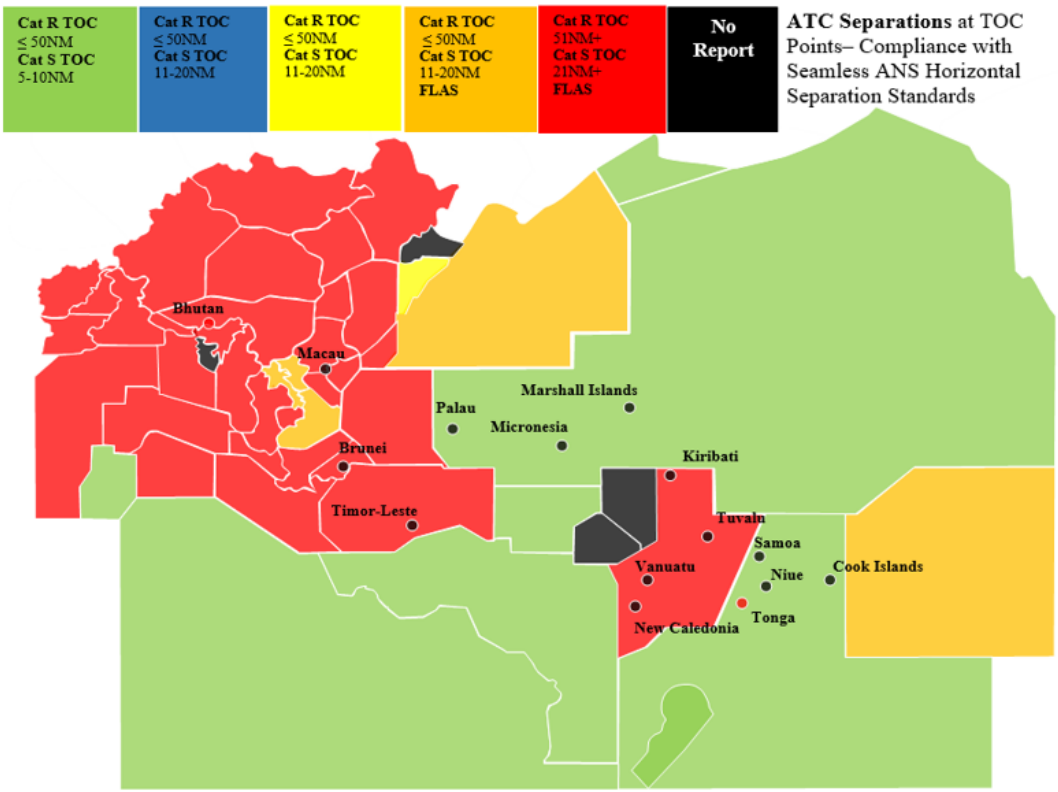

Figure 1: ANS Horizontal Spacing at Inbound FIR TOC points, March 2021

2.5 Except for Male FIR (Maldives), according to the survey, no Asian States were adhering to the TOC spacing expected inbound to their FIRs in accordance with the *Asia/Pacific Seamless ANS Plan*, despite the largely modernised ATC surveillance and communication systems available.

2.6 In contrast to the TOC points results, many more Asian States and Administrations had been applying the recommended separation minimums within their FIR(s) (**Figure 2**).

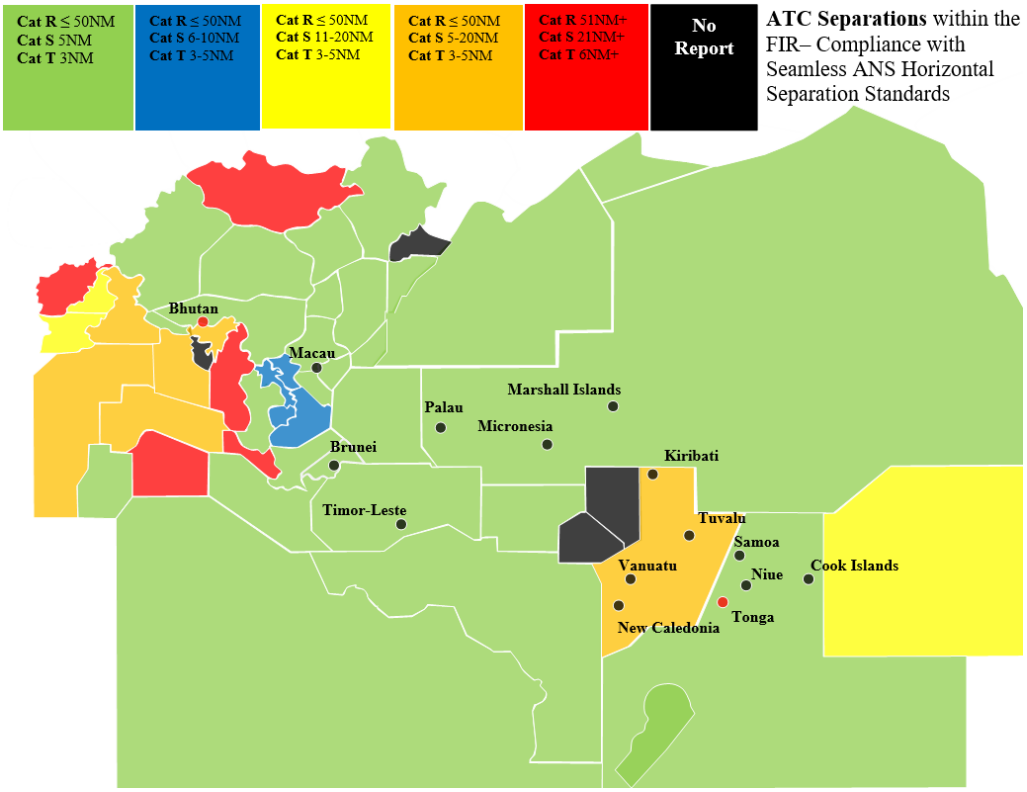

Figure 2: Horizontal Separation Minimums within the FIR, March 2021

2.7 The meeting noted that human decision-making at management level could be responsible for these poor results, indicating a region-wide paradigm shift in organisational culture was necessary. Asian States in particular were urged to recognise the problem and establish policies, rules and procedures for Air Navigation Service Providers (ANSPs) as part of their review of the State's National Air Navigation Plan (NANP) to greatly improve the benefits from modern CNS/ATM systems, including training for senior managers to recognise the gap between current practice and best practice.

2.8 The meeting noted that ICAO intended to circulate a new survey at the end of the year, requesting all States and Administrations to provide the minimum separation at every TOC point for their FIR/s. ICAO Regional Office would develop the chart for TOC separation according to the number of TOC points that did not meet the recommended minimum separation standard.

2.9 Noting also the need to support airlines' recovery from the severe financial losses caused by the COVID-19 pandemic and the suitable low traffic environment, the meeting agreed to the following Draft Conclusion for consideration by ATM/SG/9:

Draft Conclusion SAIOACG/10 and SEACG/27-1: Implementation of Efficient ATS Horizontal Separations and Transfer of Control Aircraft Spacing

That, given the global priority to support airlines' recovery from the unprecedented negative economic consequences of the COVID-19 pandemic and the suitable low traffic environment:

a) States/Administrations are strongly urged to review and update their National Air Navigation Plans (NANPs) to ensure that Air Navigation Service Providers (ANSPs) fully implement the horizontal separation and aircraft spacing elements in the Asia/Pacific Seamless ANS Plan V3.0; and

b) ICAO considers the need for seminars, workshops and other educational material to support this implementation.

2.10 CNS SG/25 is invited to discuss and endorse the Draft Conclusion.

2.11 The results of a more recent survey of the application of ATM separation minimums will be presented to ATM/SG/9.

Missing Departure (DEP) Messages

2.12 ICAO provided an update on the issue of missing Departure (DEP) messages, as discussed by the Air Traffic Flow Management Steering Group (ATFM/SG) and presented to ATM/SG/7 in August 2019.

2.13 The meeting was reminded of ***Conclusion APANPIRG/27/12: Origination and Distribution of Departure (DEP) Messages***, initiating and analysis and response to State failure to ensure correct transmission of DEP messages, and ***Conclusion ATM/SG/7-5: ATS Message Reception and Handling***, urging States to ensure compliance with ATS message addressing requirements of ICAO Doc 4444 – *Procedures for Air Navigation Services – Air Traffic Management* (PANS-ATM).

2.14 The meeting was provided with a summary of non-compliant addressing requirements published in online Aeronautical Information Publications (AIPs) in the Asia/Pacific Region (**SAIOACG/10 and SEACG/27 WP/06 Attachment A**), and informed that ICAO would continue to encourage improved compliance with PANS-ATM provisions.

2.15 Data from an analysis of missing DEP messages conducted in 2019 (**SAIOACG/10 and SEACG/27 WP/06 Attachments B and C**) highlighted the poor performance of non-APAC States in this regard, most notably but not limited to Bahrain, France, Germany, Kuwait, Qatar, Russia, Saudi Arabia, Turkey, UAE and United Kingdom. The data indicated that, while there had been some improvement in the Asia/Pacific Region, there were still a number of States that needed to take further action to address the issue. Current APANPIRG Air Navigation Service (ANS) Deficiencies in this regard were currently recorded against Bangladesh, India, Malaysia, Maldives, Nepal and USA.

2.16 Due to the substantial reduction in international air traffic resulting from the COVID-19 pandemic an APAC regional analysis had not been conducted in 2020. However, Thailand continuously monitored non-receipt of DEP messages for flights entering the Bangkok (VTBB) FIR, and provided data up to February 2021. **Table 1** summarizes non-receipt of DEP messages for flights originating in the FIRs of SAIOACG/SEACG participant States and entering VTBB FIR for the six months ending in February 2021.

Originating State	**SEP 2020**	**OCT 2020**	**NOV 2020**	**DEC 2020**	**JAN 2021**	**FEB 2021**	**TOT %**
Afghanistan			2/2				**100**
Bangladesh	67/107	68/100	19/83	24/97	34/100	40/112	**42**
Bhutan	3/9	1/9	0/13	1/10	0/8	1/8	**10**
Brunei Darussalam	1/5	1/8	0/6	0/8	0/6	0/4	**5**
Cambodia	9/157	3/183	2/165	3/169	2/147	0/124	**2**
China	0/390	0/342	1/382	1/487	2/473	4/356	**< 1**
India	51/175	35/191	38/227	28/233	43/224	52/233	**19**
Indonesia	9/67	6/68	8/78	8/100	6/101	6/96	**8**
Lao PDR	2/21	0/29	1/31	1/18	0/21	0/15	**3**
Malaysia	41/227	47/253	51/234	36/236	39/240	29/200	**17**
Maldives	0/2	2/11	2/6	0/9	0/7	3/10	**15**
Myanmar	2/149	13/131	3/170	5/141	4/146	1/86	**3**
Nepal	0/34	0/53	0/36	0/24	0/45	1/43	**< 1**
Pakistan	0/8	1/9	0/9	2/8	3/9	0/6	**12**
Philippines	6/364	11/371	8/412	8/435	8/477	2/385	**2**
Singapore	1/315	2/392	2/408	2/371	2/405	1/328	**< 1**
Sri Lanka	0/43	0/47	0/67	1/83	1/77	0/57	**< 1**
USA	4/5	4/5	7/15	2/15	0/22	1/11	**24**
Viet Nam	2/252	3/317	21/383	7/317	0/295	1/230	**2**

Table 1: Non-receipt of DEP Messages for Flights Entering the Bangkok FIR per Originating State – September 2020 to February 2021

2.17 The meeting is invited to note that AFS outages and delivery delays also contribute to missing DEP and other ATS messages.

Mode S Conspicuity Code

2.18 An update was provided on developments in the identification of a Mode Select (Mode S) Conspicuity Code for the Asia/Pacific Region.

2.19 The SAIOACG/10 and SEACG/27 meeting was informed that, in accordance with ***Conclusion ATM/SG/6-3: Proposed Air Navigation Plan Volume II Amendment***, a PfA had been circulated and subsequently Regional Air Navigation Agreement was reached. Accordingly, a Specific Regional Requirement was now included in the Air Navigation Plan (ANP) Volume II, reserving Secondary Surveillance Radar (SSR) Mode A Code 1000 for use as the Conspicuity code for Mode S-equipped aircraft operating in airspace under Mode S surveillance, where Aircraft Identification (Flight ID) was used for unambiguous ATC identification of aircraft, and to enable coupling of the ATS surveillance system information with the flight plan. Code A1000 had been removed from the Codes Allocation Plan of the Asia and Pacific Regions.

2.20 In its 2019 update the Asia/Pacific Seamless ANS Plan also included, in a note to element 7.27 (ATS Surveillance), the expectation that ATC units operating within controlled airspace wholly served by Mode S SSR and/or ADS-B surveillance should implement the use of the standard non-discrete Mode A code 1000 for Mode S transponder equipped aircraft to reduce the reliance on assignment of discrete Mode A SSR codes and hence reduce the incidence of code bin exhaustion and duplication of code assignment.

2.21 Referring to a query on the setting of Code A1000 in aircraft transponders, ICAO noted that this should only be expected in airspace and/or at aerodromes that were part of a coordinated project implementing Mode S SSR and/or ADS-B surveillance, for aircraft that were Mode S SSR and/or ADS-B equipped. The ATM automation system in such projects would detect the aircraft identification from Downlinked Aircraft Parameters in the Mode S SSR reply or ADS-B downlink, and would couple the surveillance track to the flight plan on this basis. If an aircraft operating outside such an environment or without Mode S SSR equipage squawked code 1000 then the current procedures for ATC instructing pilots to squawk an assigned discrete Mode A code would continue to apply.

Progressing with Implementation of PBN Routes in Preparations for Post COVID-19 Recovery

2.22 Singapore provided the meeting with the benefits of implementing Performance-based Navigation (PBN) routes to enable the reduction in separation minima, increasing the capacity of ATS routes, maximising the use of airspace, as well as providing enhancements to safety.

2.23 The meeting was updated on the various PBN initiatives (**Figure 3**) that Singapore had embarked on, which had been presented and agreed at the previous ICAO meetings. The initiatives included the progress to upgrade PBN specifications of existing ATS routes M767 and N884 to RNP 4 in cooperation with the Philippines, phased introduction of PBN specifications on ATS route M768 starting from RNP 10 with Indonesia, Malaysia, and Viet Nam, and designating ATS routes L642 and M771 to RNAV 2 with Viet Nam.

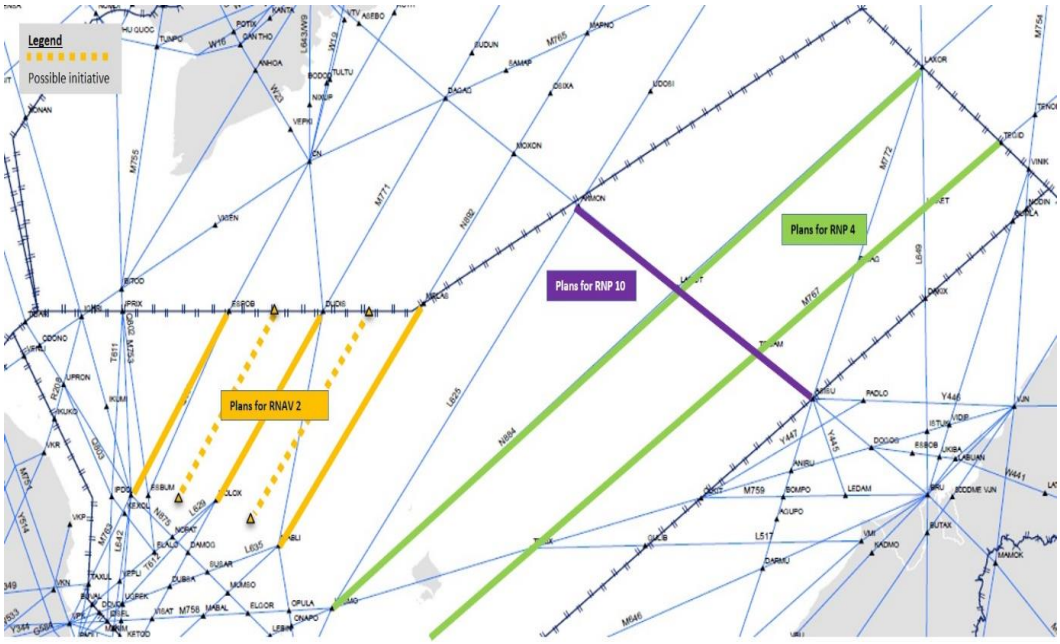

Figure 3: Singapore PBN Initiatives

2.24 While APAC Region had been making good progress for PBN implementation, more could be done by ANSPs. Singapore emphasized the importance of coordination amongst States to implement harmonised PBN specifications across FIR boundaries and encouraged the meeting to strengthen its efforts in preparation for post COVID-19 recovery.

AAITF/16

2.25 The AAITF/16 meeting was provided with updated information on the applicability of changes to SNOWTAM to include all elements of runway condition reported under the Global Reporting Format (GRF) for runway surface condition reporting. ICAO State Letter 2020/73 dated 30/07/2020 had notified ICAO Member States that the ICAO Council had, on 19 June 2020 adopted amendments on the postponement of the applicability date, from 05 November 2020 to 04 November 2021, for provisions related to the enhanced GRF for assessing and reporting runway surface conditions as contained in Annexes 3, 6, 8, 14 and 15, and in Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM), PANS-Aerodromes, and Doc 10066 PANS-Aeronautical Information Management (PANS-AIM).

2.26 In terms of relevance to CNS SG, the AAITF/16 meeting was informed that (at least) one State had delayed the necessary update to the Aeronautical Message Handling System (AMHS), which was necessary to enable the processing of the new SNOWTAM format. CNS SG is therefore reminded that the processing/handling of SNOWTAM, which will become mandatory under the provisions of provision of from 04 November 2021, may be dependent on the configuration of AFS systems.

ATFM/SG/11

Integration of ATFM and A-CDM

2.27 In discussing the outcomes from the Sixth Meeting of the Asia/Pacific Airport Collaborative Decision-Making Task Force (APA-CDM/TF/6, 28 to 30 April 2021) ATFM/SG/11 noted that APA-CDM/TF had agreed to develop a regional model for the integration of ATFM and A-CDM.

2.28 Noting also ***Draft Decision AOP/SG/5-4: Dissolution of the APA-CDM/TF***, ATFM/SG/11 agreed to Draft Decision ATFM/SG/11-1: Revised ATFM/SG Terms of Reference, which proposes that APANPIRG/32 agrees that ongoing APAC regional A-CDM work be conducted by ATFM/SG.

2.29 CNS SG is invited to recall previous activities conducted by ACSICG and the SWIM/TF in developing and updating ATFM information exchange processes as requested by ATFM/SG. Accordingly, the meeting is invited to note that future updates to ATFM information exchange processes may be necessary to accommodate A-CDM information.

CANSO ATFM Data Exchange Network for Cooperative Excellence (CADENCE)

2.30 The CANSO ATFM Data Exchange Network for Cooperative Excellence Task Force (CADENCE TF) Co-Chair informed the ATFM/SG/11 meeting of its work supporting the implementation of a regional Operational Information System (OIS) based on the CANSO ATFM Data Exchange Network for the Americas (CADENA) OIS. The CADENCE TF wished to work with other regions to share the success gained in the Latin Americas and Caribbean regions. CADENCE could contribute to regional ATFM/CDM a basic, regional OIS at no cost for 20 years for Air Navigation Service Providers (ANSPs) and other stakeholders. The new OIS would be made available in all regions, and would enable ANSPs and aircraft operators to share information on factors affecting airspace and airport demand and capacity, facilitate situational awareness, and engage all stakeholders in the development of collaborative approaches to optimize the flow of air traffic.

Asia/Pacific Cross-Border Multi-Nodal ATFM Collaboration (AMNAC)

2.31 AAITF/11 was informed of progress in the Asia/Pacific Cross-Border Multi-Nodal ATFM Collaboration (AMNAC), including post-operations analysis results, the role of collaboration during the COVID-19 pandemic, technical progress on ATFM information exchange via Aeronautical Fixed Telecommunications Network/ATS Message Handling System (AFTN/AMHS), discussion on the progress of SWIM development for ATFM, and the development of a FIXM 4.2 APAC Extension.

2.32 The meeting was informed that ANSPs wishing to receive ATFM Slot Allocation Messages (SAM) and related messages through AFTN/AMHS could approach the AMNAC Technical Sub-Group to arrange technical trials based on the *Asia/Pacific AFTN/AMHS-based Interface Control Document (ICD) for ATFM*.

2.33 A technical trial of ATFM information exchange based on the SWIM concept over the CRV was planned to be conducted in Q1 2022, using the Advance Message Queueing Protocol (AMQP) version 1.0 and the Asia/Pacific FIXM 4.1 Extension.

2.34 ATFM/SG/11 was also informed that the APAC FIXM Extension was being updated following the release of FIXM version 4.2 in February 2021. The update would include data attributes from FF-ICE/Trajectory Based Operations (TBO)-based operational requirements in addition to those required to support ATFM information exchange in the Asia/Pacific Region.

NARAHG Update

2.35 The ATFM/SG/11 meeting was provided with an update on progress of the Northeast Asia Regional ATFM Harmonization Group (NARAHG), formed by China, Japan, and Republic of Korea. Information was provided on normal traffic volumes (2019), information exchange, data connection testing and ICD, the NARAHG CONOPS, the planned ATFM connection utilizing the CRV, the establishment of a task force for severe weather reroute coordination, and recent major activities.

2.36 In discussion the meeting noted the information exchange model used in NARAHG ATFM exchanges was not FIXM. The meeting was reminded that performance expectations of the Regional Framework for Collaborative ATFM specified the use of FIXM.

2.37 In response to a query the meeting was informed that NARAHG welcomed cooperation and data exchange with AMNAC.

RASMAG/26

FIT-Asia/11 outcomes

2.38 The lower number of data link Problem Reports (PRs) submitted to the Central Reporting Agency (CRA) in the 2020-2021 reporting period (27, compared with 66 in 2019-2020) reflected the decrease in air traffic due to the impact of the COVID-19 pandemic.

2.39 Regarding PRs relating to flights in areas of poor VHF coverage with subsequent reversion to SATCOM (PR 3178-MM), or flights on the edge of VHF coverage experiencing media transitions (3099-KS) the FIT-Asia/11 meeting was reminded of the guidance for data link performance improvement for aircraft operators provided in **FIT-Asia/9 WP/03** and subsequently approved by RASMAG for regional use under ***Conclusion RASMAG/24-1: Guidance for Data Link Performance Improvement for Aircraft Operators***. The guidance was available on the ICAO Asia/Pacific Regional Office eDocuments web-page: https://www.icao.int/APAC/Pages/eDocs.aspx.

2.40 The CRA provided information to the FIT-Asia/11 meeting on causes of poor Performance-Based Communications and Surveillance (PBCS) performance in the South China Sea area, and potential resolutions. Removal of a specific VHF ground station had led to frequent media transitions to SATCOM. **Figure 4** illustrates ARINC VHF ground station coverage in the South China Sea area, including the location of the removed ground station (Natuna Islands – NTX).

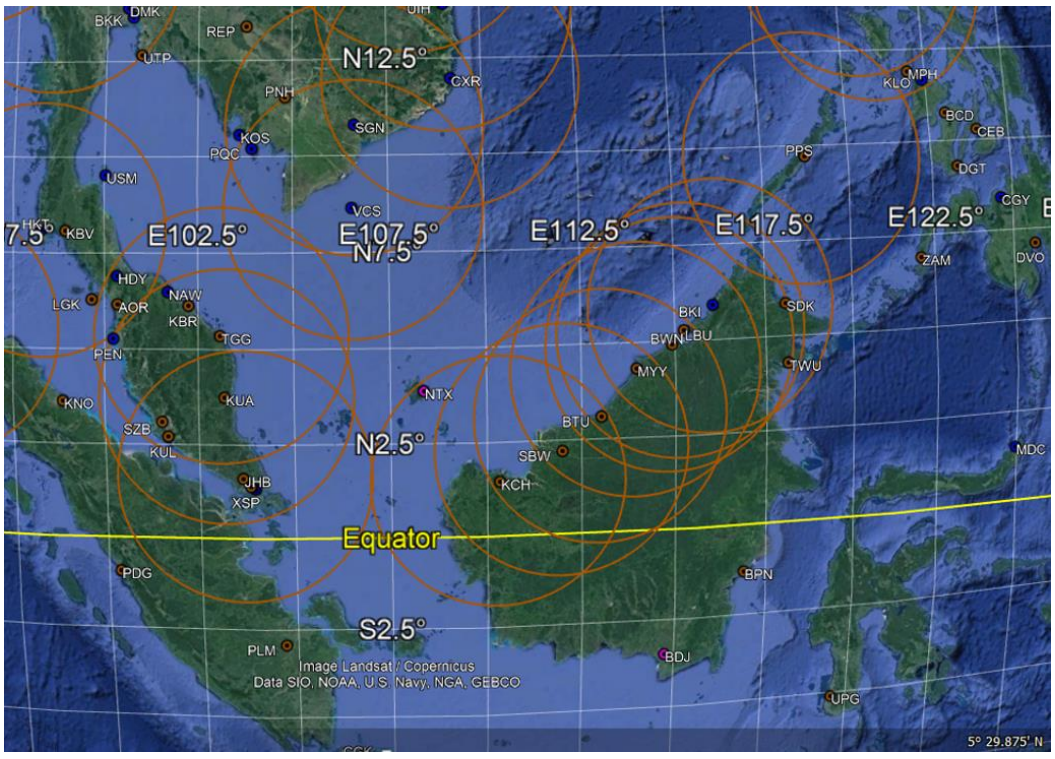

Figure 4: ARINC VHF Coverage in the South China Sea (~200 NM Radius per Ground Station)

2.41 **Figure 5** illustrates SITA VHF ground station coverage, the main difference being the absence of a SITA ground station at Con Son Island (VCS).

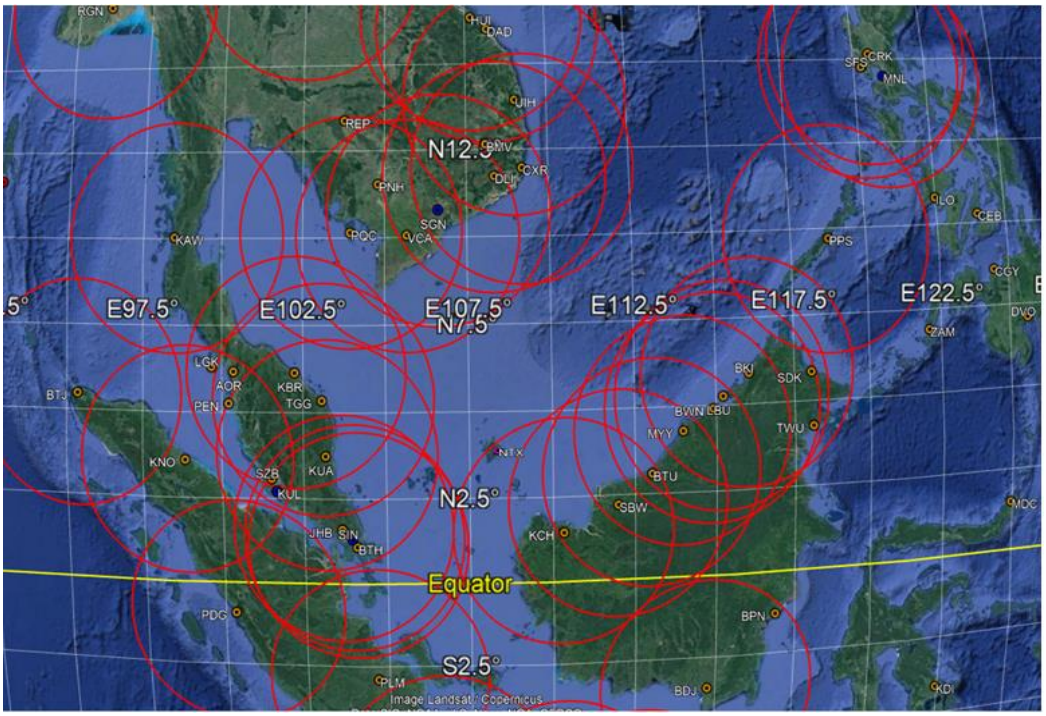

Figure 5: SITA VHF Coverage in the South China Sea (~200 NM Radius per Ground Station)

2.42 The NTX ground station had been deactivated since 2017. Barring any network or avionics improvements poor PBCS performance would continue, and should be taken into account by affected ATC centres for aircraft flying those routes. Indonesia agreed to attempt to establish contact with the relevant authority to determine whether the NTX ground station could be re-activated.

2.43 The following data link-related APANPIRG ATM and Airspace Safety Deficiencies were recommended by RASMAG/26 for consideration by APANPIRG/32

- deletion of the following Deficiency:
  - **Fiji:** *Problem reports not provided to CRA.*
- amendment of the following Deficiency:
  - **India:** *Performance monitoring and analysis not reported for ~~Kolkata and~~ Mumbai FIRs.*
- retention of the following Deficiency:
  - **Maldives:** *Problem reports not provided to CRA. Performance monitoring and analysis not reported to FIT.*

APAC Consolidated Safety Report

2.44 The Monitoring Agency for the Asia Region (MAAR) provided the RASMAG/26 meeting with a combined summary of the safety analysis results for the Asia/Pacific Region, on behalf of the Asia/Pacific Regional Monitoring Agencies (RMAs) and En-route Monitoring Agencies (EMAs), divided into the Pacific (PAC) and Asia areas (**Figure 6**).

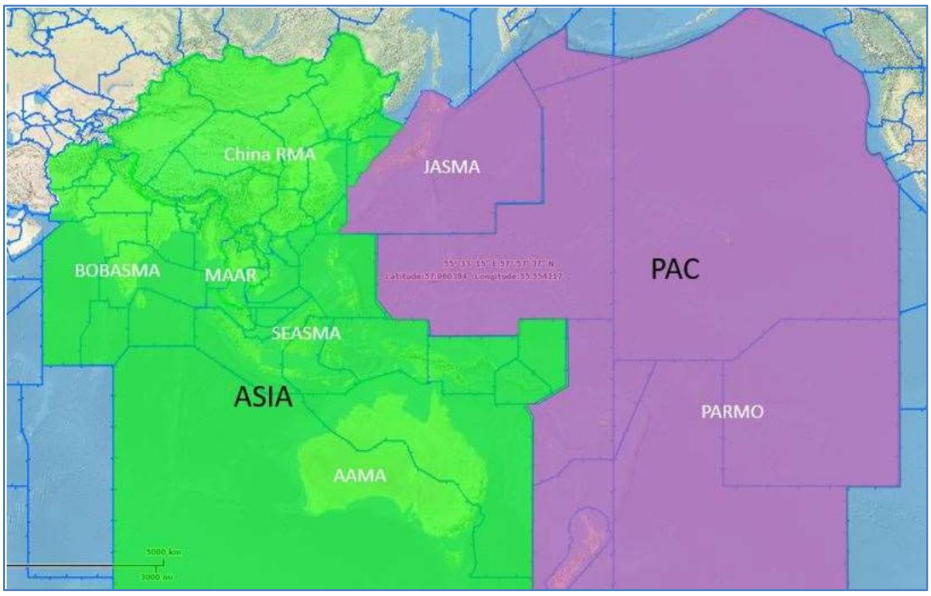

Figure 16: Asia and Pacific Safety Reporting Areas

2.45 The estimated horizontal collision risk (lateral and longitudinal) met the Target Level of Safety (TLS, 5.0 x 10^{-9} fatal accidents per flight hour – *fapfh*) in all analyzed risk categories (30NM, 50NM lateral and longitudinal separation and 10 MIN longitudinal separation), in both Asia and PAC monitoring areas.

2.46 The estimated vertical collision risk did not meet TLS in either the Asia or PAC monitoring areas (**Tables 2 and 3**). The meeting is invited to note the reduction of the risk estimates in 2020, caused by the substantial reduction in international air traffic due to the COVID-19 pandemic.

Year	Vertical Overall Risk Estimate (x 10^{-9} FAPFH)	Remark
2020	7.42	Above TLS
2019	12.88	Above TLS
2018	15.50	Above TLS
2017	27.30	Above TLS
2016	12.53	Above TLS

Table 2: Asia Area Vertical Collision Risk Estimates 2016 - 2020

Year	Vertical Overall Risk Estimate (x 10^{-9} FAPFH)	Remark
2020	16.71	Above TLS
2019	30.21	Above TLS
2018	19.40	Above TLS
2017	7.30	Above TLS
2016	5.01	Above TLS

Table 3: Pacific Area Vertical Collision Risk Estimates 2016 - 2020

2.47 In terms of relevance to CNS SG, the meeting is invited to note the importance of PBN and PBCS in collision risk outcomes and the achievement of TLS.

ICAO Aircraft Address Verification Using RVSM Approval Database

2.48 MAAR had started a trial process to verify ICAO aircraft address and quality-check other parameters as a by-product of RVSM monitoring. For height monitoring purposes the RVSM approval data contained ICAO aircraft addresses assigned to aircraft by State Civil Aviation Authorities.

2.49 Errors detected included mismatch of the aircraft address and the information in Item 18 of the flight plan, mismatched aircraft address due to incorrect address information in the RMA RVSM approval database, lag time in the provision of the combined snapshot when aircraft were transferred to a different State of Registry and assigned a new code, and mismatch of aircraft type designators between the flight plan and the RMA database.

2.50 MAAR had corrected information in its database, and coordinated with relevant RMAs and States to resolve issues. This verification process would continue as it would support future implementation of downlinked aircraft address for target identification in the APAC region.

2.51 ICAO informed the RASMAG/26 meeting that the ICAO Aircraft Address had a number of critical applications in Air Traffic Management systems. A paper on the MAAR activity in this regard should be submitted to the Surveillance Implementation Coordination Group (SURICG), which reported to the Communications, Navigation and Surveillance Sub-Group of APANPIRG (CNS SG).

Asia/Pacific Unmanned Aircraft Systems Update

2.52 The Unmanned Aircraft Systems (UAS) Advisory Group (UAS-AG) of the Remotely-Piloted Aircraft Systems (RPAS) Panel has developed the *ICAO UAS Toolkit*, which is a repository of information on UAS management that falls outside the scope of Standards and Recommended Practices (SARPs) and Procedures for Air Navigation Services (PANS) developed for RPAS operations. The toolkit is available at:

https://www.icao.int/safety/UA/UASToolkit/Pages/default.aspx.

2.53 The ICAO COVID-19 Series Webinars on UAS-related topics included:

- Enabling UAS Operations (link);
- Enabling UAS Operations Part II – Panel Discussion (link);
- Introducing ICAO UAS Model Regulations (link);
- UAS Beyond Visual Line of Sight Operations – for Regulators (link); and
- ICAO UAS Traffic Management (UTM) Framework (link).

2.54 The ICAO DRONE ENABLE 2021 Symposium was held by VTC from 13 – 15 and 20 – 21 April 2021. More information is available at:

www.icao.int/meetings/droneenable4 (symposium information)

www.icao.tv/drone-enable (recorded presentations)

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) Note the outcomes of SAIOACG/10 and SEACG/27:

i. the application of separation minimums at TOC points that are not commensurate with the level of CNS capability and/or the expectations of the Asia/Pacific Seamless ANS Plan;

ii. missing DEP messages;

iii. Mode S Conspicuity Code;

iv. PBN route planning in the South China Sea area;

b) Note the outcomes of AAITF regarding the global applicability of GRF and SNOWTAM from 04 November 2021, and the dependence of SNOWTAM implementation on AFS systems capability;

c) Endorse **Draft Conclusion SAIOACG/10 and SEACG/27-1**;

d) Note the ongoing development of ATFM and A-CDM information exchange processes and exchange models;

e) Note the RASMAG/26 discussion outcomes relating to:

i. poor PBCS performance in the South China Sea area;

ii. APANPIRG ATM and Airspace Safety Deficiencies relating to data link performance monitoring and analysis;

iii. Asia/Pacific airspace safety monitoring outcomes and their dependence on PBN and PBCS; and

iv. ICAO Aircraft Address.

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