



ICAO

International Civil Aviation Organization

The Second Meeting of the South Asia, Indian Ocean and Southeast Asia ATM Coordination Group (SAIOSEACG/2)

Bangkok, Thailand, 20 – 24 March 2023

Agenda Item 4: Review of Current Operations and Problem Areas

AIRSPACE SAFETY MONITORING

(Presented by Secretariat)

SUMMARY

This paper presents Regional Airspace Safety Monitoring Advisory Group (RASMAG) and Future Air Navigation Services (FANS) Interoperability Team-Asia (FIT-Asia) outcomes, and associated relevant airspace safety monitoring activities.

1. INTRODUCTION

1.1 The Twelfth Meeting of the FANS Interoperability Team-Asia (FIT-Asia/12) and the Twenty-Seventh Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/27) were held by video teleconference from 25 to 28 July 2022 and 22 to 25 August 2022 respectively.

1.2 RASMAG is a Sub-Group of APANPIRG, and the FIT-Asia reports to RASMAG.

1.3 Meeting documentation and the final report of the meeting are available on the FIT-Asia/12 and RASMAG/27 can be found at the following web-pages:

- i. <https://www.icao.int/APAC/Meetings/Pages/2022-FIT-Asia12.aspx>
- ii. <https://www.icao.int/APAC/Meetings/Pages/2022-RASMAG27.aspx>

2. DISCUSSION

FIT-Asia/12 Meeting Outcomes

2.1 The lower number of data link problem reports (PR)s submitted in the last 12 months reflected the dramatic decrease in air traffic due to the impact of the COVID-19 pandemic (**Figure 1**).

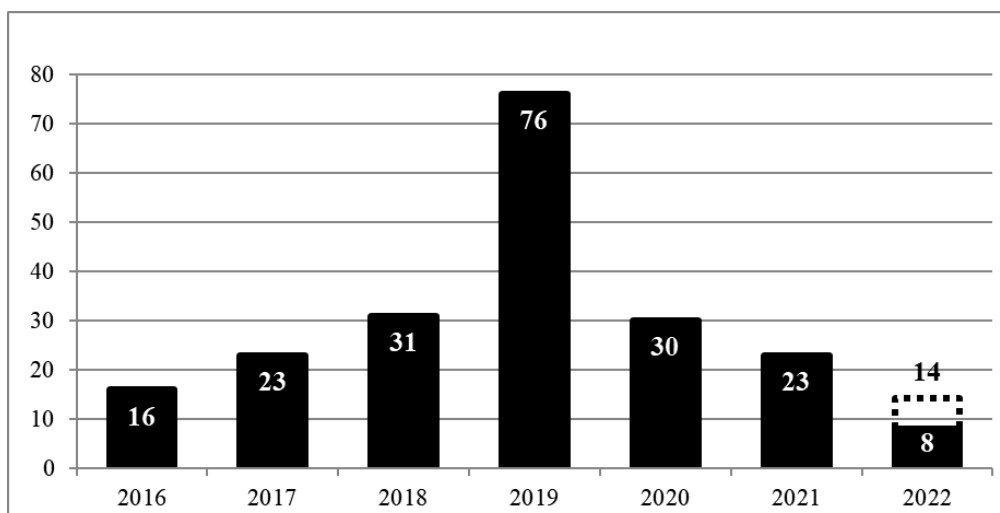


Figure 1: FIT-Asia PR Submissions per Year

2.2 The Central Reporting Agency (CRA) updated the status or progress of three old PRs that had occurred in the FIT-Asia States, and investigated nine significant new PRs and six less-significant new PRs.

2.3 FIT-Asia/12 had agreed to adopt the latency timer value of 300 seconds. The RASMAG/27 meeting subsequently agreed to the following Conclusion drafted by FIT-Asia/12:

Conclusion RASMAG/27-1: CPDLC Latency Monitor value

That, recognizing:

- 1. the need for aircraft to provide an appropriate indication when the age of the time stamp of a received CPDLC message exceeds a defined value (latency timer value), in accordance with ICAO Doc 9869 PBCS Manual safety requirement SR-15; and*
- 2. the need for a single, standardized global value.*

The Asia-Pacific region adopts a latency timer value of 300 seconds for use in oceanic airspace.

Regional PBCS Implementation Update

2.4 The meeting was updated on the status of PBCS implementation among Asia/Pacific Administrations, as reported using the APAC regional Survey of the Status of Current and Planned Implementation of Performance-Based Horizontal Separation Minima form. The meeting was reminded of relevant Conclusions of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) and the RASMAG:

Conclusion APANPIRG/27-7: PBCS Operator Requirements

Conclusion RASMAG/22-3: Performance-Based Separation Implementation Survey

Conclusion APANPIRG/28-11: PBCS Operational Authorizations

Conclusion RASMAG/23-1: PBCS Compliance

2.5 A total of 19 APAC Administrations had responded to the survey prior to FIT-Asia/11. Only Australia, Indonesia, Singapore and Thailand provided their annual survey response for 2022. Following on from discussion of the survey form, ICAO provided further information on the need for an update of the Survey of the Status of Current and Planned Implementation of Performance-Based Separation Minima. ICAO further proposed that the annual submission date for both the survey form and the PBCS performance monitoring data (ANSP to FIT) be brought forward to 28 February each year.

2.6 The RASMAG/27 meeting agreed to the following Conclusion drafted by FIT-Asia/12:

Conclusion RASMAG/27-2: Updated Reporting of PBCS Implementation Status and Performance Monitoring Data:

That:

1. *the revised Survey of the Status of Current and Planned Implementation of Performance-Based Separation Minima at Attachment C to RASMAG/27 report, and the revised PBCS Action List for ANSPs at Attachment D to RASMAG/27 report be uploaded to the ICAO Asia/Pacific Regional Office website to replace the existing; and*
2. *States are urged to submit the following to the Asia/Pacific Regional Office by not later than 28 February each year:*
 - a) *the completed Survey of the Status of Current and Planned Implementation of Performance-Based Separation Minima form; and*
 - b) *PBCS performance data for inclusion in the aggregated regional PBCS performance data report, using the Data Link Performance Report Template – ANSP to FIT provided on the ICAO Asia/Pacific Regional Office website.*

Note 1: Non-FIT-Asia States may submit their PBCS performance data through the relevant FIT.

Note 2: This Conclusion supersedes Conclusions RASMAG/22-3, 23-1, 23-2, 23-3.

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Asia/Pacific Region Combined PBCS Monitoring Report

2.7 The report highlighted consolidated performance data and issues associated with Automatic Dependent Surveillance – Contract (ADS-C) Actual Surveillance Performance (ASP) and Controller – Pilot Data Link Communications (CPDLC) Actual Communications Performance (ACP) for the region.

2.8 Overall ASP for the region had met the 95% criterion¹. Overall ACP for the region also met the 95% criterion. While the volume of data count had slightly increased in 2021, the trend of regional performance in both the 95%² and 99.9%³ criteria had generally improved.

¹ 95% of ADS-C transactions completed within 90 seconds

² 95% of CPDLC transactions completed within 90 seconds

³ 99.9% of CPDLC transactions completed within 120 seconds

RASMAG/27 Meeting Outcomes

APAC Consolidated Safety Report

2.9 The Monitoring Agency for the Asian Region (MAAR) presented a combined summary of the safety analysis results for the Asia/Pacific Region, on behalf of the Asia/Pacific Regional Monitoring Agencies (RMA)s and Enroute Monitoring Agencies (EMA)s. This working paper covers the Asia area only (**Figure 2**). The full APAC Consolidated Safety Report including the Pacific (PAC) area can be found in **Appendix F of RASMAG/27 report⁴**.

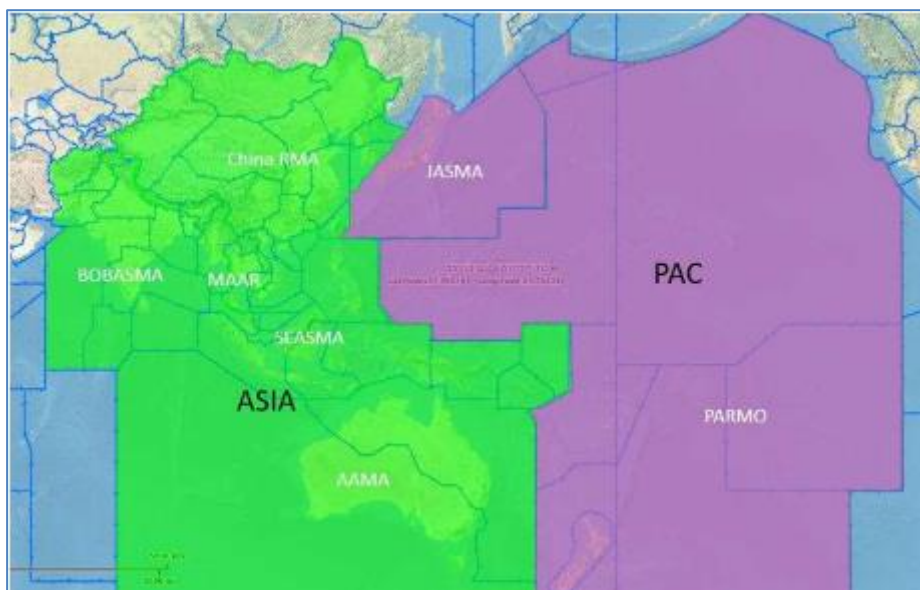


Figure 2: Asia and Pacific Safety Reporting Areas

Asia Area Vertical Collision Risk

2.10 The estimated vertical collision risk for 2021 for the Asia area met TLS (**Table 1**). The overall risk continued to decline since 2017 due to various safety improvement initiatives.

Asia Area – annual flying hours = 5,404,154 hours			
Source of Risk	Risk Estimation	TLS	Remarks
Vertical Technical Risk	0.32×10^{-9}	2.5×10^{-9}	Below Technical TLS
Vertical Operational Risk	3.71×10^{-9}	-	-
2020 Vertical Overall Risk	4.03×10^{-9}	5.0×10^{-9}	Below TLS

Table 1: Asia Area Vertical Collision Risk 2021

2.11 The Asia vertical collision risk estimates had been above TLS each year from 2016 to 2019 and trending downwards since 2017. In 2020 there was a significant fall in the risk estimate, while still remaining above TLS, reflecting the reduction in traffic volumes caused by the COVID-19 pandemic (**Table 2**). The 2021 vertical collision risk estimate was below TLS. There was a total of 379 LHDs reported in the Asia area in 2021, with total duration 339 minutes and 115 levels crossed.

⁴ <https://www.icao.int/APAC/Meetings/Pages/2022-RASMAG27.aspx>

Year	Vertical Overall Risk Estimate (x 10 ⁻⁹ FAPFH)	Remark
2021	4.03	Below TLS
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 – 2021

Asia Area Horizontal Safety Assessments

2.12 The estimated horizontal collision risk for 2021 for the Asia area met TLS in all longitudinal and lateral risk categories (**Table 3**). There was one LLDs and LLEs reported in the Asia area in 2021, with a duration of 29 minutes.

Asia Area – annual flying hours = 333,153 hours		
2021 Asia Area	Risk Estimation	Remarks
30NM Lateral Risk	0.0015 × 10 ⁻⁹	Below TLS
50NM Longitudinal Risk	1.02 × 10 ⁻⁹	Below TLS
2020 Asia Area	Risk Estimation	Remarks
30NM Lateral Risk	0.0004 × 10 ⁻⁹	Below TLS
50NM Longitudinal Risk	0.85 × 10 ⁻⁹	Below TLS
2019 Asia Area	Risk Estimation	Remarks
30NM Lateral Risk	0.0001 × 10 ⁻⁹	Below TLS
50NM Longitudinal Risk	0.25 × 10 ⁻⁹	Below TLS

Table 3: Asia Area Horizontal Collision Risk 2019 – 2021

Safety Reporting – Asia Area

2.13 **Table 4** shows the number of LHD, LLD and LLE reports for 2017 to 2021, and the number of reports per flying hours. Total estimated flying hours had decreased significantly due to the COVID-19 pandemic, from 15,677,369 in 2019 down to 7,234,881 in 2020 – an overall reduction of 54%. Flying hours in 2021 were marginally higher than 2020, at 7,604,927. The total number of reports approximately halved, from 1094 in 2019 down to 548 in 2020, but increased to 679 in 2021.

2.14 The number of reports per flying hours in 2021 significantly increased from 2020 in China, SEA, Indonesia, Japan, Republic of Korea/AKARA, leading to an overall reporting rate that was improved from the rate in 2020. Mongolia submitted one report in 2021. Data was not available for DPR Korea.

Airspace	# Reports					1 Report : Flying Hrs				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
DPRK	0	0	0	0	0	-	-	-	-	-
Mongolia	4	1	2	0	1	1: 37,771	1: 158,891	1: 82,138	-	1: 121,621
China	134	110	79	85	105	1: 18,248	1: 22,229	1: 31,119	1: 26,867	1: 15,477
ROK	5	12	34	5	70	1: 117,090	1: 28,365	1: 18,959	1: 25,965	1: 15,456
SEA	474	205	152	42	80	1: 6,548	1: 17,757	1: 22,275	1: 25,106	1: 13,528
Indonesia	34	23	37	18	47	1: 10,842	1: 53,603	1: 33,321	1: 17,346	1: 11,975
Japan	71	76	77	66	135	1: 21,510	1: 20,632	1: 20,762	1: 14,737	1: 11,167

Airspace	# Reports					1 Report : Flying Hrs				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
SA/IO	935	681	439	152	41	1: 3,166	1: 3,783	1: 7,955	1: 7,907	1: 7,402
SW Pacific	51	53	101	46	176	1: 17,572	1: 17,817	1: 9,335	1: 6,954	1: 6,638
Pacific	42	43	173	134	24	1: 54,191	1: 45,064	1: 10,139	1: 6,404	1: 6,285
Total	1,750	1,204	1,094	548	679	1: 8,180	1: 12,332	1: 14,330	1: 11,712	1: 11,200

Table 4: Total LHD, LLD and LLE Reports, and Reports per Flying Hours, 2017 - 2021

LHD Hot Spots

2.15 **Table 5** summarizes current LHD Hot Spots, the FIRs involved, the year of identification, and status remarks. The meeting considered that all current hot spots should be retained due to the continuing reduced traffic resulting from the COVID-19 pandemic and would be reviewed at RASMAG/28.

Hot Spot	Involved FIRs	Identified	Remarks
A1	Kolkata/Dhaka-Yangon	2015	Cat. E LHDs improved. Mitigations to be completed.
A2	Chennai – Yangon/Kuala Lumpur	2015	Cat. E LHDs slightly increasing
B	Incheon (AKARA Airspace)	2015	Cat. E LHDs improved. Mitigations to be completed.
D	Manila – all adjacent FIRs	2015	Cat. E LHDs increasing
F	Mogadishu – Mumbai	2015	Cat. E LHDs improved. Mitigations to be completed.
G	Sanaa/Muscat – Mumbai	2015	Cat. E LHDs improved. Mitigations to be completed.
J	Jakarta – Singapore/Kota Kinabalu	2018	Cat. E LHDs increasing.
M	Colombo – Melbourne	2019	Proposed to re-classify as non-hot spot. Mitigations to be completed.
N	Oakland USA – Hawaii CEP	2019	Cat. E LHDs increasing

Table 5: LHD Hot Spots in the Asia/Pacific Region

2.16 The process of identifying, monitoring and removing LHD hot spots had been developed informally over several years, to focus RASMAG attention on areas that required special attention. MAAR, responding to RASMAG Task List Action Item 26/5, presented a draft process for identifying, monitoring and removing LHD hot spots which had been discussed at RASMAG-MAWG/9. The MAWG meeting had agreed that the process should be conducted as a trial in 2022 before finalizing. All monitoring agencies trialled the draft approach in their safety reports for RASMAG/27. The meeting noted that the trial hotspot identification process was subjective to some degree, but difficult to standardize. Monitoring agencies were welcomed to propose ideas in this regard to the MAWG to fine tune the overall process. RASMAG supported continuation of this activity, with a view to its future formalization.

Side Meeting – Hot Spot D

2.17 A RASMAG/27 side meeting was held after the close of plenary discussion on 23 August 2022, to provide the opportunity for ANSPs to discuss Hot Spot D (Manila FIR and Adjacent FIRs). A summary of discussion was provided in Appendix E to the RASMAG/27 report (**Attachment A**).

MAAR Vertical Safety Report

2.18 MAAR provided the results of the airspace safety oversight for RVSM operations in South Asia/Indian Ocean Airspace (SAIO), Southeast Asia Airspace (SEA), and Mongolian Airspace during 2021.

South Asia Indian Ocean Airspace

2.19 The 2021 RVSM risk estimate for SAIO airspace indicated that the TLS had not been met at 5.62×10^{-9} (Figure 3).

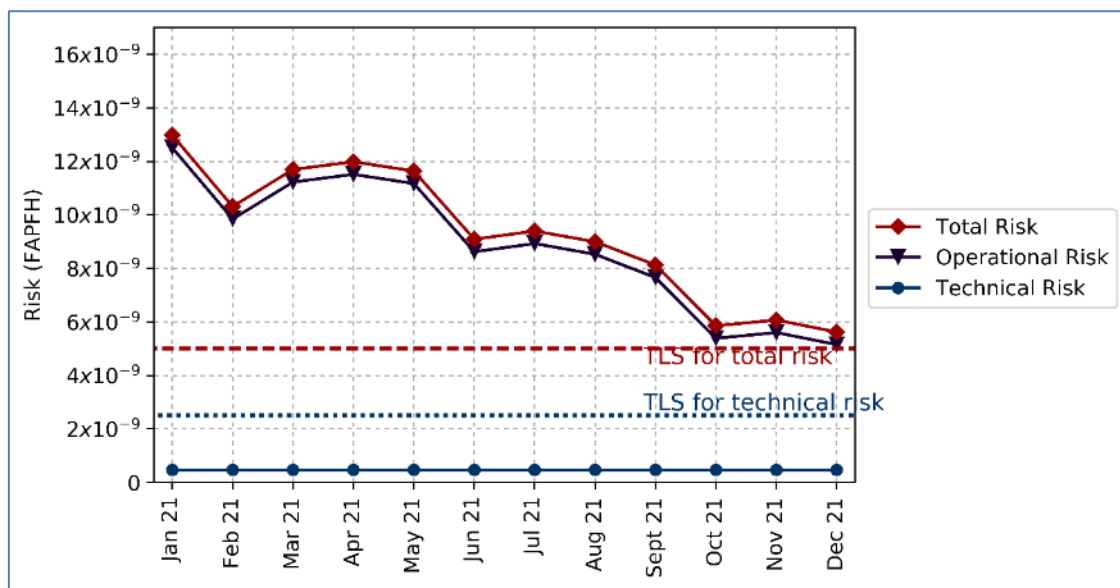


Figure 3: Trends of Risk Estimates for SA/IO Airspace.

2.20 As had been the case in previous years, the vast majority of the 134 LHD cases that had been reported were Category E events (123 or approx. 92%)

Identified Airspace Risk Occurrences in Indian FIRs

2.21 India presented identified risk occurrences in the four Indian FIRs as reported by ATC during the period 1 January to 31 December 2021, together with various mitigation measures.

2.22 There was one LLD and no LLE reported in the BOBASIO airspace. However, there were 149 LHDs including 143 category E LHDs, of which 100 were filed by Indian ACCs/OCCs and another 43 by adjacent accepting ACCs/OCCs.

2.23 As part of its efforts to reduce the risks due to coordination errors and other near boundary ATS incidents India had planned to implement AIDC with all the neighbouring FIRs. AIDC Test/Trails were conducted during the past year with many of the neighbouring ATSUs.

LHD Material Package

2.24 MAAR presented consolidated LHD material as a package to capture the current situation of LHD reporting processes. The package included LHD frequently asked questions (FAQ), LHD taxonomy, LHD reporting form and LHD points of contact (POCs).

2.25 ICAO Doc 9574 RVSM Implementation Manual Chapter 5 specified that ATC authorities were responsible for reporting LHDs to the responsible RMA. The LHD Material Package should be useful for States and ANSPs to better understand the LHD definition, criteria and reporting process. The LHD Material Package 2022 was provided in RASMAG/27 WP/24 Attachments 1 to 7.

Identification of Non-RVSM Approved Aircraft

2.26 **Table 6** lists the numbers of non-RVSM airframes reported annually by each RMA.

Report	AAMA	China RMA	JASMA	MAAR	PARMO	Total
RASMAG/20	8	45	15	234	26	328
RASMAG/21	5	6	15	106	11	143
RASMAG/22	7	40	11	163	25	246
RASMAG/23	5	20	9	43	38	115
RASMAG/24	5	4	17	34	1	61
RASMAG/25	2	24	6	26	9	67
RASMAG/26	10	19	21	19	3	72
RASMAG/27	Nil	61	17	21	18	117

Table 6: Trend of Non-RVSM Airframes Observed

2.27 MAAR proposed, and the meeting agreed, to include Brunei Darussalam on the APANPIRG List of Deficiencies in the ATM and Airspace Safety fields for failure to verify RVSM approval status for two consecutive years. The meeting also agreed that Lao PDR and Mongolia, both of which failed to submit the 2021 annual RVSM approval snapshot, should be informed that failure to submit the snapshot in 2022 may result in a Deficiency being recorded in 2023.

Survey Outcome for Continuance of ‘W’ Check for APAC State Aircraft

2.28 The meeting was informed of the results of a survey conducted by ICAO Regional Office in response to **Conclusion APANPIRG/32-6: RVSM Approvals Data and Filing of RVSM Indicator in Flight Plans of State Aircraft**. The survey, prepared by MAAR on behalf of APANPIRG and APAC RMAs had been circulated by ICAO State Letter on 03 March 2022.

2.29 Fifteen States responded to the Survey. The majority of responses indicated that respondent States:

- 1) had coordination processes in place to support discussions of RVSM and other airspace-safety-related issues with State aircraft operators;
- 2) had rules or procedures in place to ensure that State aircraft operators did not file the RVSM-approved ‘W’ indicator in filed flight plans for non-RVSM-approved aircraft; and
- 3) would you like Asia Pacific RMAs to continue to cross-check ‘W’ in State Aircraft’s flight plans against RMAs’ RVSM database and try to resolve the discrepancies.

2.30 MAAR informed the meeting that they would present this result to the upcoming RMACG/17 (Part II) meeting.

MAAR Rogue State Aircraft on the European Bulletin

2.31 The meeting was provided a list of rogue State aircraft (from States under MAAR responsibility) that were reported on the European Air Navigation Region Bulletin (version 17.7, updated July 15 2022). These aircraft were identified as RVSM non-approved aircraft operating within the European region by filing ‘W’ in their flight plan but did not have matching RVSM approval records in the global RVSM approval combined snapshot.

2.32 ICAO European Air Navigation Planning Group (EANPG) meetings had been exploring potential actions that States could take to address and minimize the number of aircraft on the bulletins, particularly those that had been listed for extended periods.

2.33 Germany had requested that the EUROCONTROL Integrated Initial Flight Plan Processing System (IFPS) reject flight plans for such aircraft planning to operate in RVSM designated airspace over Germany. A proposal to extend the scheme throughout the area covered by the IFPS would be submitted to EANPG.

2.34 **Table 7** summarizes the number of aircraft from States under the MAAR responsibility that are listed on the European bulletin.

State of Operator	Operator Name	Number of Registrations
India	Air Force of India	5
	Government of India	2
	India Total	7
Pakistan	Air Force of Pakistan	6
	Pakistan Army	1
	Pakistan Total	7
Grand Total		14

Table 7: Number of Rogue Aircraft on the European Bulletin (States under MAAR responsibility)

2.35 India and Pakistan were urged to liaise with their State aircraft operators to explain the flight plan rejection mechanism and potential disruption to their flight operations. MAAR would assist in communications as much as possible.

2.36 India informed the meeting that the matter would be taken up with DGCA India. Pakistan had already approached the State aircraft operator on the matter.

2.37 ICAO noted the discussion of the matter of non-RVSM-approved State aircraft at ATM/SG/9 and APANPIRG/32 in 2021, which had resulted in Conclusion APANPIRG/32-6 not including key elements of the original drafted by RASMAG/26. States could also use the information to encourage more cooperative behaviour by their State aircraft operators.

APAC Consolidated LTHM Compliance Status

2.38 MAAR presented the overview of LTHM compliance status in the APAC Region, including assessments of five APAC RMAs – AAMA, China RMA, JASMA, MAAR and PARMO. The assessment, which was based on RVSM approval data as of at 30 June 2022, yielded a remaining monitoring burden in the APAC Region of 528 aircraft, which was a 25% increase since 2020.

2.39 Pakistan had the highest percentage of remaining monitoring burden at 73%. It was noted that 70% of Pakistan operators had contacted the MAAR for EGMU service, but could not receive the service due to the travel restrictions during the pandemic. The Chair commented that, as an alternative, States could encourage aircraft operators to retrofit ADS-B-Out capability where feasible, as it would provide a more efficient and more cost-effective solution for height monitoring in the long run.

2.40 **Table 8** lists the States having a remaining monitoring burden of 30% or more, which could be subject to an APANPIRG ATM and Airspace Safety Deficiency.

State	2020	2021
Vanuatu (AAMA)	0%	100%
Pakistan (MAAR)	61%	73%
Indonesia (AAMA)	41%	52%
Solomon Islands (AAMA)	50%	50%
Papua New Guinea (AAMA)	31%	46%
India (MAAR)	51%	46%
The Philippines (MAAR)	48%	45%
Nepal (MAAR)	46%	45%

Table 8: List of States having monitoring burden over 30% as of 30 June 2022

2.41 Since the EGMU service had remained unavailable in the past year, MAAR therefore proposed, and the meeting agreed, that consideration of States (listed in **Table 8**) to be included in the Deficiencies List should be delayed until RASMAG/28.

2.42 Information had been received indicating Afghanistan’s remaining monitoring burden has dropped from 42% reported in RASMAG/26 to 14% this year. MAAR suggested that RASMAG propose APANPIRG consider removing Afghanistan from the List of Deficiencies. However, ICAO informed the meeting that the POC providing this information to MAAR was not the same person nominated by the current aeronautical administration in Afghanistan that was in regular contact with ICAO. It was proposed that the Deficiency should remain, but comments reflecting this be included in the Deficiency List when presented to APANPIRG/33.

PBCS Non –compliance reporting

2.43 In relation to PBCS non-compliance reporting, the experience of FAA North Atlantic Approvals Registry and Monitoring Organization (NAARMO) and PARMO was that there had been a lack of reports received, some gaps in the data, and delayed receipt of reports. Further information was provided on the number of reports and timeliness of data received, the unavailability of specific PBCS contacts at State/Civil Aviation Authority (CAA) level, lack of State participation in RMA measures on PBCS, the manual nature of PBCS non-compliance reporting, and the tracking of non-compliant aircraft.

2.44 RASMAG agreed that further action on the development and formalization of non-compliance reporting and handling processes, possibly in the form of regional guidance, would be coordinated through FIT-Asia.

JASMA Assessment of Non-PBCS Approved Aircraft

2.45 JASMA presented a list of operator-aircraft combinations operating within the Pacific Ocean airspace of the Fukuoka FIR with no registration of PBCS approval. The percentage of PBCS-filed flights increased gradually from 85 to 88 percent in 2021, then reached 90 percent in the first half of 2022. The percentage of PBCS-approved flights had remained 5 to 9 percent lower than the percentage of PBCS-filed flights. There were approximately 30 flights per day and 900 per month that filed ‘P2’ and ‘RSP180’ in their flight plans but were not confirmed to be PBCS approved/authorized, according to the approvals database.

2.46 Japan and USA informed the meeting that there was a plan to implement 23NM lateral separation minimum and new ATS routes requiring RNP4 and PBCS for aircraft operating in the North Pacific Ocean Airspace. Aircraft filing ‘P2’ and ‘RSP180’ in their flight plans that were also identified as non-PBCS approved may not be approved to operate on the new ATS routes or in the related flight level stratum.

ANS Deficiencies List

2.47 The meeting reviewed the APANPIRG ATM and Airspace Safety Deficiency List and agreed to make the following recommendation to APANPIRG/33, as recorded in Appendix H to RASMAG/27 Report:

2.48 FIT-Asia/12 had proposed, and RASMAG/27 agreed, retention of the following data link-related ATM and Airspace Safety Deficiencies be recommended to APANPIRG/33:

- a) Retention of the following data-link related deficiencies:

India: *Performance monitoring and analysis not reported for Mumbai FIRs.*

Maldives: *Problem reports not provided to CRA. Performance monitoring and analysis not reported to FIT.*

- b) Retention of the following safety related data deficiency

Afghanistan: *non-provision of safety related data*

- c) Addition of a new Deficiency:

Brunei Darussalam: *non-provision of Safety-Related Data – Requirement of Paragraph 3.3.5.1 of Annex 11 (provision of data for monitoring the height keeping performance of aircraft)*

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note –

i. ***Conclusion RASMAG/27-1: CPDLC Latency Monitor value;***

ii. ***Conclusion RASMAG/27-2: Updated Reporting of PBCS Implementation Status and Performance Monitoring Data;***

- b) note the trial hot spots identification process, and the retention of hot spots during the current period of significantly reduced traffic;

- c) note the proposal to ICAO European Air Navigation Planning Group (EANPG) meetings for the rejection flight plans for of RVSM non-approved aircraft listed in the European bulletins, particularly those that had been listed for extended periods;
- d) note the retention of existing, and addition of new, ATM and Airspace Safety Deficiencies; and
- e) discuss any other relevant matters as appropriate.

— END —

RASMAG/26 SIDE MEETING – LHD HOT SPOT M

SUMMARY OF DISCUSSION

1.1 Attending Administrations and International Organizations:

Japan (including JASMA), Republic of Korea, Philippines, Thailand (including MAAR), IFATCA

1.2 The meeting was informed of the rise in the number of LHDs/LLEs/LLDs on the Manila-Fukuoka FIR interface, especially the transfers from the Manila FIR, despite the reduction in traffic during the pandemic.

1.3 Manila ACC responded to JASMA that Manila's ATM System (TopSky-ATC) has a function that alerts the controller if the actual altitude is different from the transferred altitude, and described to JASMA the current surveillance coverage over the Manila-Fukuoka FIR interface.

1.4 Manila ACC presented in detail the analysis of the factors contributing to the errors, mostly due to the dynamic configuration changes as a result of manpower management during the pandemic. The mitigations mostly focus on training aspects of the existing and new controllers.

1.5 JCAB and IFATCA recommended Manila ACC to also look at the management of team resources that can better help catching these errors, taking into consideration the human limitations. An example was shared by a representative from JCAB how their supervisor helps the controllers check the transfer conditions.

1.6 IFATCA was informed by JASMA and the Manila ACC that the errors are not likely attributable to the FLAS transitions.

Attachments:

- Philippines Form A LHD Analysis 2022
- Philippines Form B LHD Preventative Mitigation Measures 2022



ATTACHMENT A

FORM A - LHD Analysis

Due to the continuing prevalence of LHDs, States are encouraged to conduct further investigation and provide in-depth analyses of LHDs, especially those induced by their responsible ATS units. The purpose is not to apportion blame on any organizations but to understand the underlying root causes in order to develop safety mitigations to prevent reoccurrence. In case of significant occurrences (such as long duration LHDs), States are encouraged to provide an analysis for each occurrence. For other occurrences, States can provide analysis of a group of similar occurrences. **Please, return the filled form to maar@aerothai.co.th.**

- 1. **Organization:** Civil Aviation Authority of the Philippines
- 2. **Date of Analysis:** August 19, 2022
- 3. **If it is a single occurrence - Please provide occurrence date, call sign*, and location:**
- 4. **If it is a group of occurrences – Please describe the nature of occurrences:** No FL revision/ No EST revision
(Cat E)
- 5. **Details of the analysis: Please provide detailed description of the followings**

Description of Occurrence(s)	
No revision in time and/or flight level. No transfer information. ATC-to-ATC readback-hearback error	
Contributing Factors and Mitigations	
- Contributing factors/causes: Please describe <u>all</u> factors leading to such occurrence(s)	
- Mitigations/controls/barriers: Please describe any measure which could be used to <u>prevent/detect</u> LHD occurrence(s), or <u>reduce</u> their duration. Also, please describe existing barriers which could be improved.	
Procedures/LOAs –which could be non-existent, inappropriate, not strictly adhered to, or needed review	
Contributing factors/causes	Mitigations/controls/barriers



<p>1. Lacking mastery of existing procedures resulting in non-adherence to the required standards.</p> <ul style="list-style-type: none">- Very gradual improvement in competency among new ATCs due to pandemic-related policies that affects workforce movement and training efficiency. <p>2. Implementation of several procedures due to the individual requirements of each adjacent ACCs and due to varying sector airspace configurations that contributes to the overall complexity.</p> <ul style="list-style-type: none">- During pandemic, there is a need to deploy ATCs in several sector positions with each position having different airspace configurations and procedures from others.	<ul style="list-style-type: none">- Re-imposition of periodic training/proficiency sessions to reiterate procedures (started November to December 2021).- Regular ATMS proficiency training is already implemented in 2022.- Safety promotion videos were released to ATCs in 2021 to constantly remind ATCs of important procedures.
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<ul style="list-style-type: none"> - During pandemic, there is a frequent change in ATC sector airspace configurations and ATC roles to match available workforce and associated capabilities (e.g., Merging of multiple sectors, change of roles due to rating limitations, etc.) <p>3. Comprehensive discussions with ATCs involved in the SOR were minimal during pandemic. Online safety meeting was conducted but not as effective as face-to-face meeting.</p> <ul style="list-style-type: none"> - Pandemic-related policies are affecting personnel movement. <p>4. Briefing and debriefing were mostly limited to the use of messaging applications which is not as effective as face-to-face briefing.</p>	<p>Pre-pandemic schedules are gradually adopted in Nov 2021 to increase capacity and address possible safety issues related to reduced sectors.</p> <ul style="list-style-type: none"> - Conducted safety assessment regarding safe minimum operating sectors. - The regular face-to-face safety discussions with ATCs involved in SOR were resumed in March 2022. - Improved on-line briefing procedures were adopted in 2022 as interim due to outbreak of omicron variant in Q1 2022.
<p>Human Factor Issues –ex. fatigue, workload, competency, English proficiency, teamwork, situational awareness</p>	
<p>Contributing factors/causes</p>	<p>Mitigations/controls/barriers</p>



<p><u>Fatigue</u> caused by extended work duty due to manpower shortages during pandemic.</p> <p>The additional roles or responsibilities associated to the bigger airspace volume assumed adds to the overall complexity and therefore contributes to <u>ATC workload</u>.</p> <p><u>Confusion</u> attributed to frequent merging of sectors in varying airspace partition combinations during pandemic.</p> <p>Due to the low number of training sessions conducted, new ATCs are easily <u>overwhelmed</u> by the numbers of procedures in each different ATC sectors. (e.g. surveillance and non-surveillance procedures, AIDC versus voice coordination procedures, different communication and surveillance capabilities and methods, separations, etc.)</p>	<ul style="list-style-type: none"> - Adopted a “<i>new normal</i>” work schedule to address manpower shortage and to improve the capacity by operating more ATC sectors per shift while maintaining compliance with the revised pandemic safety protocols. - Memorandum on fatigue management were disseminated. Manila ACC conducted fatigue survey and participated in Mental Health Webinars. - Re-imposition of periodic training/proficiency sessions to reiterate procedures (November to December 2021).
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<p>Overall <u>diminished competency</u> of the Manila ACC workforce due to ATC rating and proficiency issues. Seasoned ATCs/Trainor are redeployed in other ATS facilities and replaced by a group of newly graduate ATCs that are lacking ratings and experience. Also, the several months of lean traffic volume contributed to the ATC proficiency problem.</p>	<ul style="list-style-type: none"> - Robust implementation of facility rating training program (march 2022 to present). Facility ratings are awarded to 17 ATCs in the first half of 2022. The original target is only 10 new ratings in one year time. <p>Safety assessment regarding recovery to normal ATS were conducted.</p>
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Systems/Equipment –ex. equipment failures, unserviceability, usability, reliability, poor design



Contributing factors/causes	Mitigations/controls/barriers
<p>1. Regressions were observed after ATM system software update (Sept 2021). While some of these issues were already corrected by the vendor after a month, there were still a few regressions that remain unpatched and may have caused additional workload to ATC. (e.g. System lag or system unresponsive to user inputs)</p> <p>2. Increased occurrence of AIDC errors after ATM system updates.</p>	<ul style="list-style-type: none"> - Collaboration with system vendor and engineers to investigate open problem reports and deployment of corrective patches. - A technical working group was formed to address the future rehabilitation and improvement of the existing ATM system. - Reconfiguration of system dataset.
Other Factors – ex. training, staffing, clearly defined roles and responsibilities, workplace condition, weather	
Contributing factors/causes	Mitigations/controls/barriers
<p>Pandemic protocols</p> <ul style="list-style-type: none"> - Rising of COVID-19 positive cases. - Reduced training efficiency due to staffing and movement restrictions. 	



FORM B - LHD Preventive/Mitigation Measures

Due to the continuing prevalence of LHDs, States are urged to provide a list of measures planned or taken to minimize LHDs (including detection of LHD occurrences and actions taken to reduce LHD duration). Please list all actions planned or taken by your organization, including comments on their effectiveness and **return the completed form to maar@aerothai.co.th**.

1. Organization: Civil Aviation Authority of the Philippines

2. Date of analysis: August 19, 2022

3. Hotspot/Area (example: eastern boundary of FIR A):

4. Please provide detailed description of the followings:

No.	Preventive/mitigation measures planned/taken	Target/actual effective date	Progresses/difficulties	Comments on effectiveness of mitigations
1	Conducted numerous training sessions related to ATC proficiency, procedure review, and facility ratings.	Started Nov-Dec 2021 Regular training sessions resumed Q1 2022	<ul style="list-style-type: none"> - Initially conducted as online training – not as efficient as face-to-face medium. - Intermittent Internet connections. - Face-to-face sessions resumed in Q1 2022 	<ul style="list-style-type: none"> - Improved knowledge/skills. - Promoted active participation of all ATCs by requiring each one to have a presentation. - Online sessions not as effective as face-to-face medium.
2	Conducted an improved online ATC briefing before shift duty.	Q1 2022	<ul style="list-style-type: none"> - Conducted Online VTC - Intermittent internet connections 	<ul style="list-style-type: none"> - Not as effective as face-to-face sessions.
3	Resumption of face-to-face safety-related discussions with ATCs involved in the SOR.	Q1 2022	<ul style="list-style-type: none"> - Face-to-face medium for discussion is restored starting Q1 2022 - Difficulties in arranging discussion sessions due to conflict in ATC work schedule. 	<ul style="list-style-type: none"> - Sharing of lessons learned, recommendations and comments to reduce the safety occurrences.



4.	Continue engagement with Fukuoka ACC and ATMC regarding AIDC implementation (subject to the preparedness of Japan) .			
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5. Is there anything the RMA/RASMAG/ICAO can assist with related to LHDs? :