



ICAO

International Civil Aviation Organization

The First Meeting of the South Asia, Indian Ocean and
Southeast Asia ATM Coordination Group (SAIOSEACG/1)

Video Teleconference, 28 March – 01 April 2022

Agenda Item 4: Review of Current Operations and Problem Areas

AIRSPACE SAFETY MONITORING

(Presented by the Secretariat)

SUMMARY

This paper presents Regional Airspace Safety Monitoring Advisory Group (RASMAG) outcomes, and associated relevant airspace safety monitoring activities.

1. INTRODUCTION

- 1.1 The Eleventh Meeting of the FANS Interoperability Team-Asia (FIT-Asia/11) was held from 23 to 26 August 2021 by Video Teleconference (VTC).
- 1.2 The Twenty-Sixth Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/26) was held from 20 to 23 September 2021 by Video Teleconference (VTC).

2. DISCUSSION

FIT-Asia/11 Meeting Outcomes

- 2.1 The lower number of data link Problem Reports (PRs) submitted to the FIT-Asia 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.
- 2.2 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 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>.
- 2.3 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.
- 2.4 The FIT-Asia/11 meeting had discussed the need for adoption in the Asia/Pacific Region of a common Future Air Navigation Services 1/A (FANS1/A) Controller-Pilot Data Link Communications (CPDLC) Latency Timer value of 300 seconds, as was currently being successfully trialled in the North Atlantic (NAT) Region. The RASMAG/26 meeting agreed to the following technical Conclusion drafted by FIT-Asia/11:

Conclusion RASMAG/26-1: FANSI/A CPDLC Latency Timer 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;*
- 2. a latency timer value of 300 seconds supports both RCP240 and RCP400 operations;*
- 3. the need for a single, standardized global value; and*
- 4. the trialling of a value of 300 seconds in the North Atlantic Region;*

States are urged to implement a latency timer value of 300 seconds on a trial basis and report outcomes to FIT-Asia.

2.5 The meeting was informed that over a period of four years a total of 19 APAC Administrations had responded to the annual regional survey of the status of current and planned implementation of performance-based horizontal separation minima, which was supported by several APANPIRG and RASMAG conclusions. Only Australia, Indonesia and Singapore had responded in 2021.

2.6 A Proposal for Amendment (PfA) to ICAO Doc 7030 Regional Supplementary Procedures (SUPPS) had been drafted to support the inclusion of relevant FIRs administered by Indonesia, Philippines, Singapore and Sri Lanka in sections supporting the application of performance-based separation that required PBCS. On receipt of formal communications from all States requesting the change, the PfA process would commence.

Note: Further clarification on the intended separation minima to be applied in two of the FIRs concerned is being sought.

2.7 China had presented the Asia/Pacific Region Combined PBCS Monitoring Report to the FIT-Asia/11 meeting. The report highlighted consolidated performance data and issues associated with Automatic Dependent Surveillance - Contract (ADS-C) Actual Surveillance Performance (ASP) and CPDLC Actual Communications Performance (CPDLC) for the region.

2.8 Overall ASP for the region had met the 95% criterion of the Required Surveillance Performance 180 (RSP180) specification, but fell marginally below the 99.9% criterion¹. While the volume of data counts had significantly reduced in 2020, the trend of regional performance in both the 95% and 99.9% criteria had generally improved.

2.9 Overall ACP for the region met the 95% criterion (**Table 1**). ACP for most FIRs fell marginally below the 99.9% criterion, but several FIRs failed to meet it². In the first half of 2020 one FIR did not meet the 95% criterion for Actual Communications Technical Performance (ACTP) and two FIRs failed to meet the 99.9% criterion. In the second half of the year all reporting FIRs met the 95% criterion, but four did not meet the 99.9% criterion. Pilot Operator Response Time (PORT) performance requirements were not met by a number of aircraft operators.

¹ ASP Criteria: 95% of transactions completed within 90 seconds, 99.9% completed within 180 seconds

² ACP Criteria: 95% of transactions completed within 180 seconds, 99.9% completed within 210 seconds.

ACTUAL COMMUNICATION PERFORMANCE - FIR AGGREGATE (ALL MEDIA TYPES)										
Region	Asia-Pacific Region									
Performance Criteria	RCP240									
Time Period	2020 January-June				2020 July - December					
Colour key Meets criteria 99.0%-99.9% Under criteria	Message Counts	ACP Criteria		ACTP Criteria		Message Counts	ACP Criteria		ACTP Criteria	
		95%	99.90%	95%	99.90%		95%	99.90%	95%	99.90%
		% <= 180sec	% <= 210sec	% <= 120sec	% <= 150sec		% <= 180sec	% <= 210sec	% <= 120sec	% <=150sec
FIR										
PAZA	70739	99.12%	99.33%	99.21%	99.50%	68090	99.06%	99.32%	99.24%	99.48%
RJJJ	34547	99.57%	99.78%	99.65%	99.75%	31739	99.60%	99.76%	99.63%	99.73%
KZAK	192062	99.31%	99.53%	99.65%	99.77%	142934	99.46%	99.64%	99.72%	99.84%
NFFF	3764	99.62%	99.81%	99.81%	99.89%					
NTTT	2939	99.49%	99.78%	99.71%	99.78%	1002	99.40%	99.70%	100.00%	100.00%
NZZO	7999	99.58%	99.73%	99.72%	99.74%	2803	99.82%	99.71%	99.89%	99.89%
YBBB	24042	99.25%	99.29%	99.46%	99.48%	11475	99.29%	99.29%	99.48%	99.48%
YMMM	29335	99.55%	99.48%	99.67%	99.66%	12820	99.38%	99.38%	99.53%	99.53%
RPHI	4665	97.59%	97.84%	98.91%	99.24%	9044	98.24%	98.40%	98.58%	98.82%
VCCF	24214	98.45%	99.53%	99.28%	99.78%	16601	98.37%	99.39%	99.17%	99.76%
VOMF	31266	99.77%	99.86%	99.84%	99.86%	31445	99.77%	99.85%	99.84%	99.86%
VVTS	26896	95.80%	96.31%	99.40%	99.65%	31859	96.26%	96.64%	99.48%	99.72%
WAAF	21900	98.20%	98.45%	99.70%	99.78%	11451	97.80%	98.12%	99.68%	99.75%
WMFC	9261	98.14%	98.71%	98.54%	99.11%	30246	97.67%	98.45%	97.42%	98.40%
WSJC	19113	98.94%	99.29%	98.87%	99.22%	14758	98.93%	99.20%	99.05%	99.29%
ZLLL	2447	97.99%	98.32%	98.40%	98.81%	1140	97.10%	97.28%	98.42%	98.68%
ZWWW	464	95.90%	96.76%	93.31%	96.98%	111	97.29%	98.19%	96.39%	96.39%

Table 1: Asia/Pacific Region ACP (RCP240)

APAC Consolidated Safety Report

2.10 MAAR presented a combined summary of the safety analysis results for the Asia/Pacific Region, on behalf of the Asia/Pacific RMA's and EMAs. The report was divided into the Pacific (PAC) area, and Asia area. In this report, only the Asia area will be highlighted.

Asia Area Vertical Collision Risk

2.11 The estimated vertical collision risk for 2020 for the Asia area did not meet TLS (**Table 2**). The overall risk continued to decline since 2017 due to various safety improvement initiatives, but remained above TLS.

Asia Area – annual flying hours = 5,404,154 hours			
Source of Risk	Risk Estimation	TLS	Remarks
Vertical Technical Risk	0.33×10^{-9}	2.5×10^{-9}	Below Technical TLS
Vertical Operational Risk	7.09×10^{-9}	-	-
2020 Vertical Overall Risk	7.42×10^{-9}	5.0×10^{-9}	Above TLS

Table 2: Asia Area Vertical Collision Risk 2020

2.12 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 3**).

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 3: Asia Area Vertical Collision Risk Estimates 2016 - 2020

Asia Area Horizontal Collision Risk

2.13 The estimated horizontal collision risk for 2020 for the Asia area met TLS in all longitudinal and lateral risk categories.

Safety Reporting

2.14 **Table 4** shows the number of LHD, LLD and LLE reports for 2016 to 2020, and the number of reports per flying hours. Total estimated flying hours 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%. The total number of reports approximately halved, from 1094 in 2019 down to 548 in 2020.

2.15 The number of reports per flying hours in 2020 increased from 2019 in China, Indonesia, Japan, South Asia/Indian Ocean (marginally), South West Pacific and Pacific, leading to an overall reporting rate that was slightly improved from the 2019 reporting rate.

2.16 The number of reports per flying hours decreased in Republic of Korea and South East Asia. China, Republic of Korea and South East Asia were among the lowest recorded reporting rates for the region. Data was not available for DPR Korea or Mongolia.

Airspace	# Reports					1 Report : Flying Hrs				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
DPRK	0	0	0	0	0	-	-	-	-	-
Mongolia	0	4	1	2	0	-	1: 37,771	1: 158,891	1: 82,138	-
China	117	134	110	79	85	1: 20,413	1: 18,248	1: 22,229	1: 31,119	1: 26,867
ROK	6	5	12	34	5	1: 93,291	1: 117,090	1: 28,365	1: 18,959	1: 25,965
SEA	426	474	205	152	42	1: 5,884	1: 6,548	1: 17,757	1: 22,275	1: 25,106
Indonesia	32	34	23	37	18	1: 11,520	1: 10,842	1: 53,603	1: 33,321	1: 17,346
Japan	43	71	76	77	66	1: 33,834	1: 21,510	1: 20,632	1: 20,762	1: 14,737
SA/IO	778	935	681	439	152	1: 3,689	1: 3,166	1: 3,783	1: 7,955	1: 7,907
SW Pacific	52	51	53	101	46	1: 16,639	1: 17,572	1: 17,817	1: 9,335	1: 6,954
Pacific	33	42	43	173	134	1: 63,500	1: 54,191	1: 45,064	1: 10,139	1: 6,404
Total	1,487	1,750	1,204	1,094	548	1: 8,905	1: 8,180	1: 12,332	1: 14,330	1: 11,712

Table 4: Total LHD, LLD and LLE Reports, and Reports per Flying Hours, 2016 - 2020

Hot Spots

2.17 **Table 5** summarizes current LHD Hot Spots, the FIRs involved, the year of identification, and status remarks.

Hot Spot	Involved FIRs	Identified	Remarks
A1	Kolkata/Chennai/Dhaka-Yangon	2015	Cat. E LHDs reducing
A2	Chennai – Kuala Lumpur	2015	Cat. E LHDs reducing
B	Incheon (AKARA Airspace)	2015	Cat. E LHDs
D	Manila – all adjacent FIRs	2015	Cat. E LHDs reducing Cat F LHDs emerging
F	Mogadishu – Mumbai	2015	Cat. E LHDs
G	Sanaa/Muscat – Mumbai	2015	Cat. E LHDs (Sanaa improved)
J	Jakarta – Singapore/Kota Kinabalu	2018	Cat. E LHDs, minor and reducing

M	Colombo – Melbourne	2019	Proposed to re-classify as non-hot spot, subject to further data
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Table 5: LHD Hot Spots in the Asia/Pacific Region

AAMA Vertical Safety Report

2.18 The Australia Airspace Monitoring Agency (AAMA) provided an airspace safety review of RVSM airspace risk within the Brisbane, Honiara, Melbourne, Nauru and Port Moresby FIRs. The TLS of 5×10^{-9} had been met, at **0.0017×10^{-9}** .

2.19 The total risk estimate for the Jakarta and Ujung Pandang FIRs at **0.181×10^{-9}** , reflecting the significant decrease in flying hours and occupancy parameters (2019 vertical risk estimate 10.2×10^{-9}).

MAAR Vertical Safety Report

2.20 The Monitoring Agency for the Asian Region (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 2020.

South Asia Indian Ocean Airspace

2.21 The 2020 RVSM risk estimate for SAIO airspace indicated that the TLS had not been met at **15.67×10^{-9}** (Figure 1).

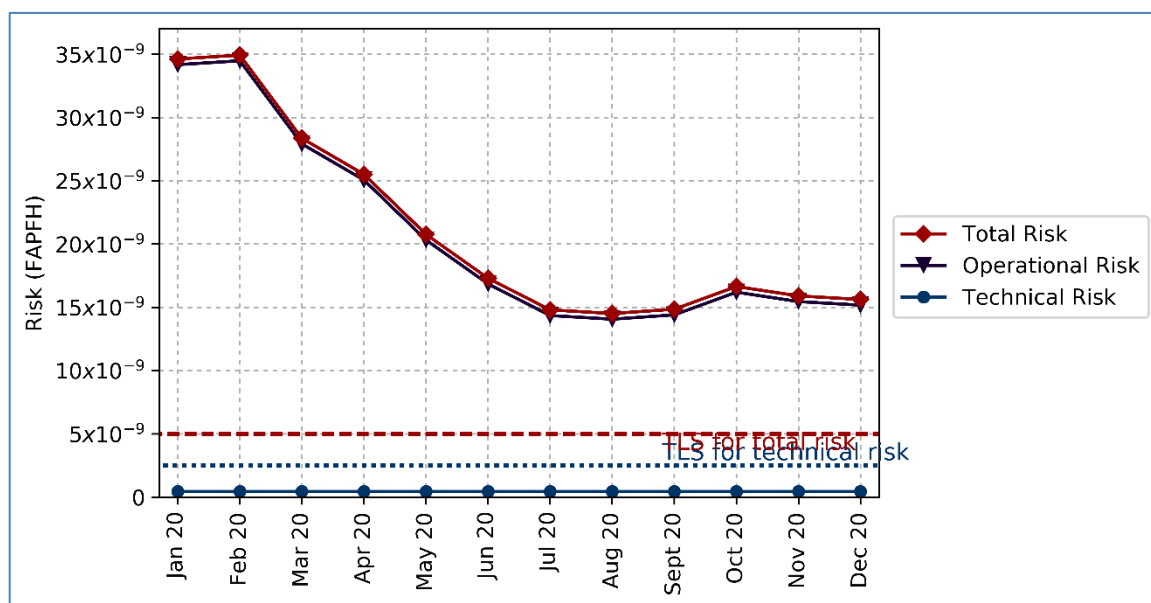


Figure 1: Trends of Risk Estimates for SA/IO Airspace.

2.22 As had been the case in previous years, the vast majority of the 152 LHD cases that reported were Category E events, with 138 (91%). The 65% reduction in numbers of LHDs from 434 in 2019 to 152 in 2020 reflected the 66% decrease in estimated annual flight hours.

2.23 LHD **Hot Spot F** (Mogadishu – Mumbai) and LHD **Hot Spot G** (Sanaa/Muscat – Mumbai) at the western boundary of Mumbai FIR remain as LHD hot spots since 2015. In 2020, the number of non-zero duration LHDs of these hot spots accounted for 62% of all non-zero-duration LHDs of the SAIO airspace and the resultant operational risk of **11.17×10^{-9} FAPFH** accounted for 74% of the total operational risk of the SA/IO airspace.

remained along the boundaries of Manila FIR. A total of 24 LHDs at Manila FIR boundaries accounted for 62% of the number of LHDs in the SEA airspace. The resultant operational risk of 1.05×10^{-9} FAPFH accounted for 74% of the operational risk of the SEA airspace. Two out of three long duration LHDs occurred at Manila FIR boundaries.

2.31 **Figure 3** illustrates the trend of LHDs being reported along Manila FIR boundaries together with the timeline of major safety improvement implementation by Manila ACC and the adjacent units. Since the transition to the new ATM centre in 2018, Manila ACC aimed to continually improve their communication and surveillance capabilities with ADS-C/CPDLC, AIDC and ADS-B technology.

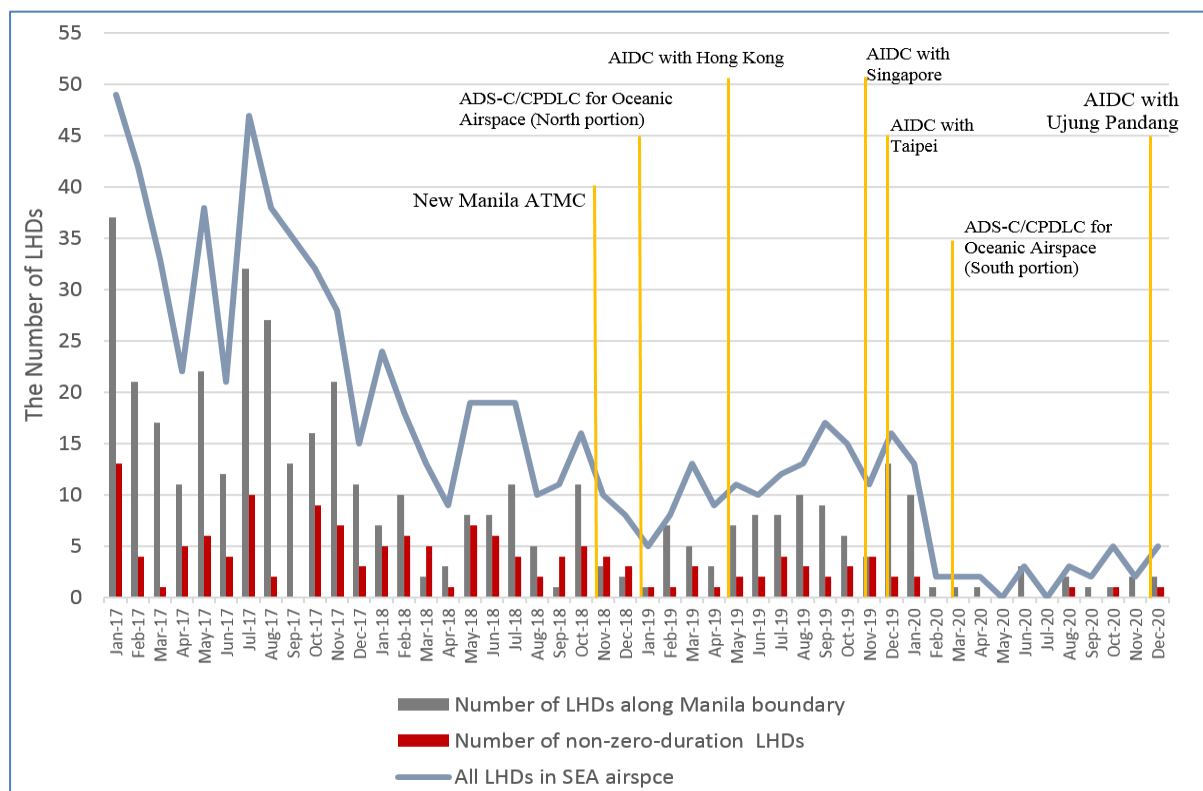


Figure 3: LHDs along Manila FIR Boundary 2017 to 2020

2.32 The number of Category F LHDs slightly decreased from 9 (2019) to 6 LHDs, caused by AIDC system failures and the unsuccessful transfer via AIDC. ICAO noted that system alerts to ATC and robust procedures requiring voice coordination in the event of failure of AIDC message exchange were necessary for all AIDC implementations.

Horizontal Safety Assessments

2.33 Horizontal safety assessments provided by APAC monitoring agencies indicated that the TLS of 5.0×10^{-9} had been met in all FIRs. The contribution of the significantly reduced traffic levels to an overall reduction in the estimated horizontal safety risk across the region was acknowledged. **Table 6** summarizes regional performance-based horizontal risk assessments.

ATC Separation	EMA	2019 Estimated Risk	2020 Estimated Risk
50NM Lateral	BOBASMA	1.59×10^{-9}	0.64×10^{-9}
	JASMA	1.45×10^{-9}	0.65×10^{-9}
	SEASMA	0.012×10^{-9}	0.012×10^{-9}
50NM Longitudinal	BOBASMA	4.97×10^{-9}	0.87×10^{-9}
	SEASMA	0.38×10^{-9}	0.38×10^{-9}

Table 6: Comparison of Horizontal Risk Assessments

RASMAG Safety Bulletin Issue 02

2.34 MAAR informed the meeting of the publication of RASMAG Safety Bulletin Issue 02. The Bulletin, designed to capture some guidance and recommendations provided in the second edition of ICAO Doc 10037 *Global Operational Data Link (GOLD) Manual*, was published on the ICAO Asia/Pacific Regional Office eDocuments web-page at <https://www.icao.int/apac/pages/edocs.aspx> (ATM section, Safety Monitoring Sub-Section).

Identification of Non-Approved Airframes Operating in RVSM Airspace

2.35 AAMA informed the meeting of non-RVSM approved airframes indicating RVSM approval status over a period of three months or more. 10 airframes were identified, including six from Australia, and one each from Greece, India, Papua New Guinea and United States. The airframe from India (IN320, Indian Navy, i.e. a State aircraft) and the airframe from Papua New Guinea (M2ZMY) had been operating in RVSM airspace without RVSM approval for 12 months or more.

2.36 Similarly, JASMA reported a total of 21 airframes operating in the RVSM airspace of Fukuoka FIR with no registration of RVSM in the approval databases as of June 2021, including one each from Canada, China, Indonesia and the Solomon Islands, two from Malaysia and 14 from USA. Almost all of the listed aircraft were identified only once in the period from January to June 2021.

2.37 MAAR presented the result of an annual audit that detected 19 aircraft that operated in RVSM airspace without valid RVSM approvals in the RMA's database. The reduction from 26 in the previous year's audit was likely to be due to the reduction of flights during the COVID-19 pandemic. India had the highest number of aircraft on the list (12, all domestic flights and increased from eight reported to RASMAG/25). Others were from Indonesia (four), Australia (one) and Malaysia (two)

2.38 Brunei Darussalam, Myanmar and Pakistan did not submit annual RVSM data snapshots. Myanmar and Viet Nam had not adopted the new F2 form, which included PBCS approvals information.

2.39 Non-approved aircraft detected by China RMA were from Australia (three), Hong Kong China (one), Indonesia (nine), Philippines (three), Republic of Korea (one) and USA (two).

RMAs' 'W' Verification of State Aircraft

2.40 The RASMAG Chair presented a paper addressing an action item from the RMACG/14 meeting, which asked all RMAs to request clarification from their respective PIRGs on responsibilities of the RMA regarding verification of the approval status of State aircraft (military and other government aircraft performing non-commercial, sovereign functions) and their relation to civil authorities.

2.41 APAC RMAs currently conducted monthly or annual audits of the use of the 'W' designator in flight plans, including the flight plans of State aircraft, against the global snapshot of all RMAs' approval records. Aircraft that included 'W' in flight plans but did not have matching RVSM approval were generally called 'rogue' aircraft. The rogue aircraft that persistently remained on the list were mostly State aircraft. In order for the rogue State aircraft to be removed from the list either the State aircraft's approval data had to be provided to the designated RMA, or the State aircraft operator had to stop using 'W' in item 10 of the ICAO flight plan.

2.42 **Table 7** summarized the effects on stakeholders if the RMAs discontinued the audit process with respect to State aircraft:

Stakeholder	Pros	Cons
State CAA	No requirement to try to liaise with its State aircraft operators regarding their RVSM approval status, which can be viewed as going beyond their scope of responsibilities.	Increased risk in the oversight airspace if any rogue State aircraft enter the airspace.
ATSP	Simpler procedure as there is no need to re-confirm RVSM approval status of rogue State aircraft.	Increased risk in its airspace if any rogue State aircraft enter the airspace.
Civil aircraft operators	-	Increased risk of mid-air collision from being provided with 1,000 ft separation near rogue State aircraft that <u>do not</u> satisfy all RVSM safety requirements.
State aircraft operators	Less likely to be penalized by being treated as non-RVSM approved while they might genuinely satisfy all RVSM safety requirements	Increased risk of mid-air collision from being provided with 1,000 ft separation if they actually <u>do not</u> satisfy all RVSM safety requirements
RMA	Less workload associated with handling rogue State aircraft	-

Table 7: Effect of RMA discontinuance of auditing State aircraft RVSM compliance.

2.43 In discussion, the meeting noted that some States or their RMAs were not permitted to share RVSM approval data for State aircraft.

2.44 Noting that there was a ‘political’ dimension that warranted the matter be discussed by APANPIRG, the meeting agreed to a Draft Conclusion for consideration by APANPIRG/32:

2.45 The Draft Conclusion was presented to ATM/SG/9 for endorsement. ATM/SG/9 did not endorse the Draft Conclusion:

2.46 While noting the need for RVSM approval for all aircraft that included the RVSM indicator in flight plans, for the safety of operations in the airspace, the ATM/SG/9 meeting considered that there would be considerable difficulty in sharing data on State aircraft outside the State. Items 1a. and 1b. of the Draft Conclusion (see next page) were not supported by ATM/SG, but the remainder was acceptable.

Draft Conclusion RASMAG/26-3: RVSM Approvals Data and Filing of RVSM Indicator in Flight Plans of State Aircraft	
<p>What: That, States are urged to:</p> <ol style="list-style-type: none"> 1. liaise with their State aircraft operators to: <ol style="list-style-type: none"> a. share State aircraft RVSM approval data with the designated RMA where State aircraft RVSM approval processes are implemented; b. confirm the RVSM approval status of State aircraft when queried by the RMA; and c. not file ‘W’ in item 10 of the ICAO flight plan of aircraft that are not approved for RVSM; and 2. respond to a survey on RMA and State responsibility on the 	<p>Expected impact:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical

matter of RVSM approvals of State aircraft.		
Why: To improve airspace safety by ensuring that only RVSM-approved State aircraft file the RVSM ‘W’ indicator in filed flight plans, and facilitating the monitoring of RVSM approvals and performance of State aircraft by Regional Monitoring Agencies		Follow-up: <input checked="" type="checkbox"/> Required from States
When: 2-Dec-21	Status: Draft to be adopted by PIRG	
Who: <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input checked="" type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: RASG		

In APANPIRG/32 discussion, the Draft Conclusion initially proposed by RASMAG/26, India stated that, while best efforts would be made to liaise with military authorities on this matter, it did not support the inclusion of items 1a and 1b which urged States to liaise with their State aircraft operators to a) share State aircraft RVSM approval data with the designated RMA; or b) to confirm the RVSM approval status of State aircraft when queried by the RMA. The following Conclusion, revised from the original Draft Conclusion in order to reach consensus, was agreed by the meeting:

Conclusion APANPIRG/32-6: RVSM Approvals Data and Filing of RVSM Indicator in Flight Plans of State Aircraft		
What: That, States are urged to:		Expected impact:
1. liaise with their State aircraft operators to not file ‘W’ in item 10 of the ICAO flight plan of aircraft that are not approved for RVSM; and		<input checked="" type="checkbox"/> Political / Global
2. respond to a survey on RMA and State responsibility on the matter of RVSM approvals of State aircraft.		<input checked="" type="checkbox"/> Inter-regional
		<input type="checkbox"/> Economic
		<input type="checkbox"/> Environmental
		<input checked="" type="checkbox"/> Ops/Technical
Why: To improve airspace safety by ensuring that only RVSM-approved State aircraft file the RVSM ‘W’ indicator in filed flight plans, and facilitating the monitoring of RVSM approvals and performance of State aircraft by Regional Monitoring Agencies		Follow-up: <input checked="" type="checkbox"/> Required from States
When: 3-Dec-21	Status: Adopted by PIRG	
Who: <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input checked="" type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: RASG		

APAC Consolidated LTHM Burden Estimate

2.47 MAAR presented the overview of Long Term Height Monitoring (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 2021, yielded a remaining monitoring burden of 422 aircraft, which was a 5% increase since 2019.

2.48 MAAR had a total of 294 aircraft remaining to be monitored, which accounted for 70% of all aircraft remaining to be monitored in the APAC Region. Pakistan had the highest percentage of remaining monitoring burden at 61%.

2.49 70 aircraft remained to be monitored by AAMA, accounting for 17% of the APAC remaining monitoring burden. Australia’s remaining monitoring burden had decreased 13%. Indonesia had a 41% remaining monitoring burden.

2.50 46 aircraft remained to be monitored by China RMA, accounting for 11% of all remaining aircraft to be monitored in APAC – a 44% decrease since RASMAG/25.

2.51 11 aircraft remained to be monitored by JASMA, accounting for only 3% of all aircraft remaining to be monitored in the APAC Region. There was only 1 aircraft remaining to be monitored by PARMO, accounting for only 0.2% of the remaining regional monitoring burden.

2.52 **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	2019%	2020%
Pakistan (MAAR)	46%	61%
India (MAAR)	46%	51%
Solomon Islands (AAMA)	0%	50%
Philippines (MAAR)	43%	48%
Nepal (MAAR)	45%	46%
Afghanistan (MAAR)	85%	42%
Indonesia (AAMA)	42%	41%
Bhutan (MAAR)	40%	40%
Bangladesh (MAAR)	14%	36%
Malaysia (MAAR)	26%	33%
Papua New Guinea (AAMA)	8%	31%
Mongolia	14%	30%

Table 8: Remaining LTHM Monitoring Burden \geq 30% or more

2.53 While noting that RASMAG/23 had agreed that States with a remaining burden 30% or more would be proposed to be added to the APANPIRG Deficiencies List, MAAR observed that operators had been trying to fulfil their height monitoring requirements but could not do so due to the unavailability of Enhanced GPS-based Monitoring Unit services during the pandemic. It was therefore proposed that consideration of new deficiencies be delayed until an alternative means of height monitoring became available.

2.54 However, the RASMAG Chair noted that if the pandemic effects continued the monitoring burden may continue to become more serious. There were other ways to obtain height monitoring data, particularly from ANSPs, that may help to relieve the burden. RMAs were strongly encouraged to investigate available means to obtain data. MAAR was prepared to assist in this matter. The meeting further noted that the risks of not taking action to record Deficiencies could result in increased safety risks if and when some normal level of traffic resumed. It was therefore proposed that the meeting report include the statement that new Deficiencies would be recorded by RASMAG/27.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note;
 - i. **Conclusion RASMAG/26-1: FANS1/A CPDLC Latency Timer Value;**
 - ii. **Conclusion RASMAG/26-2: RVSM MMR Update;**
 - iii. **Conclusion APANPIRG/32-6: RVSM Approvals Data and Filing of RVSM Indicator in Flight Plans of State Aircraft.**
- b) note the overall data link ASP and ACP for the Asia/Pacific Region;
- c) note the overall vertical and horizontal safety risk estimates for the Asia/Pacific Region, and particularly the APAC Consolidated Safety Report;

- d) note the overall improvement in LHD, LLD and LLE safety reports per flight hours in the APAC region, which however included low and/or significantly decreased reporting rates among some States/sub-regional areas;
- e) note the increased regional LTHM burden, pandemic-related constraints affecting the addressing of LTHM burden, and the planned identification of new ATM and Airspace Deficiencies in this regard, deferred by one year until 2022 (RASMAG/27); and
- f) discuss any other relevant matters as appropriate.

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