



International Civil Aviation Organization

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Twenty-Seventh Meeting of the Regional Airspace Safety  
Monitoring Advisory Group (RASMAG/27)

Video Teleconference, 22 – 25 August 2022

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**Agenda Item 5: Airspace Safety Monitoring Activities/Requirements in the Asia/Pacific Region**

**APAC CONSOLIDATED LTHM COMPLIANCE STATUS**

(Presented by MAAR)

**SUMMARY**

This paper presents an overview of Long-Term Height Monitoring (LTHM) compliance status in the Asia Pacific (APAC) Region, including assessments of five Asia Pacific RMAs - AAMA, CHINA RMA, JASMA, PARMO and MAAR. The assessment, which was based on RVSM approval data as of 30th June 2022, yields the remaining monitoring burden in the APAC region of **535 528**, **27% 25%** increase from 2020. Even though 8 States have remaining monitoring burden of 30% or more, MAAR proposes delaying the deficiency list consideration due to unavailability of on-board monitoring (EGMU). Please note that EGMU monitoring service is expected to resume in September 2022. Therefore, these 8 States are urged to remind their operators to fulfill the monitoring requirements by next year.

**1. INTRODUCTION**

1.1 During the 7th meeting of the Monitoring Agency Working Group (MAWG/7) in February 2020, APAC RMAs agreed to present a consolidated report of LTHM compliance status to the next RASMAG meeting. After the agreement, MAAR has volunteered to prepare the consolidated LTHM compliance report since RASMAG/25 until the present.

**2. DISCUSSION**

2.1 The APAC Consolidated LTHM compliance status is compiled in a presentation format, which is attached to this paper.

APANPIRG List of Deficiencies Consideration

Removal Proposal

2.2 As Afghanistan's remaining monitoring burden has dropped from 42% reported in RASMAG/26 to 14% this year, the MAAR would like RASMAG to propose to APANPIRG to consider removing Afghanistan from the APANPIRG List of Deficiencies.

Inclusion Proposal

2.3 RASMAG/23 agreed that States that fail to meet monitoring requirements with the remaining burden of 30% or more are considered candidates to be proposed to be on the APANPIRG List of Deficiencies. The following table summarizes the States that have **remaining monitoring burden over 30%** in 2021.

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 1:** List of States having monitoring burden over 30% as of 30 June 2022

2.4 Most of the aircraft operators that have not fulfilled the height monitoring requirement are mostly General Aviation (GA) operators. Most of them are used for domestic operations, which require EGMU service to fulfil the monitoring requirement.

2.5 Since EGMU service remained unavailable in the past year, MAAR would like to propose delaying the deficiency list consideration until RASMAG/28.

2.6 Please note that MAAR has resumed the EGMU service in the Philippines in June 2022 and will soon resume the service in September 2022 for the rest of the States. In addition, MAAR is starting a trial with FlightRadar24 and initiated a discussion with FlightAware in order to use their data for height monitoring purposes.

#### Recommendations for States and Operators

2.7 APAC States are urged to notify their RMAs of the changes (transferred/de-registered aircraft) in a timely manner as this will have an impact on the number of aircraft needed to be height monitored.

2.8 There might be some aircraft with ADS-B Out capability, but cannot fly into airspace under ADS-B Height Monitoring System (AHMS) coverage. The operators that have ADS-B-Out equipped aircraft but still have not fulfilled their monitoring requirements should consult the respective RMAs for other feasible arrangements.

2.9 As mentioned in 2.6, Operators with ADS-B-Out capable aircraft, especially those who are already subscribing to FlightRadar24 or FlightAware data services, are encouraged to contact MAAR to discuss an alternative arrangement for height monitoring.

### **3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) note the information contained in this paper, especially the recommendations in 2.7 - 2.9;
- b) endorse the proposal outlined in 2.2 and 2.5; and
- c) discuss any relevant matters as appropriate.

# 2021 Asia Pacific Consolidated Long-Term Height Monitoring Compliance Status Report

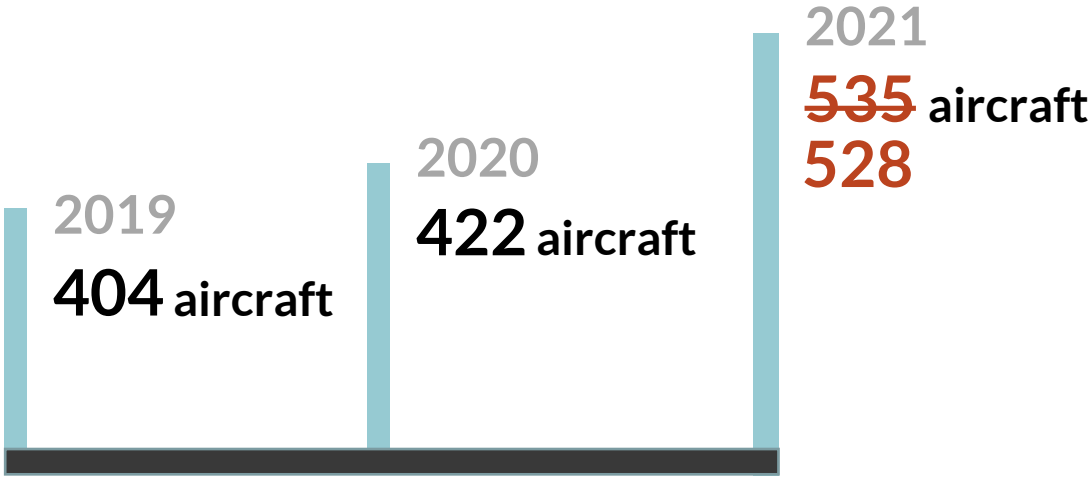
Asia Pacific EMAs/RMAs

Prepared by MAAR for RASMAG/27

# Objective

To provide an overview of LTHM compliance status for the Asia Pacific region in terms of the remaining monitoring burden of States under each Asia Pacific RMA based on RVSM approval data as of **the 30th of June, 2022**

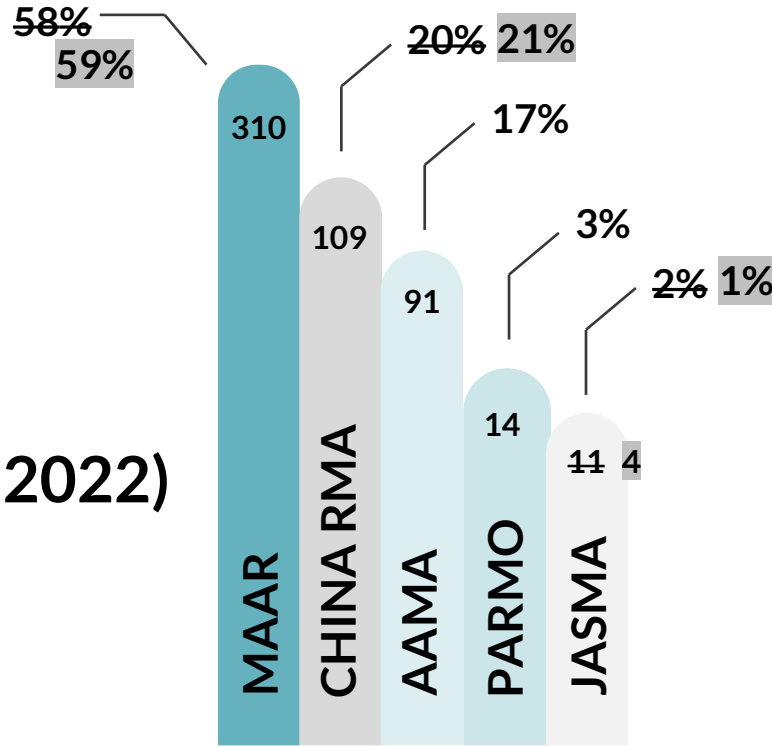
# No. of Aircraft Remaining to be Monitored 2019-2021



In 2021, the total number of aircraft remaining to be monitored in APAC increased from 2020 by ~~27%~~ 25%

% = A/C remaining to be monitored / A/C required to be monitored

**2021**  
(Up to June 2022)



% = # Aircraft remaining to be monitored / # Aircraft required to be monitored

Total ~~535~~ aircraft  
**528**

# of Aircraft remaining to be monitored

# MAAR

## 310 aircraft remaining to be monitored

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- Accounts for 58% 59% of all aircraft remaining to be monitored in APAC
- Pakistan has the highest percentage of remaining monitoring burden at 73%.
- 70% of Pakistan operators contacted the MAAR for EGMU treatment.
- MAAR has resumed the EGMU service in the Philippines in June 2022 and will soon resume the service in September 2022 for the rest of the States.
- A number of Indian aircraft have received EGMU services provided by MIDRMA – this slightly reduced the remaining monitoring burden of India.
- MAAR is starting a trial with FlightRadar24 and initiated a discussion with FlightAware in order to use their data for height monitoring purposes.

# China RMA

## 109 aircraft remaining to be monitored

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- Accounts for ~~20%~~ 21% of all aircraft remaining to be monitored in APAC (more than 2 times increase from RASMAG26)
- An increase in the percentage of monitoring burden is possibly due to the overall number of China RMA aircraft that has increased 10% from RASMAG26.
- However, ADS-B ground-based system along with EGMU service should be able to reduce the remaining monitoring burden.

# AAMA

## 91 aircraft remaining to be monitored

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- Accounts for 17% of all aircraft remaining to be monitored in APAC
- Australia has a 10% increase in remaining monitoring burden.
- Solomon Islands and Papua New Guinea have remaining monitoring burden of 50% and 46% respectively.
- The monitoring burden percentage of Vanuatu has increased to over 30%.
- The high percentage of Solomon Islands and Vanuatu is due to the small overall number of aircraft.
- Indonesia has 52% remaining monitoring burden (11% increase from RASMAG26).

# PARMO

## 14 aircraft remaining to be monitored

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- Accounts for 3% of all aircraft remaining to be monitored in APAC
- Space-Based ADS-B (SBA) data was used to monitor several aircraft and could clear a number of unmonitored aircraft from the monitoring burden list.

# JASMA

## 4 aircraft remaining to be monitored

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- Accounts for ~~2%~~ 0.7% of all aircraft remaining to be monitored in APAC

# States with >30% remaining burden

Same as 2020

States	2020	2021
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%

# States with >30% remaining burden

## New Entries in 2021

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States	2020	2021
Vanuatu (AAMA)	0%	100%

# Deficiencies: Removal Proposal

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States	2020	2021
Afghanistan (MAAR)	42%	14%

- As Afghanistan's remaining monitoring burden has dropped from 42% reported in RASMAG/26 to 14% this year, the MAAR would like RASMAG to propose to APANPIRG to consider removing Afghanistan from the APANPIRG List of Deficiencies.

# Deficiency List Proposal

- RASMAG/23 agreed that States with remaining burden >30% will be proposed to be listed on the APANPIRG List of Deficiencies (ANS).
- Since EGMU service remained unavailable in the past year, MAAR would like to propose delaying the deficiency list consideration until RASMAG/28.

# Recommendations for States and Operators

- States should provide an update to their RMAs regarding any changes to their fleets as it will affect the monitoring burden calculation.
- Operators with ADS-B-Out capable aircraft that have not fulfilled their monitoring requirements should consult the respective RMAs regarding ADS-B height monitoring.
- Operators with ADS-B-Out capable aircraft, especially those already subscribing to FlightRadar24 and FlightAware, are encouraged to contact MAAR to discuss an alternative arrangement for height monitoring.