

# 48<sup>th</sup> Meeting of the Informal Pacific Air Traffic Services Coordinating Group (IPACG/48)

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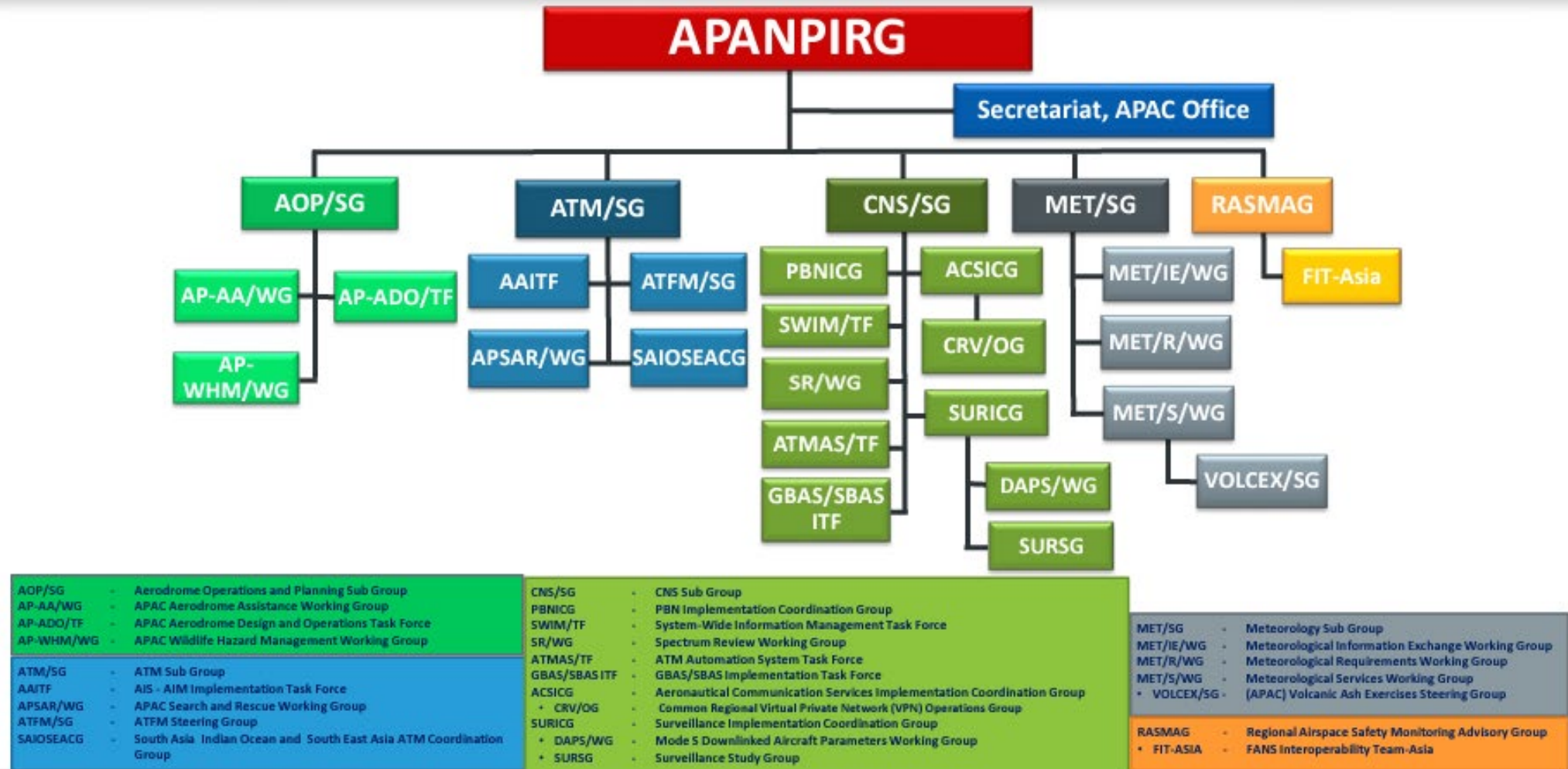
## **Monitoring Agency Activities in North Pacific Airspace (IP/03)**

September 2023

# Overview

- RASMAG/28 Conclusions and relevant information
- EMAs and RMAs
  - Japan Airspace Safety Monitoring Agency (JASMA)
  - Pacific Approvals Registry and Monitoring Organization (PARMO)
- JASMA and PARMO EMA & RMA activities
  - Summary of JASMA and PARMO reports to RASMAG/28
  - Current status of identified “Hot Spots”

# RASMAG/28 Conclusions and Relevant Products



15/3/2023



ICAO

Twenty-Eighth Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/28)  
ICAO Asia and Pacific Regional Office, Bangkok, Thailand, 21 - 24 August 2023





# Draft Conclusion RASMAG/28-1

Draft Conclusion RASMAG/28-1: Formal Service Arrangements with CRA		
What: That, States are urged to ensure that formal service arrangements are made with an APANPIRG-recognized, competent Central Reporting Agency for the submission and analysis of data link problem reports.		Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input checked="" type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: To ensure States meet their obligations for data link performance monitoring and analysis in accordance with Annex 6 Part I 7.1.5 and 7.3.4, and Annex 11 2.29 and 3.3.5.2	Follow-up: <input checked="" type="checkbox"/> Required from States	
When: 24-Aug-2324-Aug-23	Status: Subgroup	Adopted by SubgroupAdopted by
Who: <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: APANPIRG		

# Draft Conclusion RASMAG/28-2

<b>Conclusion RASMAG/28-2: Revised Survey of the Status of Current and Planned Implementation of Performance-Based Separation Minima</b>			
What: That, The revised <i>Survey of the Status of Current and Planned Implementation of Performance-Based Separation Minima</i> at <b>RASMAG/28 WP/2 Attachment B</b> be uploaded to the ICAO Asia/Pacific Regional Office website to replace the existing version.		Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical	
Why: To rationalize and simplify the survey questions		Follow-up: <input checked="" type="checkbox"/> Required from States	
When: 24-Aug-23		Status: Adopted by Subgroup Subgroup	
Who: <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other: Aircraft operators			

# Draft Conclusion RASMAG/28-3

Conclusion RASMAG/28-3: Guidance Material for the Continued Safety Monitoring of the Asia Pacific RVSM Airspace Version 2			
What: That,  1. the Guidance Material for the Continued Safety Monitoring of the Asia Pacific RVSM Airspace Version 2 be adopted; and  2. the Guidance Material Version 2 be uploaded to the ICAO APAC website to replace the existing version.		Expected impact:  <input type="checkbox"/> Political / Global  <input type="checkbox"/> Inter-regional  <input type="checkbox"/> Economic  <input type="checkbox"/> Environmental  <input checked="" type="checkbox"/> Ops/Technical	
Why: To update the Guidance Material to include current practices of the RASMAG, contents from the LHD Material Package, recent APANPIRG conclusions and decisions since its first publication in 2019		Follow-up: <input type="checkbox"/> Required from States	
When: 24-Aug-23		Status: Adopted by Subgroup	
Who: <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: APAC			



# Draft Conclusion RASMAG/28-4

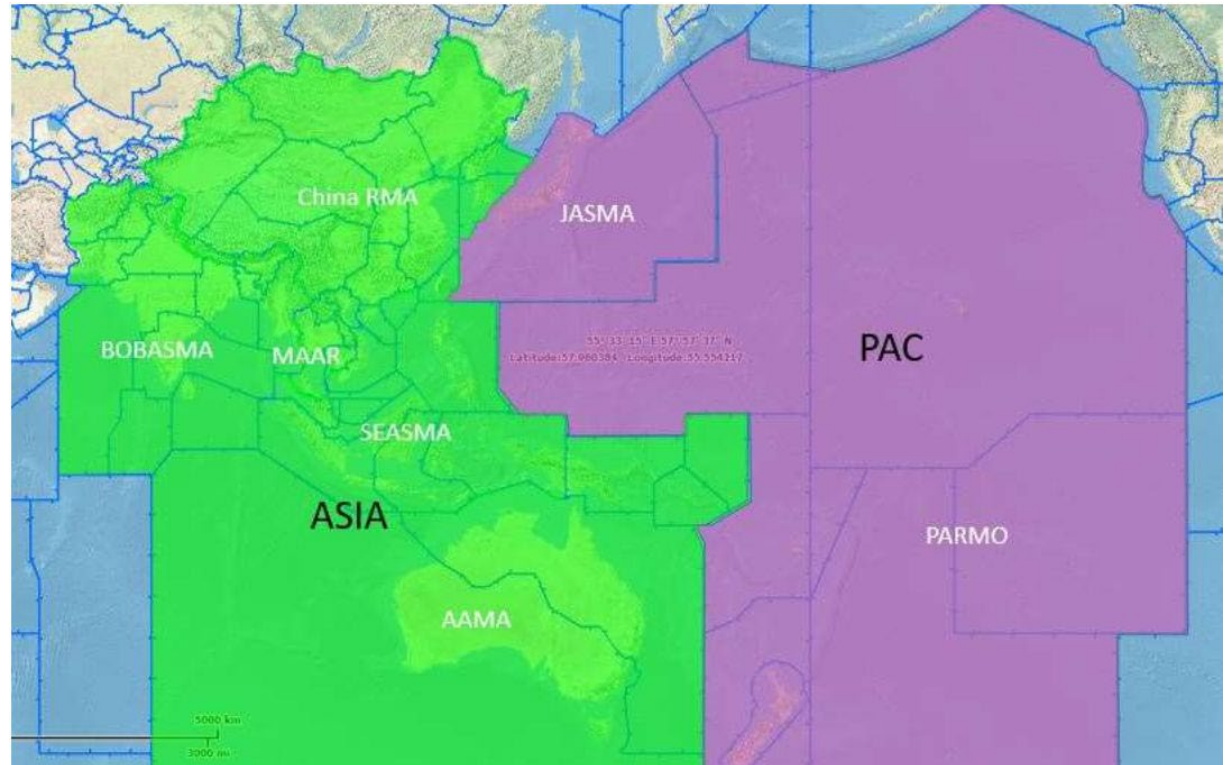
Conclusion RASMAG/28-4 : Removal of EMA handbook Appendix A and Guidance for PBCS Non-Compliance Reporting		
<p>What: That,</p> <p>1. the removal of EMA Handbook Appendix A - <i>Asia Pacific Flight Information Regions and Responsible Monitoring Agency</i> (RASMAG/28 WP/22 refers); and</p> <p>2. the additional guidance for PBCS Non-compliance reporting; be included in amendments to the following:</p> <p>a) EMA Handbook; and</p> <p>b) PBCS Action List for ANSPs; and</p> <p>3. The above-mentioned documents be uploaded to the Asia/Pacific Regional Office website, to replace the previous versions.</p>		<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global</p> <p><input type="checkbox"/> Inter-regional</p> <p><input type="checkbox"/> Economic</p> <p><input type="checkbox"/> Environmental</p> <p><input checked="" type="checkbox"/> Ops/Technical</p>
<p>Why: Lack of a standardized implementation of non-compliance reporting practices would become universally adopted and consistent reporting among the States and RMAs.</p>	<p>Follow-up: <input checked="" type="checkbox"/> Required from States</p>	
<p>When: 24-Aug-23</p>	<p>Status: Adopted by Subgroup</p>	
<p>Who: <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: Regional Monitoring Agencies</p>		

# Draft Conclusion RASMAG/28-5

<b>Conclusion RASMAG/28-5: Survey for Asia Pacific States PBCS Approval Process</b>		
What: That, ICAO conducts a survey seeking information to better understanding by RASMAG and FIT-Asia of the PBCS approval process of APAC member states to ensure the PBCS approvals issued are in accordance with Annex 6 and PBCS manual Doc 9869 chapter 4.		Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: Only some APAC States have indicated using direct Operational Approval Process for PBCS and it is unclear what other process are employed.	Follow-up: <input checked="" type="checkbox"/> Required from States	
When: 8-Sep-23	Status: Adopted by Subgroup	
Who: <input type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other:		

# PAC: Pacific Area

- **Name** : Pacific (PAC) area
- **Traffic** : Traffic between North America and Asia, or North America and South Pacific States.
- **FIRs** : Anchorage, Auckland, Fukuoka, Nadi, Oakland, and Tahiti FIRs
- **Monitoring Agencies** :
  - RMAs : JASMA, PARMO
  - EMAs : JASMA, PARMO



# JASMA

- Japan Airspace Safety Monitoring Agency (JASMA);  
<https://www.jasma.jp/>
- A service provided by the Civil Aviation Bureau (CAB), Ministry of Land, Infrastructure Transport and Tourism-(MLIT)- Japan.
- The Air Traffic Control Association Japan (ATCA-J) and the Electronic Navigation Research Institute (ENRI) support its operation in close coordination with JCAB as team members
- Regional Monitoring Agency (RMA)
  - Established by APANPIRG to support continued safe-use of the RVSM in Fukuoka FIR in September 2007
- Enroute Monitoring Agency (EMA)
  - JASMA was established as an EMA with airspace monitoring responsibility for the Fukuoka FIR in September 2011

# PARMO

- Pacific Approvals Registry and Monitoring Organization (PARMO),  
[https://www.faa.gov/air\\_traffic/separation\\_standards/parmo/](https://www.faa.gov/air_traffic/separation_standards/parmo/)
- A service provided by U.S. Federal Aviation Administration (FAA) William J. Hughes Technical Center (WJHTC)
- RMA
  - Airspace monitoring responsibility for the Auckland, Anchorage, Incheon, Nadi, Oakland and Tahiti FIRs
- EMA
  - Airspace monitoring responsibility for the Auckland, Anchorage, Nadi, Oakland and Tahiti FIRs



# JASMA & PARMO Reports to RASMAG/28

# PAC : Vertical Collision Risk Estimates

2016 - 2022

Year	Vertical Overall Risk Estimate	Remark
2022	$19.62 \times 10^{-9}$ FAPFH	Above TLS
2021	$19.74 \times 10^{-9}$ FAPFH	Above TLS
2020	$16.71 \times 10^{-9}$ FAPFH	Above TLS
2019	$30.21 \times 10^{-9}$ FAPFH	Above TLS
2018	$19.40 \times 10^{-9}$ FAPFH	Above TLS
2017	$7.30 \times 10^{-9}$ FAPFH	Above TLS
2016	$5.01 \times 10^{-9}$ FAPFH	Above TLS

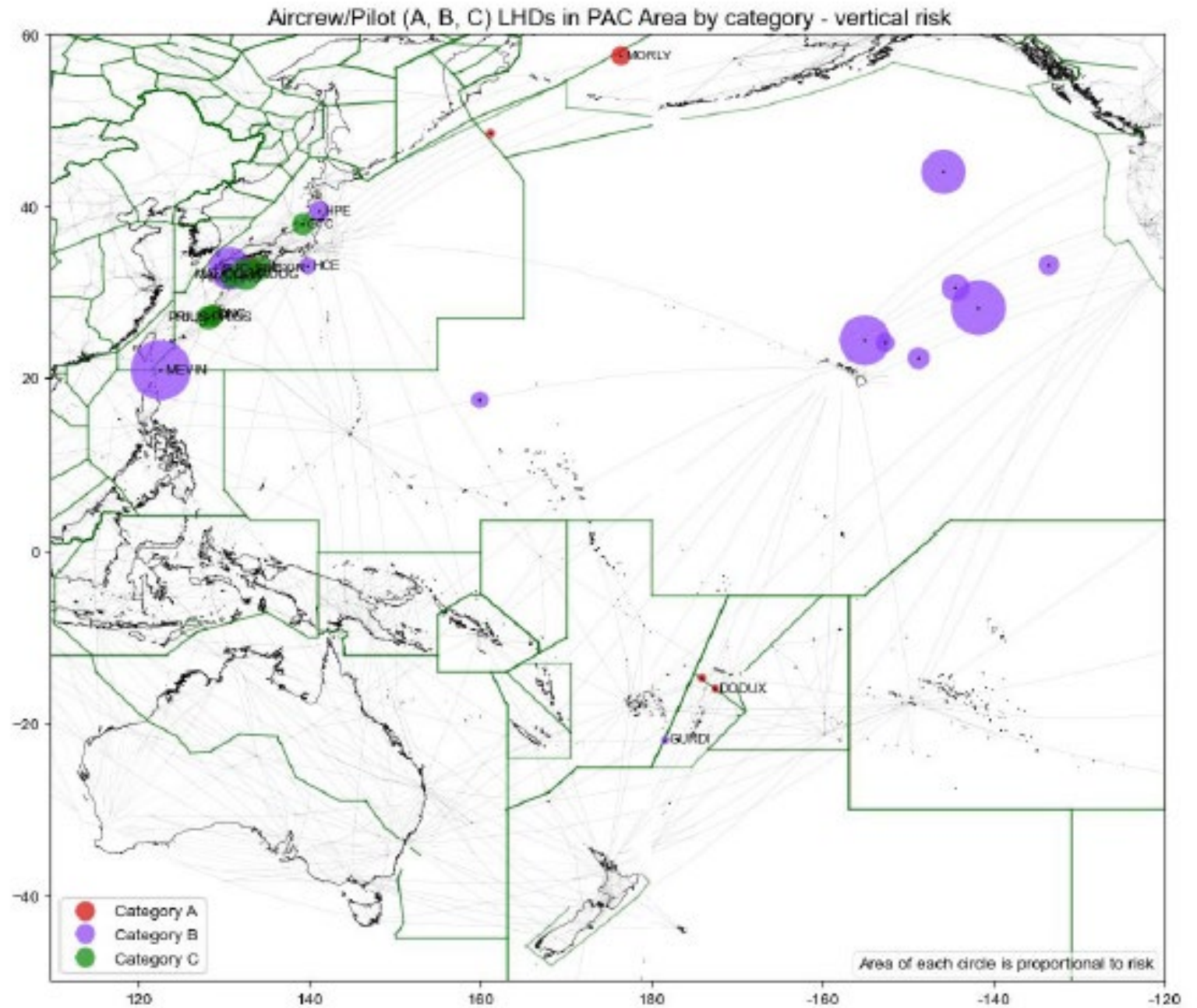
# PAC : Summary of LHDs

Attributions	Category Code	Description	Number of Occurrences	Duration (minutes)	Number of Levels Crossed
Aircrew/ Pilot	A	Flight crew failing to climb/descend the aircraft as cleared	6	5	5
	B	Flight crew climbing/descending without ATC Clearance	22	13	45
	C	Incorrect operation or interpretation of airborne equipment	6	8	5
ATC	D	ATC system loop error	8	63	12
	E	Coordination errors in the ATC-to-ATC transfer of control responsibility as a result of human factors issues	48	197	0
	F	Coordination errors in the ATC-to-ATC transfer of control responsibility as a result of equipment outage or technical issues	3	8	1
Aircraft/ Avionics/ Contingencies	G	Aircraft contingency event leading to sudden inability to maintain assigned flight level	3	7	5
	H	Airborne equipment failure leading to unintentional or undetected change of flight level	3	2	0

# PAC : Summary of LHDs

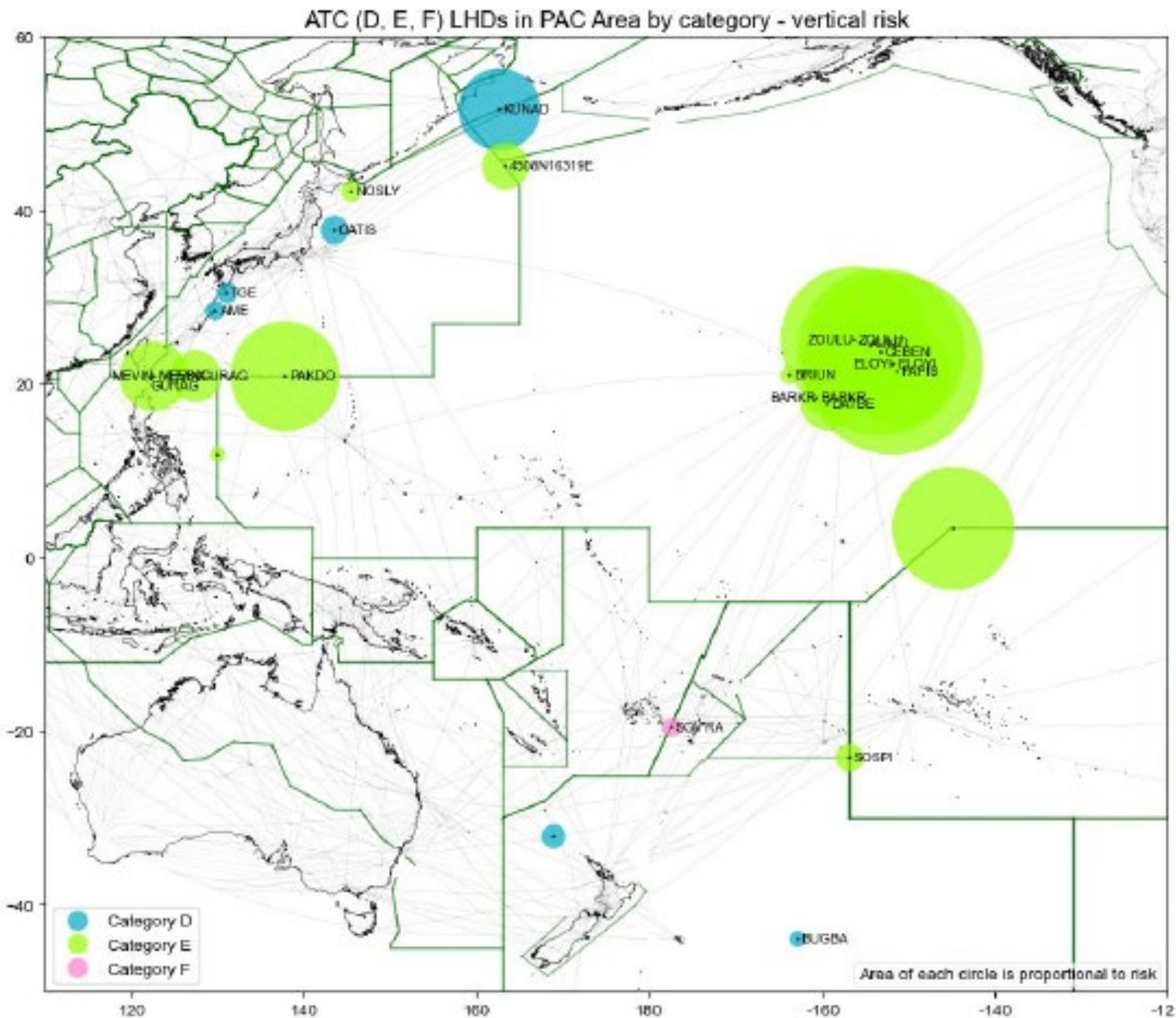
Attributions	Category Code	Description	Number of Occurrences	Duration (minutes)	Number of Levels Crossed
Weather/ Turbulence	I	Turbulence or other weather related causes leading to unintentional or undetected change of flight level	11	35	1
TCAS	J	TCAS resolution advisory, flight crew correctly climb or descend following the resolution advisory	5	7	0
	K	TCAS resolution advisory, flight crew incorrectly climb or descend following the resolution advisory	0	0	0
Other	L	An aircraft being provided with RVSM separation is not RVSM approved	0	0	0
	M	Other	3	104	0
Total			118	449	74

PAC:  
Aircrew/Pilot  
LHD  
Categories  
(A/B/C)





# PAC: ATC LHD Categories (D/E/F)



## Designated “Hot Spots” – Current Status

Hot Spot	Involved FIRs	Identified	Remarks
A1	Kolkata/Dhaka-Yangon	2015	Cat. E LHDs. Risk reduced.
A2	Chennai – Yangon/Kuala Lumpur	2015	Cat. E LHDs reduced. Risk reduced. Potential non-hot spot 2023 (RASMAG/28)
B	Incheon (AKARA Airspace)	2015	- Risk at Incheon-Fukuoka interface mitigated. - Cat. E LHDs and risk at Incheon-Shanghai interface reduced
D	Manila – all adjacent FIRs	2015	- Cat. E LHDs and risk at Manila/Fukuoka FIR boundary reduced. - Risk at all other Manila FIR boundaries mitigated.
F	Mogadishu – Mumbai	2015	Cat. E LHDs reducing. Risk reducing.
G	Sanaa/Muscat – Mumbai	2015	Cat. E LHDs. Risk reducing.
J	Jakarta – Singapore/Kota Kinabalu	2018	Cat. E LHDs.
M	Colombo – Melbourne	2019	LHDs and risk reducing. Awaiting response to establish a POC before removing from the hot spot list.
N	Oakland USA – Hawaii CEP	2019	Cat. E LHDs increasing. Risk increasing
O	Bangkok/Ho Chi Minh/Kuala Lumpur -Singapore	2023	Cat. E LHDs.

❖ *Table 31 from the RASMAG/28 Final Report*

# Hot Spot 'D'

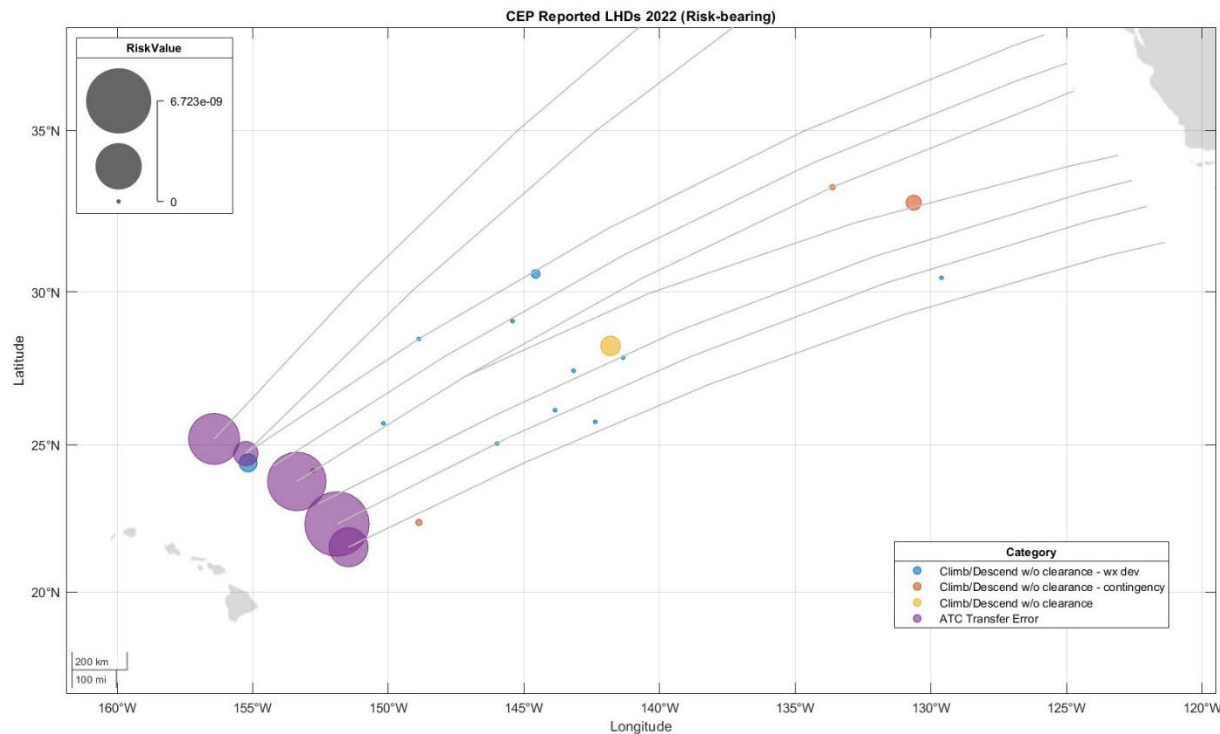
- The Flight Information Region (FIR) boundary between Fukuoka FIR and Manila FIR is identified as a part of **Hot Spot D**.
  - The Category E events (Coordination error in ATC transfer) were the main factors.

Boundary	Number of LHDs			Operational Risk (x 10 <sup>-9</sup> FAPFH)		
	2020	2021	2022	2020	2021	2022
Manila-Kobe/Fukuoka*	8	11	8	4.34	6.40	1.73
Manila-Ho Chi Minh	4	7	3	0	0.77	0.05
Manila-Hong Kong	5	2	1	0.19	0	0
Manila-Kota Kinabalu	2	2	3	0.37	0	0.04
Manila-Sanya	2	0	0	0	0	0
Manila-Singapore	3	2	2	0	0	0.04
Manila-Taibei	3	4	3	0	0.07	0
Manila-Ujung Pandang	0	7	2	0	0.36	0.11
Manila-Oakland	0	2	0	0	0	0

**Trend :** In 2021 and 2022, the total number of LHDs and the operational risk at this hot spot decreased from 2020. In 2022, the LHDs and the associated risk frequently occurred at **Manila-Fukuoka FIR boundary**.

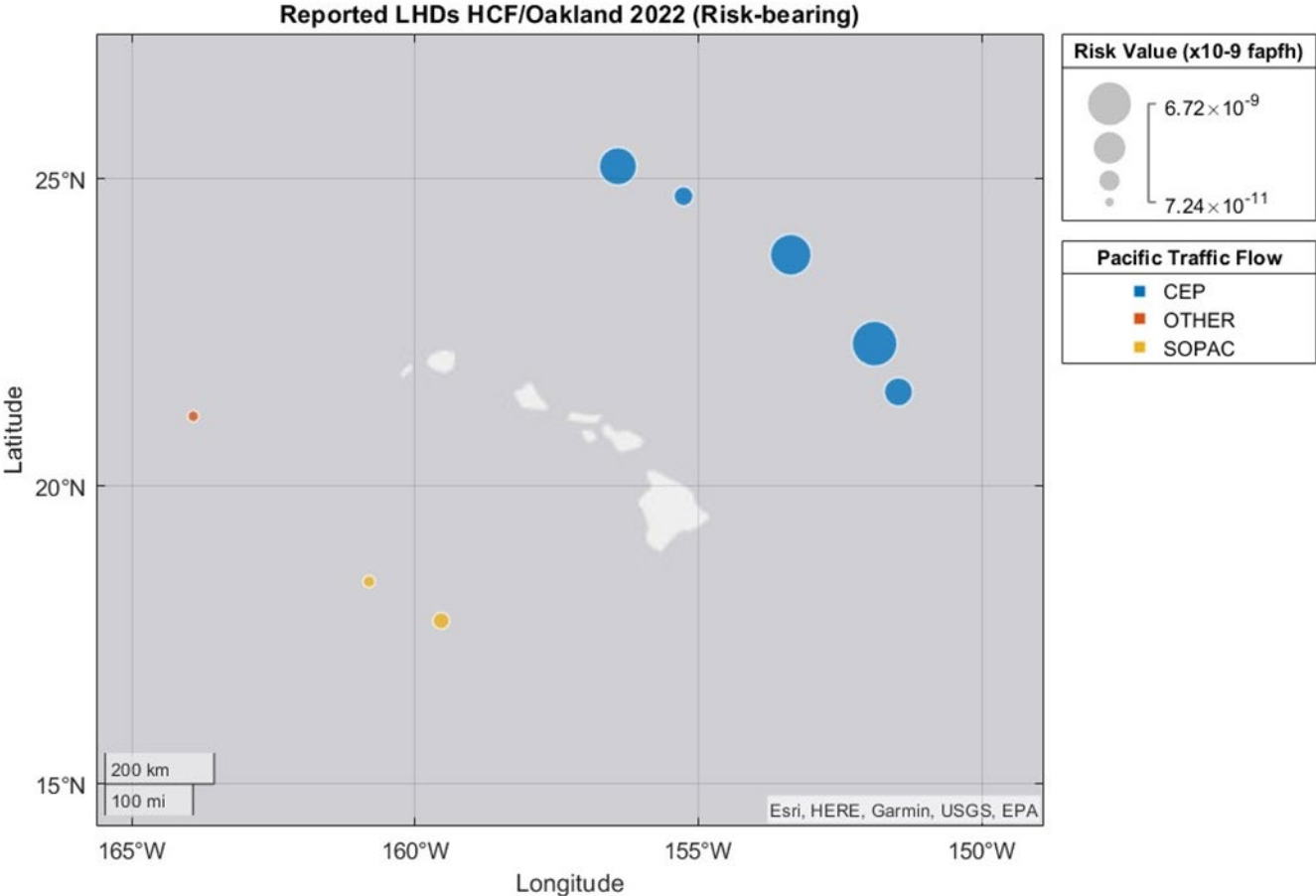
# Hot Spot 'N'

- The Central East Pacific (CEP) area between Continental USA and Hawaii, is identified as **Hot Spot N**.



	2021		2022	
Category	No. LHD	Duration (min)	No. LHD	Duration (min)
A	1	0	0	0
B	6	21	16	1.5
E	34	128.6	28	85.43
I	1	0	0	0
Total	42	149.6	44	86.93

# Hot Spot 'N' continued



Traffic Flow	LHD Count	LHD Duration Sum (min)	Sum Vertical Risk Estimate (× 10 <sup>-9</sup> fapfh)
CEP	30	87.68	20.18
OTHER		4.15	0.07
SOPAC	2	3.72	0.73



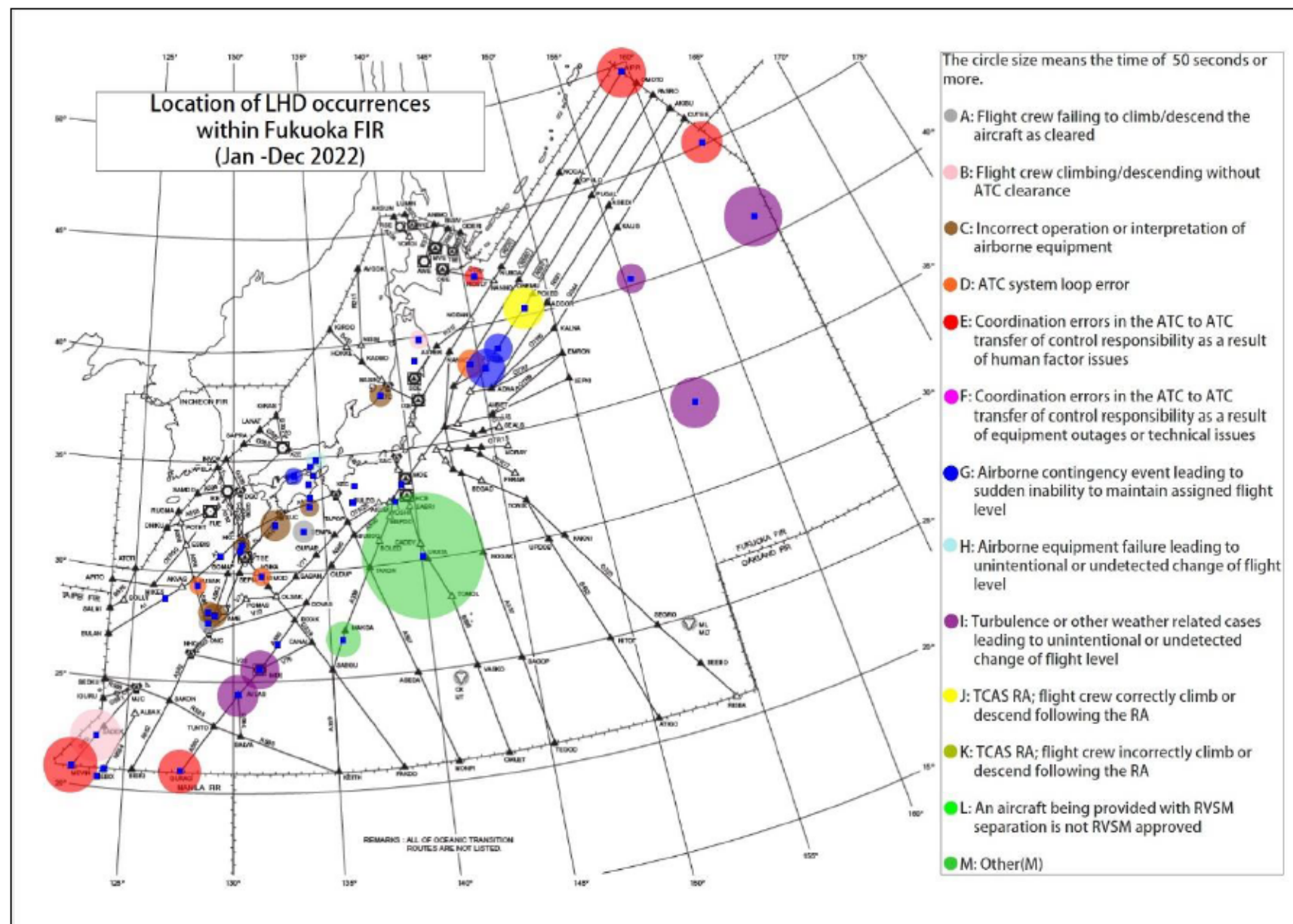
# Questions?

[hqt-JASMA@gxb.mlit.go.jp](mailto:hqt-JASMA@gxb.mlit.go.jp)

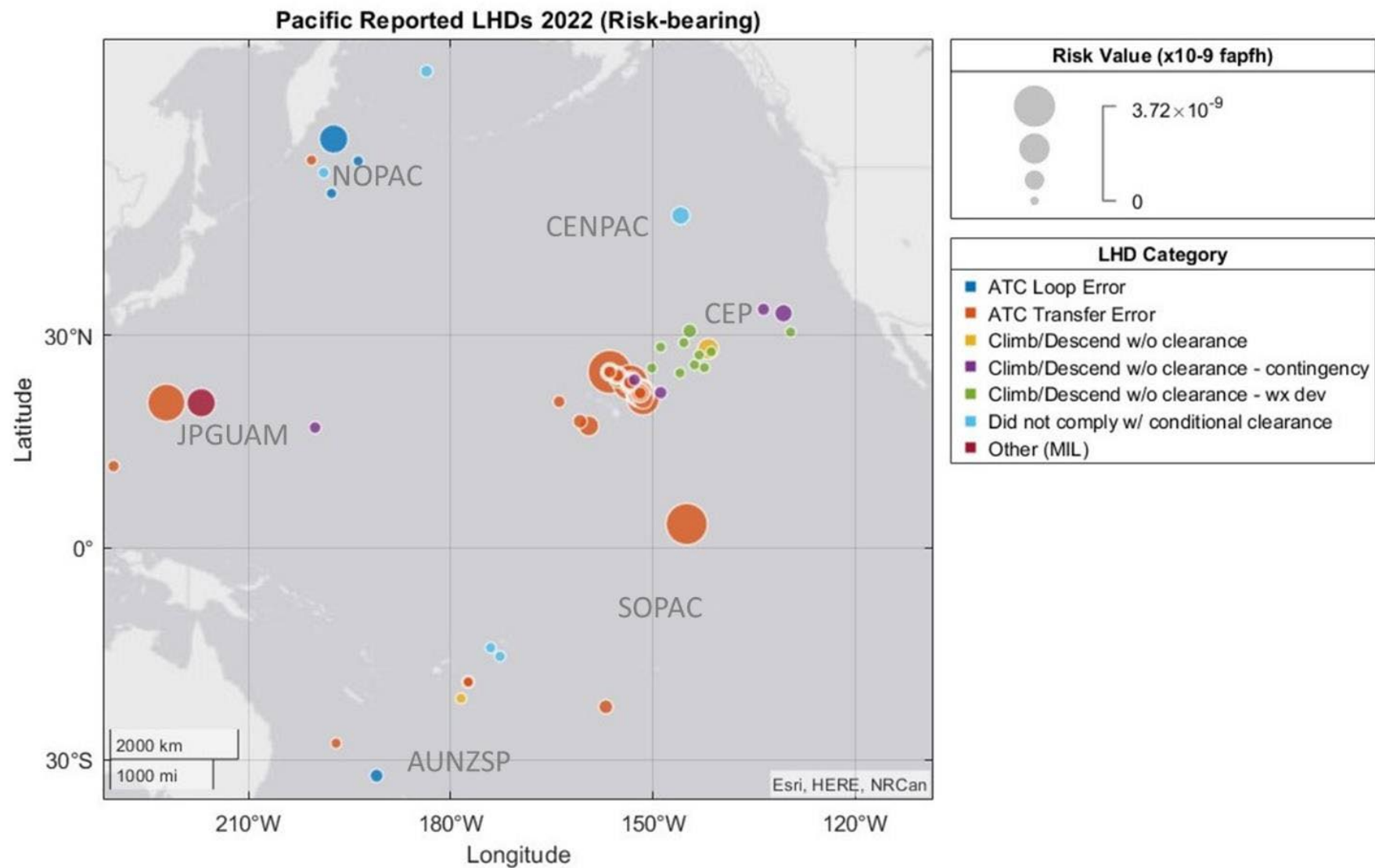
[parmo@faa.gov](mailto:parmo@faa.gov)

Backup slides

# JASMA Vertical Report to RASMAG/28



# PARMO Vertical Report to RASMAG/28



# JASMA and PARMO\*

## RMA & EMA State and Airspace Responsibilities

### State

- Cook Islands
- Federated States of Micronesia
- Fiji
- Japan
- Kiribati
- Marshall Islands
- New Zealand
- Palau
- Republic of Korea
- Samoa
- Tonga

### Airspace

- Anchorage FIR
- Auckland FIR
- Fukuoka FIR
- Incheon FIR
- Nadi FIR
- Oakland FIR
- Tahiti FIR

\* The U.S. FAA WJHTC provides RMA services for North American Airspace and ICAO States as the North America Approvals Registry and Monitoring Organization (NAARMO)