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CAR/SAM Regional Planning and Implementation Group (GREPECAS)

WORKING PAPER

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Twenty-Sixth Scrutiny Working Group Meeting (GTE/26)
of the CAR/SAM Regional Planning and Implementation Group (GREPECAS)
Asynchronous (virtual): 9 to 25 September 2026
In person: Mexico City, Mexico, 12 to 16 October 2026

Agenda Item 4: **Activities and Tasks to be Reported to GREPECAS**
4.2 Cooperation GTE/Regional Aviation Safety Team-Pan America (PA-RAST)

STATUS OF THE JOINT WORK OF THE GREPECAS SCRUTINY WORKING GROUP AND THE PAN AMERICA REGIONAL AVIATION SAFETY TEAM ON MID-AIR COLLISION RISK IN RVSM AIRSPACE

(Presented by the RASG-PA Secretariat)

EXECUTIVE SUMMARY

The GREPECAS Scrutiny Working Group (GTE) and the Pan America Regional Aviation Safety Team (PA-RAST) of the Regional Aviation Safety Group – Pan America (RASG-PA) work jointly, under agreed Terms of Reference, on the monitoring and mitigation of occurrences in Reduced Vertical Separation Minima (RVSM) airspace. This working paper reports the status of that joint work. It also sets out the importance of the joint work for developing safety risk mitigation measures for mid-air collision, and the contribution of the regional monitoring agencies (RMAs) on which the work depends.

Action:	Suggested Actions are included in Section 6.
Strategic Objectives:	• Every Flight is Safe and Secure
References:	• GREPECAS and RASG-PA Collaboration Terms of Reference (v2) • Global Aviation Safety Plan 2026–2028 (Doc 10004) • RASG-PA Safety Advisory RSA-13, Large Height Deviations in Reduced Vertical Separation Minima (RVSM) Airspace, February 2026 • Asia Pacific Regional Safety Advisory RSA 25-001 • PA-RAST/69 Report of the Meeting • RASG-PA ESC/41 — WP/11, Status of the Coordination between the PA-RAST and the GREPECAS Scrutiny Working Group • GREPECAS Scrutiny Working Group, GTE/25

1. Introduction

1.1 The GTE and the PA-RAST, which operates under the RASG-PA, work together under the Terms of Reference for the collaboration between GREPECAS and the RASG-PA. The Terms of Reference set the objective of strengthening the coordination of reported occurrences for the purpose of safety risk mitigation in the North American, Central American and Caribbean (NACC) and South American (SAM) Regions. They provide for:

- the review and monitoring of Large Height Deviations (LHD) and Traffic Collision Avoidance System resolution advisories (TCAS RA) within FL245 and above, for the purpose of trend analysis;

- close cooperation with CARSAMMA, NAARMO and industry organisations to compile the information necessary for safety analysis in the Regions; and

- annual reporting of the outcomes of the joint work to the RASG-PA and GREPECAS.

1.2 On the PA-RAST side, the joint work is conducted through the PA-RAST Mid-Air Collision (MAC) Project Team. Its status was presented to the Forty-First Meeting of the RASG-PA Executive Steering Committee (ESC/41, Mexico City, 2 to 3 September 2026) in WP/11. The ESC took note of the status of the coordination and supported its continuation, including the joint analysis and the development of further regional safety advisories. It agreed that the RASG-PA convey to GREPECAS the PA-RAST's requirement for multiyear LHD data, and request that GREPECAS, through its Scrutiny Working Group, support the provision of that data by the regional monitoring agencies concerned. The ESC recognised the joint work of the PA-RAST and the GTE under GREPECAS and the RASG-PA. This working paper reports that status to the GTE and conveys the PA-RAST's requirement for multiyear LHD data. Once the multiyear data have been received, LHD data will be required on a yearly basis.

2. Importance of the collaboration

2.1 Mid-air collision (MAC) is one of the five global high-risk categories of occurrences (G-HRCs) identified in the Global Aviation Safety Plan 2026–2028 (Doc 10004). The GASP calls on States, regions and industry to focus their efforts on the precursors and contributing factors of the G-HRCs. Among the contributing factors to MAC it identifies traffic conditions, air traffic control performance, and flight crew training and organisational culture.

2.2 The two Groups reach different parts of the aviation system. The GTE validates and publishes LHD information and engages air navigation service providers (ANSPs) and the RMAs. The PA-RAST engages industry, including operators and flight crews, through its members and safety partners, and engages civil aviation authorities through the RASG-PA. Working jointly allows a safety issue identified in one domain to be acted upon in the other.

2.3 The joint analysis is not limited to Flight Information Region (FIR) boundaries, but gives specific attention to them as the points where the responsibilities of adjacent service providers meet. Its particular value lies in cases that neither Group can characterise from its own data alone:

- A TCAS RA recorded at an FIR boundary without a corresponding LHD indicates that the airborne collision avoidance system identified a potential collision threat, while the event may not be visible in the LHD data of either FIR concerned.

- By way of illustration, where the procedures agreed between two adjacent air traffic services units require an aircraft to reach a new flight level by the transfer of control point, and that change is not completed in time, the aircraft may remain at the same level as opposite-direction traffic in the vicinity of the boundary. One unit may regard such an event as a Large Height Deviation, while the other, having issued the corresponding instruction, may not. Where the characterisations differ, a TCAS RA recorded aboard the aircraft, whether or not it is reported, is not subject to that interpretation and provides an objective indication of the risk actually encountered. The PA-RAST MAC Project Team considers that the separation risk warrants attention irrespective of how the event is classified.

2.4 The two information sets are complementary. An LHD identifies where a flight has deviated from its assigned or expected level in RVSM airspace, with or without conflicting traffic. A TCAS RA signifies an imminent, high-risk encounter. The resolution advisory is the last barrier against a mid-air collision, particularly in RVSM airspace, where the speeds involved require a prompt response from the flight crew.

2.5 The collaboration brings these two information sets together to identify hotspots requiring mitigation, whether or not LHD hotspots have corresponding TCAS RA hotspots. TCAS RA hotspots without corresponding LHD hotspots are of particular interest, as they point to risk that LHD information alone does not reveal. Combining these information sets will also help prioritize engagement with the States and ANSPs responsible for the FIRs concerned. The safety enhancements resulting from this analysis, including regional safety advisories and engagement with the States, service providers and operators concerned, will seek to reduce the risks identified.

3. Results to date

3.1 RASG-PA Safety Advisory RSA-13, Large Height Deviations in RVSM Airspace, was issued in February 2026 as a product of this collaboration. It adapts Asia Pacific Regional Safety Advisory RSA 25-001 for the Pan American context and is addressed to civil aviation authorities, ANSPs and air carrier operators. The advisory draws on the finding at GTE/25 of an increase, compared with the previous year, in FIRs nearing or exceeding the ICAO target level of safety. Its recommendations to oversight bodies include the use of ICAO platforms, among them GREPECAS and the RASG-PA, to share lessons learned and harmonise mitigation strategies.

4. Work in progress

4.1 **Multiyear LHD analysis.** On initial review of single-year information, the PA-RAST determined that multiyear LHD data would be required for a comprehensive analysis. CARSAMMA and NAARMO have provided LHD information, which is being analysed with TCAS RA information. 2025 data will be required upon completion of GTE/26.

4.2 **Joint LHD and TCAS RA analysis.** The LHD information is analysed together with aggregate, de-identified TCAS RA information, consistent with the Terms of Reference, to identify patterns and hotspots. For the purposes of the joint work, initial results indicate that LHD information alone is not exhaustive; LHD and TCAS RA information are complementary components of the analysis. Where TCAS RA hotspots coincide with LHD hotspots, they aid in the further characterisation of the risk from the perspective of the flight crew. Where they do not coincide, the analysis seeks to determine whether this reflects an unreported LHD, a resolution advisory not notified to the FIR concerned, or a TCAS RA without an associated LHD, as the basis for subsequent mitigation

4.3 **Scope of the current analysis.** The LHD information held by the RMAs relates to RVSM airspace, and the current analysis is concentrated there. Occurrences between FL245 and FL290, which also fall within the scope of the Terms of Reference, will be proposed for consideration at a later stage.

4.4 **Second advisory.** A further RASG-PA Safety Advisory, addressing unauthorised RVSM operations and the strengthening of equipage compliance and reporting, is under development.

4.5 **FIR transit without ATS contact.** Events in which aircraft operating in RVSM airspace transit FIRs without establishing contact with the air traffic services unit concerned fall within the scope of the joint work. The GTE and the PA-RAST are working to further validate and characterise this issue.

4.6 The status of the joint activities is summarised in Appendix A.

5. Contribution of the regional monitoring agencies

5.1 The joint work depends on the RMAs. CARSAMMA and NAARMO, the agencies monitoring RVSM operations in the CAR/SAM and North American areas respectively, are the source of the LHD information on which the analysis rests. The Terms of Reference expressly provide for close cooperation with both agencies.

5.2 Three contributions are essential:

- **A multiyear series.** Trend analysis and the proactive monitoring called for in the Terms of Reference cannot rest on a single year of data.

- **Consistency.** Information must be aligned across agencies in format, geographic referencing and presentation methodology, so that it can be combined with TCAS RA information and compared across the NACC and SAM Regions.

- **Participation.** RMA participation in the regular meetings of the joint group allows individual events to be clarified with the agency that holds the source record.

5.3 Both agencies have provided LHD information for the analysis, and CARSAMMA has asked to be included in the regular meetings of the joint group. Sustaining this contribution is a condition for the joint analysis to produce safety enhancements that mitigate MAC risk in RVSM airspace.

6. Suggested action

6.1 The Meeting is invited to:

a) take note of the status of the joint work of the GTE and the PA-RAST presented in this working paper, including RASG-PA Safety Advisory RSA-13;

b) support the continuation of the joint work under the Terms of Reference;

c) take note of the importance of this collaboration for the development and implementation of additional safety risk mitigation measures for MAC risk in RVSM airspace, and of the importance of the support of the GTE and the RMAs to this collaboration; and

d) support the provision by CARSAMMA and NAARMO of multiyear LHD information, and thereafter of LHD information on a yearly basis, in a consistent format, and invite their participation in the regular meetings of the joint group.

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APPENDIX A
STATUS OF THE JOINT ACTIVITIES

Activity	Status	Information sources	Contribution from the RMAs
RSA-13, LHDs in RVSM airspace	Issued, February 2026	GTE/25 findings; APAC RSA 25-001	Provided through LHD information presented to GTE/25
Multiyear LHD analysis	Information received; analysis in progress	CARSAMMA and NAARMO LHD information	Multiyear LHD information provided, with the exception of 2025 data, which will be required upon completion of GTE/26
Joint LHD and TCAS RA analysis	In progress	LHD information validated through the GTE; aggregate, de-identified TCAS RA information	Multiyear LHD information
Advisory on unauthorised RVSM operations	Under development	GTE findings	Expert review to confirm that the draft advisory adequately addresses the issue
FIR transit without ATS contact	Validation and characterisation in progress	Validated GTE information	Support for the further validation and characterisation of the events concerned

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