



**Nineteenth Meeting of the CAR/SAM Regional Planning and Implementation Group
(GREPECAS/19)
Online, 27 – 29 October 2021**

Agenda Item 4: Global and Interregional Activities

**FOLLOW-UP TO THE WORK OF THE GREPECAS SCRUTINY WORKING GROUP (GTE)
RESULTING FROM THE CAR/SAM REDUCED VERTICAL SEPARATION MINIMUM
(RVSM) AIRSPACE SAFETY ASSESSMENT - PERIOD 2018-2020**

(Presented by the GTE)

EXECUTIVE SUMMARY

The GREPECAS Scrutiny Working Group (GTE) performs an essential task in monitoring the safety of the Reduced Vertical Separation Minimum (RVSM) airspace in the CAR/SAM Regions in accordance with Annex 11, 3.3.5.1 and the GREPECAS mandate.

Over the last five years, the GTE, with the support of the Caribbean and South American Monitoring Agency (CARSAMMA), has evolved to become a generator of safety data to support decision-making to improve airspace safety, efficiency and capacity.

This working paper presents a summary of the activities of the GTE since the last report to GREPECAS in 2018.

Action:	Described in Section 4.
<i>Strategic Objectives:</i>	<ul style="list-style-type: none"> • Air Navigation Capacity and Efficiency • Economic Development of Air Transport • Environmental Protection

1. Introduction

1.1 Since the implementation of the reduced vertical separation between Flight Levels 290 and 410 inclusive (RVSM), the GTE, in conjunction with the (CARSAMMA), has been working on the continuous monitoring of the performance of the system, as well as on safety assessments, in compliance with the provisions of ICAO Doc 9937 and 9574.

2. Scope

2.1 This report covers the activities carried out by the GTE during the period 2018-2021 and the safety performance analysis of RVSM airspace for the periods 2018, 2019, and 2020, including the safety analysis of collected data in the CAR/SAM Regions.

3 Discussion

3.1 In the period 2019-2021, the GTE held one face-to-face meeting and two online meetings due to mobilization restrictions and social distancing imposed by States in response to COVID 19. However, even with mobilization restrictions, data validation of large height deviations was carried out in accordance with the requirements.

3.2 Assessments carried out by CARSAMMA over the last three years (2018, 2019, and 2020) using the Collision Risk Model (CRM) methodology show that operations in RVSM airspace have remained within the acceptable level of safety of 5×10^{-9} . **Appendix** to this working paper shows the results of CRM assessments for the aforementioned period.

3.3 Although the COVID 19 pandemic significantly reduced traffic volumes in the region, the ratio of Large Height Deviation (LHD) to the volume of operations remained the same (Appendix, graph II refers). It is essential to recognize the excellent work done by CARSAMMA, which over the past three years has strengthened the agency's team of experts and improved internal procedures to continue to support the RVSM airspace monitoring process.

3.4 LHD analysis shows that 95% of the occurrences are due to coordination errors between Air Traffic Control (ATC) units- Code E LHD (See Appendix A, graphs II and III). This percentage highlights the need for taking further actions to reduce coordination errors between air traffic services (ATS) units. GTE statistical data has shown that the implementation of Air Traffic Services Inter-facility Data Communication (AIDC), Aeronautical message handling system (AMHS), surveillance data exchange, and Automatic dependent surveillance - broadcast (ADS-B) has a significant impact on reducing coordination errors. During this reporting period, one of the most effective success stories was the implementation of coordination through messaging between the Antofagasta and Cordoba Flight Information Regions (FIRs), which reduced coordination-related LHDs by 95% (see GTE/19 report).

3.5 During the last three years, the ICAO Regional Offices, in coordination with LHD focal points, CARSAMMA, air traffic service providers, and Civil Aviation Authorities of the States, have been working on a strategy to improve safety in RVSM airspace, focusing mainly on FIR boundaries. This includes actions taken on the boundaries between the Curaçao-Barranquilla, Barranquilla-Jamaica, and Argentina-Chile FIRs, which have significantly reduced LHDs.

3.6 As part of a conclusion GTE 20/01, flight plan auditing was implemented starting in 2021, consisting of the monthly assessment of the flight plans of all aircraft flying in CAR/SAM RVSM airspace to identify aircraft using RVSM airspace without approval, this process improves and strengthens airspace monitoring in the CAR/SAM Regions.

3.7 Flight plan auditing has been possible thanks to the cooperation of States through monthly submission of flight plans and the support of CARSAMMA. Although significant participation of States in this task has been achieved, the involvement of several countries in the monthly submission of data is still lacking.

3.8 It is essential to recognize that, although significant progress has been made in reducing LHDs caused by coordination errors, further work is needed on the implementation of AIDC, surveillance data exchange agreements, and ADS-B to further reduce these occurrences.

3.9 Regarding LHDs caused by duplicate flight plans, the data show a significant reduction. However, some FIRs continue having problems related to flight plans, mainly due to the lack of flight route information, mainly for flying aircrafts from point-to-point. The ICAO Regional Offices are coordinating closely with implementation groups and industry for the adoption of measures to eliminate this situation completely.

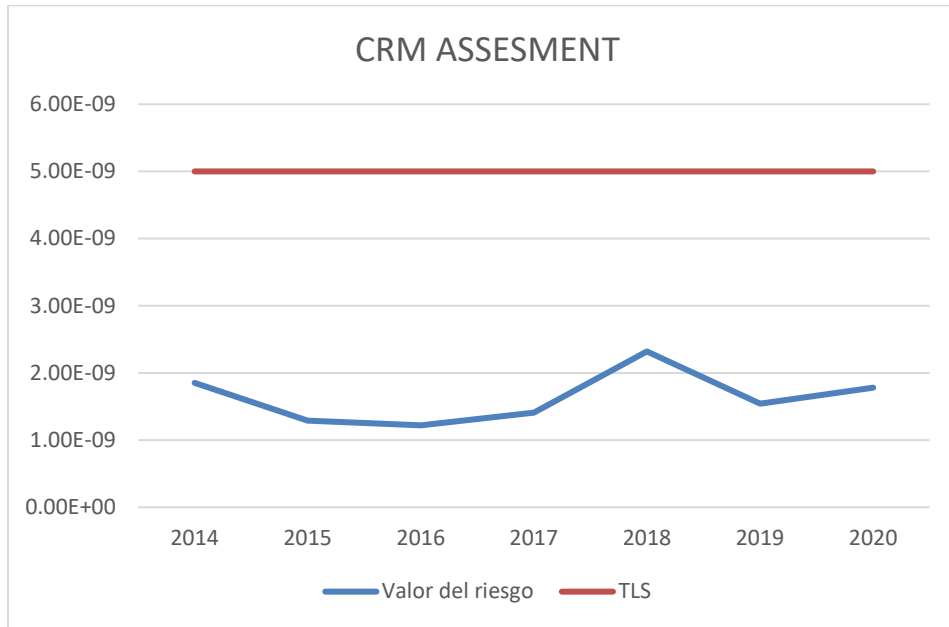
3.10 It is important to mention that some States/International Organizations still do not comply with the timely submission of LHD reports, RVSM airspace operations data for December of each year for the CRM assessment. It is important to remind CAR/SAM States/International Organizations of the need to comply with the dates established by CARSAMMA and the GTE to submit the information.

4. Required action

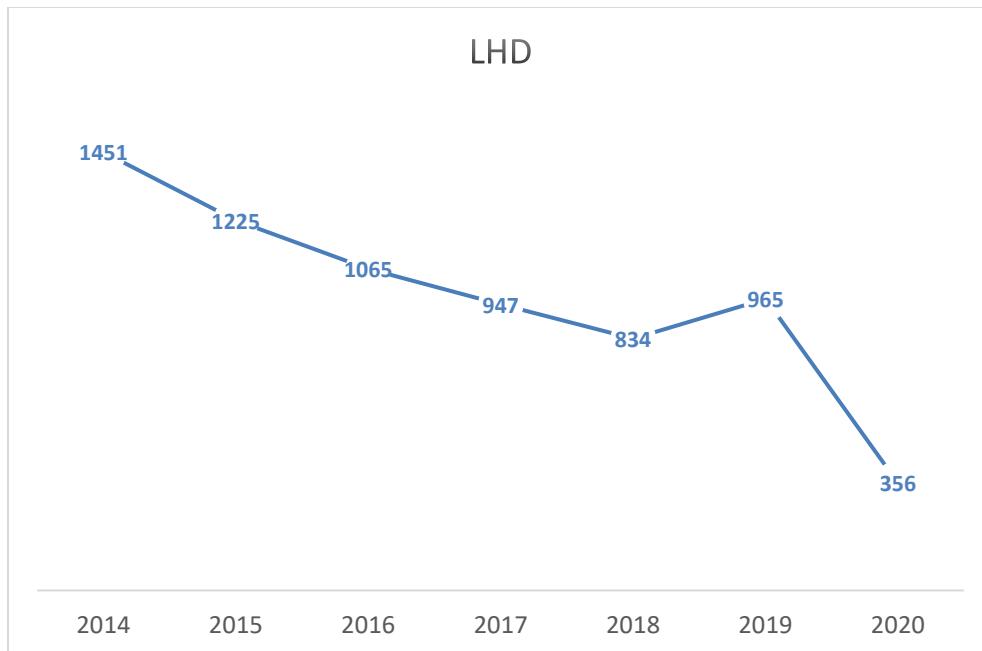
4.1 The Meeting is invited to:

- a) take note of the information presented herein;
- b) support the actions of the GTE to reduce large height deviations in CAR/SAM RVSM airspace;
- c) support the implementation of AIDC, surveillance data exchange agreements, and ADS-B implementation to reduce coordination errors between air traffic services; and
- d) Urge States/international organizations to comply on time with submitting the necessary data for CRM calculation and flight plan auditing.

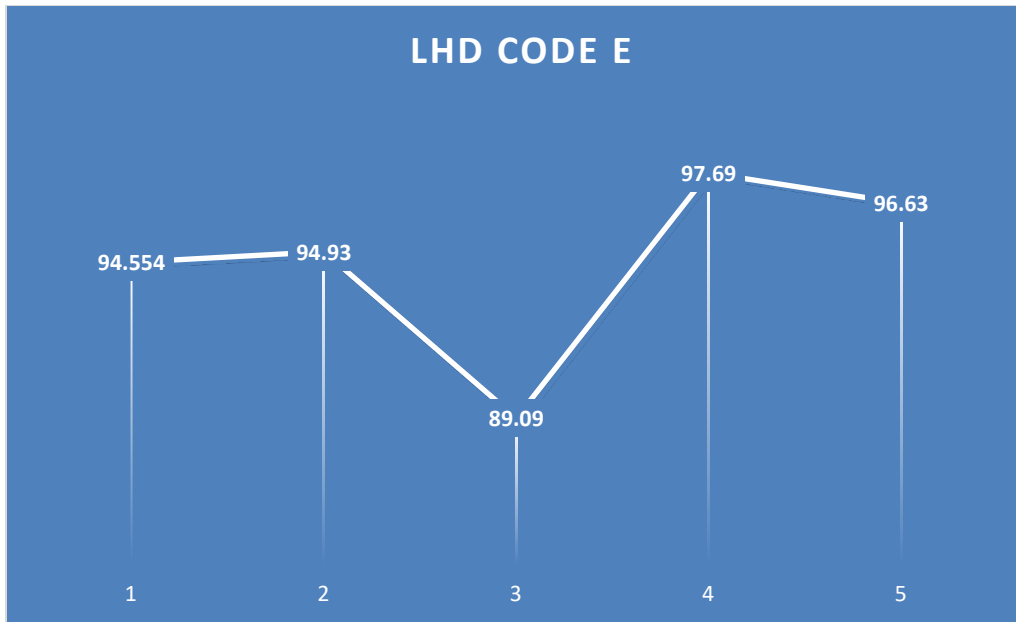
APPENDIX



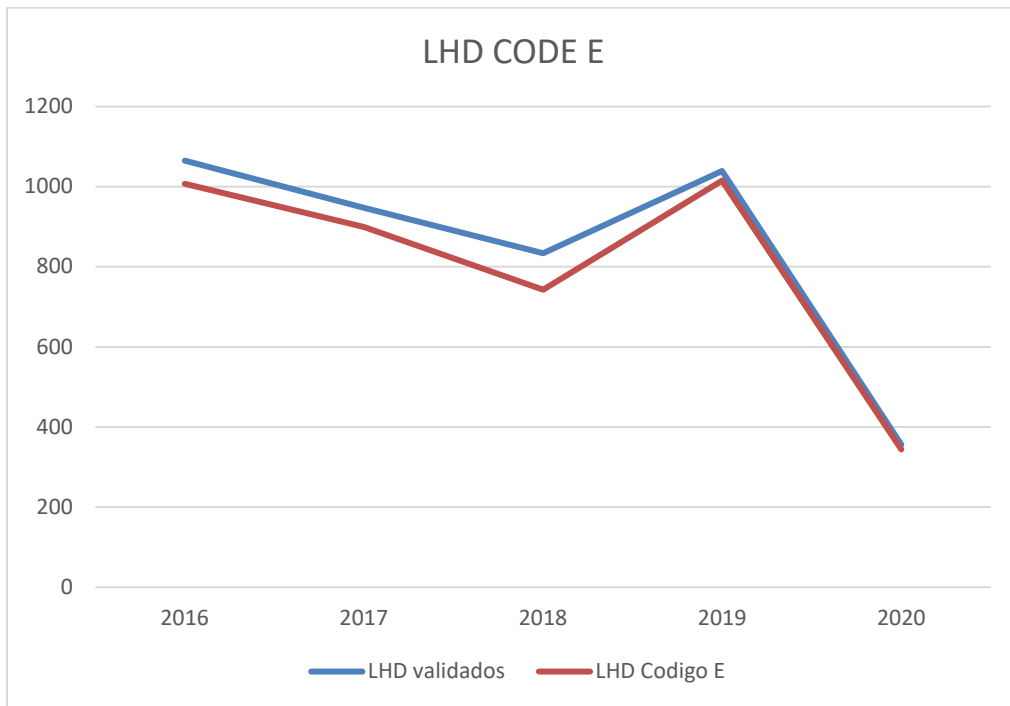
Graph I – Level of risk according to the CRM



Graph II – Number of LHDs validated per year



Graph III – Average number of E-coded LHDs (coordination errors)



Graph IV - Ratio of LHDs to code E LHDs