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WORKING PAPER

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**CAR/SAM Planning and Implementation Regional Group (GREPECAS) Twentieth Scrutiny Working  
Group Meeting  
(GTE/20)**

Zoom Meeting, 9 – 11 November 2020

**Agenda Item 4: Other business**

**INCLUSION OF UNKNOWN AIRCRAFT FLYING MAIQUETIA RVSM FIR AIRSPACE IN THE LARGE HIGH  
DEVIATIONS (LHD) MONITORING PROCESS**

(Presented by la República Bolivariana de Venezuela)

<b>EXECUTIVE SUMMARY</b>	
<p>This working paper present the proposal for a risk analysis based on the safety management system (SMS) of the aircraft entering into the Maiquetia FIR RVSM airspace without any communications or coordination, proposing that such incursions be considered as Large High Deviations (LHD)</p>	
<b>Action:</b>	<p>From the CAR/SAM Regions Monitoring Agency (CARSAMMA), States are encouraged to keep track of incursions into RVSM airspace to incorporate this statistic into the Great Altitude Deviations (LHDs) and assess the impact on the desired level of operational safety.</p>
<b>Strategic Objectives:</b>	<ul style="list-style-type: none"><li>• Safety.</li></ul>
<b>References:</b>	<ul style="list-style-type: none"><li>• Doc 9426 Air Traffic Services Planning Manual</li><li>• Doc 9574 Manual sobre una separación vertical mínima de 300 m (1000 ft) between FL 290 and FL 410 inclusive</li><li>• Manual on the Assessment of Large Height Deviations (LHDs)</li><li>• Annex 11 Air Traffic Services</li><li>• Annex 2 Rules of the Air</li><li>• Doc 4444 Air Traffic Management</li></ul>

## 1. Introduction

1.1. Since 2016, the Venezuelan State has noted the irregular recurrent entry of different aircraft into the Maiquetia Flight Information Region (FIR Maiquetia). Initially, the affected airspace was only the CVSM, but since 2019 some of those incursions are being made within RVSM airspace.

1.2. These aircraft remain a long period of time within the RVSM airspace of the Maiquetia FIR, impacting safety, as there is no communication or coordination from adjacent FIRs, to establish an appropriate separation with traffic within Maiquetia FIR.

1.3. It is important to note that, when asking for information from surrounding FIR, most of the time, the answer is that the aircraft and its intentions are unknown since it entered without coordination to that FIR.

1.4. The number of incursions in the RVSM Maiquetia FIR airspace in 2020 (to October) was six events, and in 2019 was eleven.

## 2. Risk value analysis using an approach based on the Operational Security Management System (SMS)

2.1. The Venezuelan State has done a hard job monitoring these incursions within the FIR and considers that they should be subject to risk assessment for the RVSM airspace.

2.2. In this regard, Document 9574 "Manual for the Implementation of a Minimum Vertical Separation of 300m (1000 ft) between FL 290 and FL 410 inclusive" in Chapter 2 literal 2.1.5. indicates overall risk as "collision risk due to all possible causes, including technical error and any risk due to operational errors and in-flight contingencies..." must be considered. Indeed, an aircraft without prior communication or coordination represents it.

2.3. Similarly, literal 2.1.8. states: "Regional authorities should take into account all possible means of assessing and reducing the collision risk level caused by operational errors and in-flight contingencies in the RVSM airspace. While the frequency of such events is not considered as a result of the minimum separation applied, it will be essential that PIRGs (Regional Planning Group) establish measures to ensure that the risk due to operational errors and in-flight contingencies does not increase." Since such events do not occur sporadically, collision risk levels should be analyzed.

2.4. Calculation of the risk value of incursions by the LHD method and analysis, described in the LHD Manual

Severity of danger: E

Probability: 4

Duration: Long

Probability (P)	Duration (D)	Severity of Danger (G)
5 Frequent		5 Catastrophic
4 Occasional		4 Dangerous
3 Remote	3 Long	3 Major
2 Improbable	2 Medium	2 Minor
1 Extremely Unlikely	1 Short	1 Insignificant

Oversight System	Weather conditions	Another traffic
YES = 5	VMC = 0	With Oversight system 10
NO = 10	IMC = 5	withouth Oversight system 10

$$VR = (P \times D \times G) + R + W + T$$

$$VR = (4 \times 3 \times 2) + 5 + 0 + 0 \quad VR = 29$$

VR	Risk level	Control
76-100	HIGH	Unacceptable risk, RVSM space must be cancelled until the hazard is mitigated and the risk is reduced to a medium or low level.
21-75	MEDIUM	Acceptable risk but monitoring and management are mandatory.
01-20	LOW	Acceptable without restriction or limitation, hazards do not require active management but must be documented.

2.4. Once incursions have been analyzed, the risk matrix places them at the Average Risk Level, indicating that these events should be followed up and mitigation plans implemented as needed.

3. **Suggested actions**

3.1. The Meeting is invited to:

- a) take note of the information contained in this information paper;
- b) States are encouraged to follow-up these incursions of unknown aircraft within RVSM airspace;
- c) consider these incursions as LHDs to be reported to CARSAMMA, to be able to analyze the risk and its impact on the Desired Level of Operational Security (TLS); and
- d) urge States to carry out appropriate coordination and inform about any traffic with a projection to enter the adjacent FIRs and take the appropriate measures with the trajectory of those flights.