



ICAO

International Civil Aviation Organization
North American, Central American and Caribbean Office

WORKING PAPER

GTE/24 — WP/06
19/07/24

**CAR/SAM Planning and Implementation Regional Group (GREPECAS)
Twenty Fourth Scrutiny Working Group Meeting (GTE/24)
Mexico City, Mexico, 5 to 9 August 2024**

- Agenda Item 3: Review of the results of Large Height Deviation (LHD) and the Collision Risk Model (CRM) Analysis**
- 3.8 Presentation of the CRM 2023 and an analysis of the contributing causes of this risk in FIRs that presented a value above the Target Level of Safety (TLS) Collision Risk Assessment (CRA)

REVIEW OF THE RESULTS OF THE SCRUTINY OF AIR MOVEMENTS RECEIVED IN THE YEAR 2023

(Presented by CARSAMMA)

EXECUTIVE SUMMARY	
This working paper addresses the errors related to completing and validating of the Air Traffic Movement spreadsheet received in 2023 within the RVSM airspace monitoring programme.	
Action:	Suggested Actions are included in Section 4.
<i>Strategic Objectives:</i>	<ul style="list-style-type: none">• Safety
<i>References:</i>	<ul style="list-style-type: none">• Guidance Manual for Points of Contact credited to CARSAMMA.• Final Report of the Nineteenth GREPECAS Scrutiny Working Group Meeting (GTE/19). Barranquilla, Colombia. 18-22 November 2019

1. Background

1.1 Since RVSM's implementation in 2005, the LHD focal points of CAR/SAM States and territories, alongside the GTE, have been integral to RVSM airspace oversight in collaboration with CARSAMMA and ICAO Regional Offices.

1.2 The Guidance Manual for Points of Contact (POC) accredited to CARSAMMA, revised in the GTE/19 meeting, establishes the proper procedures for the optimal completion and submission of forms used by CARSAMMA for RVSM airspace monitoring. It also guides Civil Aviation Authorities (CAAs) in completing and submitting forms related to the RVSM approval status of aircraft to CARSAMMA. This manual also serves as a guide for POCs in analyzing and validating LHD events.

2. Analysis

2.1. The data collected for the airspace monitoring program depends on the correct completion of the forms provided to the States and must also accurately reflect the reality of the specified month. Specifically, movement data is one of the variables used in the Collision Risk Model (CRM), a principal measurement utilized by the RMA to assess RVSM airspace's level of safety.

2.2. The correct completion of Form F0 is mandatory for the States, as outlined in items 2.2.1 and 2.2.2 of the CARSAMMA Contact Points Manual.

2.3. In 2023, numerous errors in the form completion, form missing mandatory information, and submission delays were observed.

2.4. The following States did not submit the documents in a timely manner: French Guyana, Guyana, Suriname and Peru, therefore, their aircraft movements are not included in the **Appendix**.

2.5. It was observed that some States that have more than one FIR sent the movements in a single file. The movements must be separated by FIR, according to the CARSAMMA Contact Points Manual.

2.6. The Appendix presents information on FIR from each State:

- a) The delivery date;
- b) Quantity of movements submitted by the States;
- c) The number of movements containing errors after the initial data validation;
- d) The most commonly observed errors;
- e) Utilized movements; and
- f) Discarded movements.

3. Conclusions

3.1 The collection and submission of movement data to the RMA by the States is essential for the execution of the RMA's duties. It is acknowledged that this task adds to the local workload, but it is mandatory according to the requirements of Annex 11, ICAO guidance documentation, and international agreements.

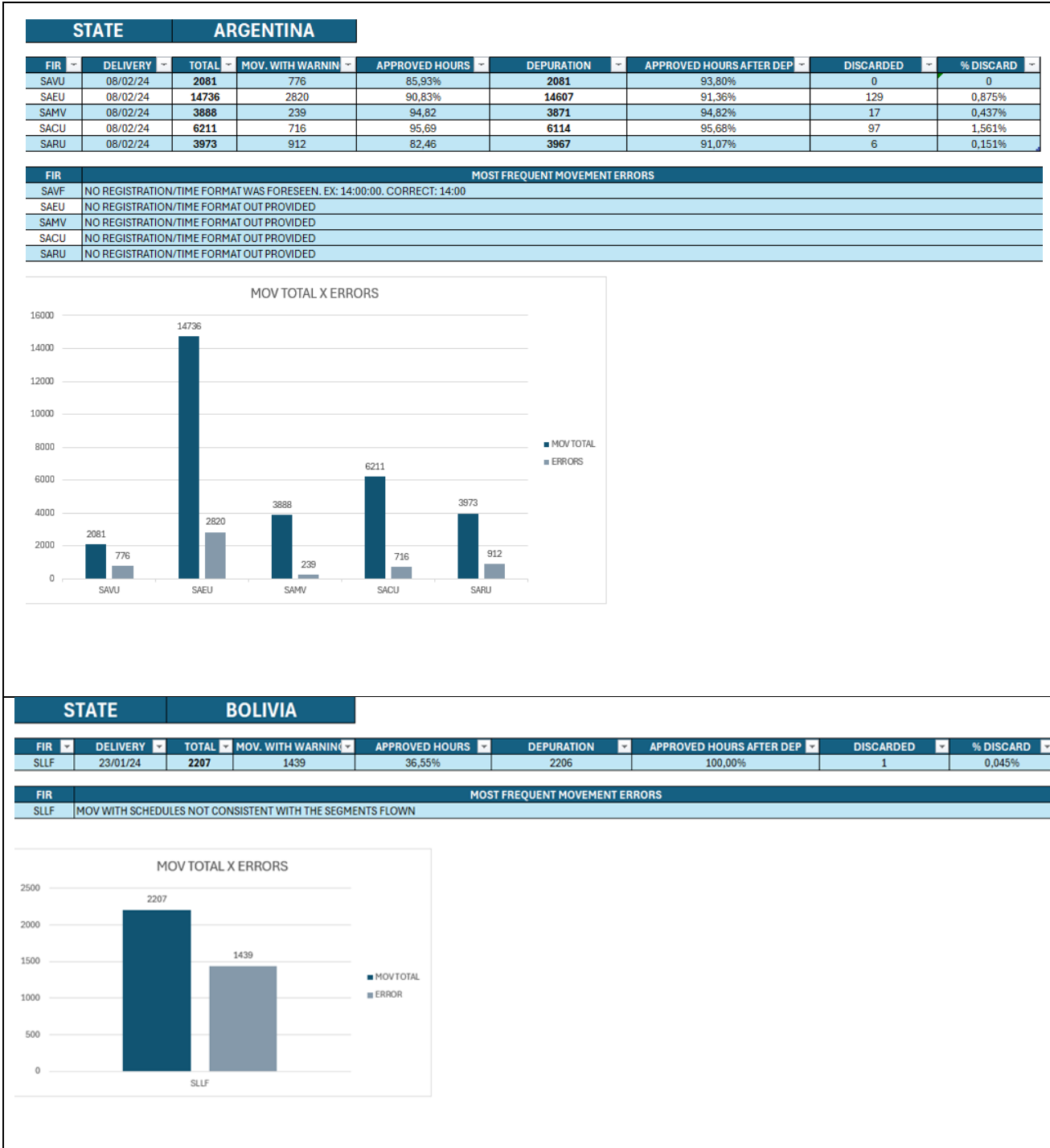
4. Suggested Actions

4.1 The Meeting is invited to:

- a) take note of the information provided;

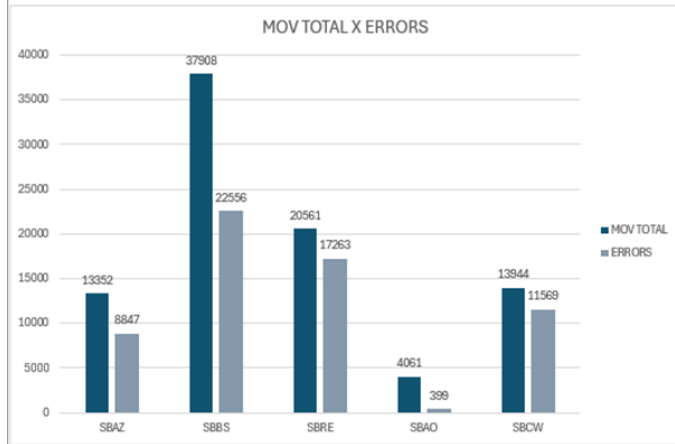
- b) request States, and International Organizations, accredited to the CARSAMMA to implement mitigation actions to provide CARSAMMA with RVSM movement data forms, in a timely manner, completed with fewer errors optimizing the utilization of the entire sample, as outlined in items 2.2.1 and 2.2.2 of the CARSAMMA Contact Points Manual;
- c) request States, and International Organizations, accredited to the CARSAMMA to observe item 1.4 of the CARSAMMA Contact Points Manual, that request the submission of aircraft movements separated by FIR; and
- d) any other actions deemed necessary.

APPENDIX ERRORS IN THE FORMS SENT TO CARSAMMA



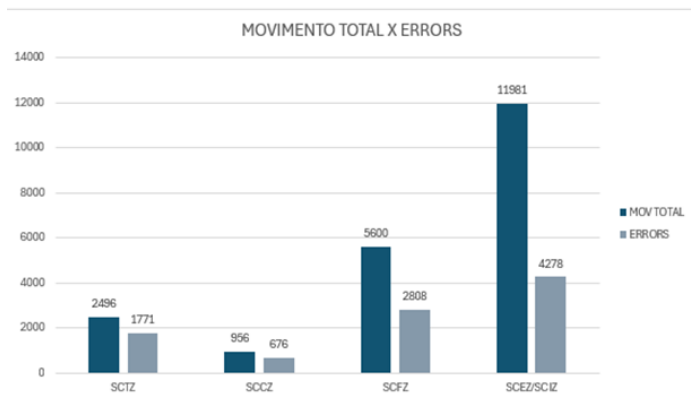
STATE		BRAZIL						
FIR	DELIVERY	TOTAL	MOV. WITH WARNIN	APPROVED HOURS	DEPURATION	APPROVED HOURS AFTER D	DISCARDED	% DISCARD
SBAZ	16/02/24	13352	8847	49,35%	8986	100,00%	4366	32,6%
SBBS	16/02/24	37908	22556	52,35%	21667	100,00%	16241	42,8%
SBRE	16/02/24	20561	17263	17,57%	17808	87,97%	2753	13,3%
SBAO	16/02/24	4061	399	93,16	3970	90,80%	91	2,24%
SBCW	16/02/24	13944	11569	13,10%	12081	100,00%	1863	13,3%

FIR	MOST FREQUENT MOVEMENT ERRORS
SBAZ	4402 AWY BLANK/1849 AERODROME = FIXED ENTRANCE/ THERE WERE SECTIONS THAT THE GREEN PROGRAM DID NOT RECOGNIZE EVEN THOUGH IT WAS IN THE ROUTE BANK
SBBS	REPEATED AIRWAYS
SBRE	860 AWY INFERIORES
SBAO	NO INF FIXED INPUT / 69 FL ABOVE FL 410
SBCW	9535 FL FIXED OUTPUT BELOW FL 290



STATE		CHILE						
FIR	DELIVERY	TOTAL	MOV. WITH WARNIN	APPROVED HOURS	DEPURATION	APPROVED HOURS AFTER DEP	DISCARDED	% DISCARD
SCTZ	15/02/24	2496	1771	90,37%	2484	100,00%	12	0,480%
SCCZ	15/02/24	956	676	72,55%	947	100,00%	9	0,941%
SCFZ	15/02/24	5600	2808	47,06%	8507	100,00%	*	*
SCEZ/SCIZ	15/02/24	11981	4278	54,72%	12023	100,00%	*	*

FIR	MOST FREQUENT MOVEMENT ERRORS
SCTZ	DESPITE MOVEMENTS WITH WARNINGS, THE HOURS WERE USABLE
SCCZ	There was a change of airways and a reversal of course
SCFZ	2907 FIR SCFZ MOVEMENTS WERE IN THE FIR SCEZ FILE
SCEZ/SCIZ	MOVEMENTS WERE IN THE SCFZ ARCHIVE



STATE		COLOMBIA						
FIR	DELIVERY	TOTAL	MOV. WITH WARNIN	APPROVED HOURS	DEPURATION	APPROVED HOURS AFTER DEP	DISCARDED	% DISCARDED
SKEC/SKED	13/02/24	34863	25944	3,36%	30953	88,78%	3910	11,21%
SKEC	14/02/24	18093	12568	2,24%	16217	89,63%	1876	10,36%
SKED	15/02/24	16770	13376	1,12%	14736	87,87%	2034	12,12%

FIR	MOST FREQUENT MOVEMENT ERRORS
SKEC/SKED	DIFFERENT FIR MOVEMENTS WERE SENT TOGETHER/ TIME FORMAT NOT SCHEDULED/ 14569 AWY BLANK

MOV TOTAL X ERRORS

Category	Value
MOV TOTAL	34863
ERROR	25944

STATE		CUBA						
FIR	DELIVERY	TOTAL	MOV. WITH WARNIN	APPROVED HOURS	DEPURATION	APPROVED HOURS AFTER DEP	DISCARDED	% DISCARD
MUFH	09/02/2024	25502,00	11534	54,38%	25501	100,00%	1	0,003%

FIR	MOST FREQUENT MOVEMENT ERRORS
MUFH	NOVEMBER 2023 MOVEMENTS/ 2024 MOVEMENTS

MOV TOTAL X ERRORS

Category	Value
MOV TOTAL	25502,00
ERROR	11534

STATE		DOMINICAN REPUBLIC						
FIR	DELIVERY	TOTAL	MOV. WITH WARNING	APPROVED HOURS	DEPURATION	APPROVED HOURS AFTER DEP	DISCARDED	% DISCARD
MDCS	09/02/24	10302	2431	81,87%	10291	85,43%	11	0,106%

FIR	MOST FREQUENT MOVEMENT ERRORS
MDCS	1087 MOVES WITH INCORRECT AWY

Category	Value
MOVTOTAL	10302
ERRORS	2431

STATE		ECUADOR						
FIR	DELIVERY	TOTAL	MOV. WITH WARNING	APPROVED HOURS	DEPURATION	APPROVED HOURS AFTER DEP	DISCARDED	% DISCARD
SEFG	15/02/24	9192	1225	85,15%	4569	100,00%	4623	50,29%

FIR	MOST FREQUENT MOVEMENT ERRORS
SEFG	NO RELEVANT ERRORS

Category	Value
MOVTOTAL	9192
ERROR	1225

STATE		GUYANA						
MOVEMENT HAS NOT BEEN SENT								

STATE		FRENCH GUIANA						
MOVEMENT HAS NOT BEEN SENT								

STATE		HAITI												
FIR	DELIVERY	TOTAL	MOV. WITH WARNIN	APPROVED HOURS	DEPURATION	APPROVED HOURS AFTER DEP	DISCARDED	% DISCARD						
MTEG	01/02/24	1879	556	86,71%	1879	86,71%	0	0%						
FIR	MOST FREQUENT MOVEMENT ERRORS													
	NO RELEVANT ERRORS													
<table border="1"> <caption>MOV TOTAL X ERRORS - HAITI</caption> <thead> <tr> <th>Category</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>MOVTOTAL</td> <td>1879</td> </tr> <tr> <td>ERROR</td> <td>556</td> </tr> </tbody> </table>									Category	Value	MOVTOTAL	1879	ERROR	556
Category	Value													
MOVTOTAL	1879													
ERROR	556													

STATE		JAMAICA												
FIR	DELIVERY	TOTAL	MOV. WITH WARNIN	APPROVED HOURS	DEPURATION	APPROVED HOURS AFTER DEP	DISCARDED	% DISCARD						
MKJK	07/02/24	14128	5999	77,00%	12291	97,20%	1837	13,00%						
FIR	MOST FREQUENT MOVEMENT ERRORS													
MKJK	1359 AWY WITHOUT PADDING													
<table border="1"> <caption>MOV TOTAL X ERRORS - JAMAICA</caption> <thead> <tr> <th>Category</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>MOVTOTAL</td> <td>14128</td> </tr> <tr> <td>ERROR</td> <td>5999</td> </tr> </tbody> </table>									Category	Value	MOVTOTAL	14128	ERROR	5999
Category	Value													
MOVTOTAL	14128													
ERROR	5999													

STATE		Netherlands Antilles						
FIR	DELIVERY	TOTAL	MOV. WITH WARNIN	APPROVED HOURS	DEPURATION	APPROVED HOURS AFTER DEP	DISCARDED	% DISCARD
TNCF	29/02/24	6420		100,00%			*	*
FIR	MOST FREQUENT MOVEMENT ERRORS							
TNCF								

STATE		PANAMA							
FIR	DELIVERY	TOTAL	MOV. WITH WARNING	APPROVED HOURS	DEPURATION	APPROVED HOURS AFTER DEP	DISCARDED	% DISCARD	
MPZL	15/02/24	19109	7748	72,67%	11361	90,21%	7748	40,54%	
FIR	MOST FREQUENT MOVEMENT ERRORS								
MPZL	3572 non-existent fixed ones. EX: Nemil. RVSM column grouped with fixed input. Ex: WSEKMA								

Category	Value
MOVTOTAL	19109
ERROR	7748

STATE		PARAGUAY							
FIR	DELIVERY	TOTAL	MOV. WITH WARNING	APPROVED HOURS	DEPURATION	APPROVED HOURS AFTER DEP	DISCARDED	% DISCARD	
SGFA	13/02/24	2108	1242	44,05%	2098	97,03%	10	0,474%	
FIR	MOST FREQUENT MOVEMENT ERRORS								
SGFA	369 MOV FIXO ENTRADA E FL = "DEP"/ 420 MOV FIXO SAIDA = "ARR"								

Category	Value
MOVTOTAL	2108
ERROR	1242

STATE		PERU							
MOVEMENT HAS NOT BEEN SENT									

STATE		SURINAME							
MOVEMENT HAS NOT BEEN SENT									

STATE		TRINIDAD AND TOBAGO						
FIR	DELIVERY	TOTAL	MOV. WITH WARNIN	APPROVED HOURS	DEPURATION	APPROVED HOURS AFTER DEP	DISCARDED	% DISCARD
TTZP	27/02/24	8439	1093	78,14%	6529	90,22%	1910	22,63%

FIR	MOST FREQUENT MOVEMENT ERRORS
TTZP	NON-EXISTENT FIXED

Category	Value
MOV TOTAL	8439
ERROR	1093

STATE		VENEZUELA						
FIR	DELIVERY	TOTAL	MOV. WITH WARNIN	APPROVED HOURS	DEPURATION	APPROVED HOURS AFTER DEP	DESCARTADOS	% DESCARTE
SVZM	15/02/24	5604	1540	67,60%	4028	85,99%	1576	28,12%

FIR	ERROS MAIS FREQUENTES DOS MOVIMENTOS
SVZV	1562 2022 MOVEMENTS/NOT INSERTED MOV 12/01/2023

Category	Value
MOV TOTAL	5604
ERROR	1540

STATE		URUGUAY						
FIR	DELIVERY	TOTAL	MOV. WITH WARNINGS	APPROVED HOURS	DEPURATION	APPROVED HOURS AFTER DEP	DISCARDED	% DISCARD
SUEO	24/05/24	4299	1009	13,81%	4170	100,00%	129	3,000%
FIR	MOST FREQUENT MOVEMENT ERRORS							
SUEO	FL ABAIXO DO RVSM/ FIXO FORA DA FIR SUEO							



Category	Value
MOV TOTAL	4299
ERROR	1009

STATE		COCESNA on behalf of Guatemala, El Salvador, Costa Rica, Honduras, Nicaragua and Belize						
FIR	DELIVERY	TOTAL	MOV. WITH WARNINGS	APPROVED HOURS	DEPURATION	APPROVED HOURS AFTER DEP	DISCARDED	% DISCARD
MHTG	28/02/24	17946	17946	58,93%	17808	91,05%	138	0,768%
FIR	MOST FREQUENT MOVEMENT ERRORS							
MHTG	4 MOVEMENTS WITH DATA FROM 2019 AND 18 MOVEMENTS FROM 2022/ AWY OUTSIDE THE EXPECTED FORMAT							



Category	Value
MOV TOTAL	17946
ERRORS	17946