



ICAO

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

WORKING PAPER

GTE/24 — WP/04
15/07/24

**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

CARSAMMA RVSM APPROVAL AUDIT PROCESS

(Presented by CARSAMMA)

EXECUTIVE SUMMARY	
This Working Paper provides an assessment of non-State-approved operators using the RVSM (Reduced Minimum Vertical Separation) airspace monitored by CARSAMMA in the Caribbean and South America, based on traffic samples from December 2023 and January 2024. RVSM approval records up to June 2024 were used for the assessment.	
Action:	Suggested Actions are included in Section 3
<i>Strategic Objectives:</i>	<ul style="list-style-type: none">• Safety
<i>References:</i>	<ul style="list-style-type: none">• ICAO Doc 9937 - Operating Procedures and Practices for Regional Monitoring Agencies in Relation to the Use of a 300 m (1000 ft) Vertical Separation Minimum Between FL 290 and FL 410 inclusive, second edition, 2019.• Summary (RMACG/6), Cornwall, Canada, 6-10 June 2011.• Summary (RMACG/10), Bangkok, Thailand, 18 - 22 May 2015.

1. Introduction

1.1 As part of the functions of an RMA, described in ICAO Doc 9937 (Reference 1), CARSAMMA performs periodic verifications on operators' compliance with State approval requirements in the airspace of the CAR/SAM Regions. The objective of these controls is to identify unapproved operators and aircraft that use RVSM airspace to ensure the operational safety of the airspace.

1.2. At the RMACG/6, it was decided that all RMAs would carry out a traffic control inspection in their region of jurisdiction every December. (Reference 2: Task No. 10 "*All RMAs conduct a traffic scrutiny survey during the same period [December] to understand the magnitude of the situation.*") In RMACG/10, the requirement to conduct a traffic control inspection in December was modified to allow the traffic control inspection to be performed in any month. (Reference 3: Paragraph 3.2.33 "*The meeting discussed the need for the fixed month for counting activities as decided at the RMACG/6 meeting and agreed that with the maturity of most monitoring programmes, and with most RMAs conducting the monthly verification of approval status, it is not necessary to set a month for data collection, but data sharing between RMAs is crucially important to ensure that they all have the same correct information about approval status*").

1.3. This document describes the process used by CARSAMMA to identify aircraft operating in RVSM airspace without mandatory approval. This is done through a process of matching air traffic movement data in the CAR/SAM Regions and approved aircraft records in the databases of all RMAs. The results are presented for the period between December 2023 and May 2024.

2. Analysis

2.1 CARSAMMA cross-checks the data contained in the traffic samples against the combined database of approvals for all RMAs, which contains the approval records provided by the RMAs. Updates to the combined database are provided monthly by most RMAs.

2.2 Since the registration number of the aircraft is not available on some of the traffic samples, the RVSM airspace audit does not guarantee full verification of the approval status of these traffic samples. In the case of CARSAMMA, transactions without a registration number usually come from operators outside the CAR/SAM Regions. There are RMAs who, when contacted, have ways of identifying the license plate; other RMAs don't have it so easy. For operators in the CAR/SAM Regions, traffic samples usually contain the license plate number.

2.3 Problems arise in the verification process, the main ones being:

- 2.3.1 failure to communicate or delay by the Civil Aviation Authorities;
- 2.3.2 failure to communicate or delay by the State Aviation Authorities;
- 2.3.3 lack of license plate number in the traffic sample;
- 2.3.4 delay in updating the RMA approval database;
- 2.3.5 typographical errors in the original traffic data.

2.4 Table 1 contains a summary of these results. For the aircraft listed, an RVSM approval statement was submitted at point 10 and an RVSM flight level was requested at point 15 of the flight plan. Since there is no current certification record for RVSM airspace operations in the CARSAMMA database, a notification was sent to the Civil and Military Aviation Authorities of their registration/operation statuses to confirm the RVSM approval status.

State	Registry	Operator	ICAO Type	Notification sent	Reply in 30 days	Current RVSM status
ARGENTINA	LVKEF	FBO	B738	YES	NO	NOT APPROVED
ARGENTINA	LVKJE	FBO	B738	YES	NO	NOT APPROVED
ARGENTINA	LVKHU	ARG	A332	YES	NO	NOT APPROVED
ARGENTINA	LVKHO	FBO	B738	YES	NO	NOT APPROVED
ARGENTINA	LVKHT	ARG	A332	YES	NO	NOT APPROVED
ARGENTINA	LVKJF	FBO	B738	YES	NO	NOT APPROVED
ARGENTINA	LVKJA	JES	A320	YES	NO	NOT APPROVED
ARGENTINA	LVKKE	ARG	B38M	YES	NO	NOT APPROVED
ARGENTINA	LVKJD	FB LINEAS AEREAS	B738	YES	NO	NOT APPROVED
ARGENTINA	LVFUT	SOMA SRL	LJ60	YES	NO	NOT APPROVED
ARGENTINA	LVGQK	SOMA SRL	F900	YES	NO	NOT APPROVED
ARGENTINA	LVKFW	ANDES LINEAS AEREAS	B738	YES	NO	NOT APPROVED
ARGENTINA	FBZ3813	FBO - FLYBONDI	A320	YES	NO	NOT APPROVED
ARGENTINA	FBZ5903	FBO - FLYBONDI	A330	YES	NO	NOT APPROVED
ARGENTINA	LVBMS	LA GLORIOSA S.A.	BE20	YES	NO	NOT APPROVED
ARGENTINA	LVFVY	INTERJET S.A.	C510	YES	NO	NOT APPROVED
ARGENTINA	LVHEF	FB LINEAS AEREAS	B738	YES	NO	NOT APPROVED
ARGENTINA	LVHKS	FB LINEAS AEREAS	B738	YES	NO	NOT APPROVED
ARGENTINA	LVKEB	NUEVO BANCO DE SANTA FE	F900	YES	NO	NOT APPROVED
ARGENTINA	LVKFQ	SEA S.A.	CL60	YES	NO	NOT APPROVED
ARGENTINA	LVKKD	ARG	B38M	YES	NO	NOT APPROVED
ARGENTINA	LVKLE	CHEYENNE S.A.	GL5T	YES	NO	NOT APPROVED
ARGENTINA (MILITARY)	T99	FUERZA AEREA ARGENTINA	B737	YES	NO	NOT APPROVED
BRAZIL	PSAES	AZUL	E295	YES	NO	NOT APPROVED
BRAZIL	PSTOT	ANIVIA	B733	YES	NO	NOT APPROVED
BRAZIL	PRYYC	AZUL	A20N	YES	NO	NOT APPROVED
BRAZIL	PRXBO	TAM	A20N	YES	NO	NOT APPROVED
BRAZIL	PRMXA	TAM	A321	YES	NO	NOT APPROVED
BRAZIL	PRGPK	GOL	B738	YES	NO	NOT APPROVED
BRAZIL	PRAQT	AZUL	A20N	YES	NO	NOT APPROVED
BRAZIL	PTAUF	AZUL	E195	YES	NO	NOT APPROVED
BRAZIL	PSGTE	GOL	B38M	YES	NO	NOT APPROVED
BRAZIL	PSGPS	GOL	B38M	YES	NO	NOT APPROVED
BRAZIL	PPMTE	HELISTAR TAXI AEREO	C680	YES	NO	NOT APPROVED
BRAZIL	PPNOB	NOBRE EMPREENDIMENTOS E PARTICIPACOES	FA50	YES	NO	NOT APPROVED
BRAZIL	PRAKL	AZUL	E195	YES	NO	NOT APPROVED
BRAZIL	PRGPD	GOL	B38M	YES	NO	NOT APPROVED

BRAZIL	PRGPG	GOL	B738	YES	NO	NOT APPROVED
BRAZIL	PRGRB	GOL	B38M	YES	NO	NOT APPROVED
BRAZIL	PSGEI	GOL	B38M	YES	NO	NOT APPROVED
BRAZIL	PSPGE	GOL	B38M	YES	NO	NOT APPROVED
BRAZIL	PSPGL	GOL	B38M	YES	NO	NOT APPROVED
BRAZIL	PRMBHQ	TAM	A320	YES	NO	NOT APPROVED
BRAZIL	PRTXBK	TAM	A320	YES	NO	NOT APPROVED
BRAZIL	PRXBO	TAM	A20N	YES	NO	NOT APPROVED
BRAZIL	PTMPA	TAM	A321	YES	NO	NOT APPROVED
BRAZIL	PPXOM	EMBRAER	E50P	YES	NO	NOT APPROVED
BRAZIL	PPYBF	MODERN LOGISTICS	B738	YES	NO	NOT APPROVED
BRAZIL	PRSLH	SIDERAL LINHAS AEREAS	B738	YES	NO	NOT APPROVED
BRAZIL	PSRDR	MUNDIVOX COMUNICACOES	CL60	YES	NO	NOT APPROVED
BRAZIL	PRDAD	--	GLF4	YES	NO	NOT APPROVED
BRAZIL	PPJFZ	LIDER TAXI AEREO S.A.	H25B	YES	NO	NOT APPROVED
BRAZIL	PSGRM	GOL	B38M	YES	NO	NOT APPROVED
BRAZIL	PSAXK	AZUL	E295	YES	NO	NOT APPROVED
BRAZIL	PRAKN	AZUL	E195	YES	NO	NOT APPROVED
BRAZIL (MILITARY)	BRS2854	FUERZA AEREA BRASILEÑA	KC39	YES	NO	NOT APPROVED
BOLIVIA	CP3199	BOA	B738	YES	NO	NOT APPROVED
COLOMBIA	N519VJ	--	SF50	YES	YES	NOT APPROVED
PARAGUAY	ZPCRR	AZP	CRJ2	YES	YES	NOT APPROVED
PARAGUAY	ZPCRS	AZP	CRJ2	YES	YES	NOT APPROVED
PARAGUAY	ZPCRT	AZP	CRJ2	YES	YES	NOT APPROVED
PERU	CCCPI	LAN	A319	YES	NO	NOT APPROVED
PERU	CCCPL	LPE	A319	YES	NO	NOT APPROVED
PERU	CCCPM	LPE	A319	YES	NO	NOT APPROVED
PERU	CCCQK	LPE	A320	YES	NO	NOT APPROVED
PERU	CCDDE	SKYAIRLINE	A21N	YES	NO	NOT APPROVED
PERU	CCCPO	LAN PERU	A319	YES	NO	NOT APPROVED
PERU	CCCQL	LAN PERU	A319	YES	NO	NOT APPROVED
VENEZUELA	YV3250	SERVICIOS AEREOS AYH C.A.	LJ50	YES	NO	NOT APPROVED

Table 1 - audited aircraft that still do not have RVSM approval in the CARSAMMA database

2.5 For operators from regions of other RMAs, the result was inconclusive, as there was no registration record in the submitted flight plans and the contacted RMAs were unable to verify the RVSM approval status of these aircraft. This is shown in table 2 below.

RMA	Indicative	Operator	ICAO Type	Notification Sent	Reply in 30 days	Current RVSM status
ARMA	ETH801	ETHIOPIAN AIRLINES	B77W	YES	YES	NOT APPROVED
EUR RMA	26901	AFP	E390	YES	YES	NOT APPROVED

EUR RMA	9H649FX	FLEXJET MALTA	GLF6	YES	YES	APPROVED
EUR RMA	9HVISTA	VISTAJET	GL7T	YES	YES	APPROVED
EUR RMA	FGSPX	AIR FRANCE	B77W	YES	YES	APPROVED
EUR RMA	ECNRH	IBERIA	A330	YES	YES	APPROVED
RMA CHINA	HL8226	KOREAN AIR	B77L	YES	NO	NOT APPROVED
RMA CHINA	HL8251	KOREAN AIR	B77L	YES	NO	NOT APPROVED

Table 2 - aircraft of other RMAs without registration number in the flight plan. In the last column, the "*" on the first two lines means that the aircraft's lack of registration prevented its status from being confirmed.

2.6 The RMAs who responded to our message were unable to check the status because the flight plans did not include the registration number, only the flight call sign.

2.7 As regards the authorities of the CAR/SAM Regions, the main problem is the lack of response from the State Contact Points.

2.8 The results underline the importance of States notifying CARSAMMA in good time of the approval status of aircraft.

2.9 It is important to note that CARSAMMA's LHD and CRM/ASE sectors use the RMA's Logs and Auditing sector database to carry out their operational safety analyses of the RVSM airspace. Therefore, it is important for states' certification and airworthiness Contact Points to have transparent communication with CARSAMMA and to be aware of the implications of their work with the RMA.

2.10 Another related point is that CARSAMMA constantly responds to requests for verification of the RVSM approval status of other RMAs. Depending on the authority contacted, we never receive a response. Appendix A contains the most recent list of Civil/Military Aviation Authorities in the CAR/SAM Regions.

3 Suggested Actions

3.1 The meeting is invited to observe and review the content of the CARSAMMA audit work presented in this document and that:

- a) States are notified to inform CARSAMMA of the current status of the aircraft listed in table 1 as "not approved".
- b) States are notified to verify that the information described in **Appendix** is up to date and, if not, to inform CARSAMMA of the correct data by submitting Form F1 to RMA;
- c) States are reminded to respect the deadlines set out in table 1 of item 2.2.13 of the Guidance Manual for Contact Points.

APPENDIX

CIVIL/MILITARY CERTIFICATION AND AIRWORTHINESS POINTS OF CONTACT IN THE CAR/SAM REGIONS

STATE	ADMINISTRATION	NAME	TELEPHONE	E-MAIL
ARUBA	Unit Manager Airworthiness & Registration Department of Civil Aviation Aruba - DCA	Justiniano Boekhoudt Jeramiah Schwengle	297 523 2683 297 523 2682 297 523 2681	justiniano.boekhoudt@dca.gov.aw jeramiah.schwengle@dca.gov.aw
ARGENTINA	ANAC Administração Nacional de Aviación Civil [aeronaves de Estado] Dirección General de Aeronavegabilidad Militar Conjunta del Estado Mayor Conjunto de las Fuerzas Armadas	Sr. Walter Grumelli Sr. Miguel Ángel Sr. Marcos David Campos Sr. Hernán Burguener [aeronaves de Estado] Sr. Carlos Agustín Bálzola	54 935-1306- 6377 54 935-1701- 9269 54 36-2466-9610 [aeronaves de Estado] 54 35-1631-5156	wgrumelli@anac.gob.ar amdiaz@anac.gob.ar mcampos@anac.gob.ar hburguener@eana.com.ar estadisticas.dnina@anac.gob.ar [aeronaves de Estado] carlos.balzola@presidencia.gob.ar digamcrrpp@fuerzas-armadas.mil.ar
BAHAMAS	Bahamas Civil Aviation Authority Nassau, Bahamas	Eulys Smith Marcellinus Rolle	(+242) 397-4700 ext. 4778 (+242) 829-9830 mobile	eulys.smith@caabahamas.com marcellinus.rolle@caabahamas.com
BARBADOS	Barbados Civil Aviation Department	Mrs. Tracey Forde- Bailey Mr. Carlisle Simmons	(246) 535-0001 (246) 232-0989	tracey.forde-bailey@barbados.gov.bb carlisle.simmons@barbados.gov.bb
BELIZE	BDCA - Belize Department of Civil Aviation			ceo@tourism.gov.bz
BOLIVIA	DGAC - Dirección General de Aeronautica Civil	Adalid Juan Alavia Chavarria Edson Jaime Veja Sanguenza Walter Guillen Villarroel	(+591) 72221211 (+591) 72846597 (+591) 73787774	aalavia@dgac.gob.bo evega@dgac.gob.bo wguillen@dgac.gob.bo
BRAZIL	AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - ANAC (BRASIL) - Gerência Técnica de Certificação de Empresas - GTCE	Clebio Felipe Abreu da Silva	(+55) (11) 3636- 8628/8629/8630	clebio.felipe@anac.gov.br gtce@anac.gov.br gcta@anac.gov.br
BRAZIL MILITARY	COMANDO GERAL DE APOIO - COMGAP	Major-Brigadeiro do Ar JOSÉ MADUREIRA JUNIOR	(11) 3382-5203 (Cel Av Waldemar Roberto Cabral JORRI)	madureirajmj@fab.mil.br aeronavegabilidade.dirmab@fab.mil.br

STATE	ADMINISTRATION	NAME	TELEPHONE	E-MAIL
CAYMAN ISLANDS	CIVIL AVIATION AUTHORITY - CAA (CAYMAN)	Adrian Miller Craig Connor	Office +1 (345) 949 7811 Ext 235 Fax +1 (345) 949 0761 Mobile +1 (345) 926 2032/928-5480	adrian.miller@caacayman.com craig.connor@caacayman.com
CHILE	Dirección General de Aeronautica Civil - DGAC Fuerza Aerea de Chile	Andres Prado Grez G. Gallardo	+562 2436 3173	aprado@dgac.gob.cl ggallardo@dgac.gob.cl
COLOMBIA 564	Aerocivil - Aeronáutica Civil de Colombia	Juan Oswaldo Hernandez Rodriguez	(+571) 296 2989 (+571) 296 2156	juan.hernandez@aerocivil.gov.co
COLOMBIA (STATE)	Oficina Autoridad Aeronáutica Aviación de Estado	(Subteniente) Gabriel Sigifredo Bolaños Barrera (Técnico subjefe) Carlos Enrique Sarmiento Velandía	(+57) 3229476129 (+57) 3123628450 (+57) 3157654890	gabriel.bolanos@fac.mil.co carlos.sarmiento@fac.mil.co
COSTA RICA	DGAC - Dirección General de Aeronautica Civil	Warren Quiros Victor Meneses Sanchez Danny Davis Hernández	(+506) 2242 8000 R 8151	wquiros@dgac.go.cr vmeneses@dgac.go.cr ddavis@dgac.go.cr
CUBA	IACC - Instituto de Aeronáutica Civil de Cuba	Ing. Orlando Nevot González	(+537) 838 1121	dan@iacc.avianet.cu
CURAÇAO	CCAA - Curaçao Civil Aviation Authority	Peter Steinmetz Osmel Juliana Leslie Laplace Oscar Wason	(+599 9) 839 3319 (+599 9) 513 2961 (+599 9) 839 3319	civilair@gobiernu.cw osmel.juliana@gobiernu.cw leslie.laplace@gobiernu.cw oscar.Wason@gobiernu.cw
ECUADOR	DGAC - Dirección General de Aeronautica Civil [aeronaves de estado] Jefe Sección Mantenimiento GTAE	Gerardo Manuel Santamaría Montenegro Juan Pablo Gonzalez	593-2 294-7400 R: 4930 (593)997736473	avionica@aviacioncivil.gob.ec manuel.santamaria@aviacioncivil.gob.ec jpgonzalez@aviacioncivil.gob.ec
ECUADOR (STATE)	SECCIÓN MANTENIMIENTO GTAE GRUPO AÉREO DE TRANSPORTE ESPECIAL	Francisco Rovira Rivadeneira Fabián Romero Ramiro Serrano Mayo	CEL 0998241782	tovpresidencial@yahoo.es panchorovira@hotmail.com fromero@fae.mil.ec rserrano@fae.mil.ec

STATE	ADMINISTRATION	NAME	TELEPHONE	E-MAIL
EL SALVADOR	Autoridad de Aviación Civil de El Salvador	Roberto Fabio Rovelo Villeda Rubén Enrique Luna Chinchilla	(+503) 2565 4423 (+503) 2565 4460 (+503) 2565 4501	frovelo@aac.gob.sv rluna@aac.gob.sv
GUATEMALA	Dirección General de Aeronautica Civil	Milvia Marleni Ruiz Palencia Victor Godoy	502 5204 8465	victor.godoy@dgac.gob.gt
GUYANA	Guyana Civil Aviation Authority - GCAA	Trevor Daly Roy Sookhoo	592 261 5277	tdaly@gcaa-gy.org rsookhoo@gcaa-gy.org
FRENCH GUYANA				frovira@fae.mil.ec
HAITI	OFNAC - Office National de l'Aviation Civile	Mario Eric Legagneur	50931566050	elegagneur@hotmail.com
HONDURAS		Fredy Osorio Lobo E. Galindo Heriberto Sierra Pavon	5043144003	fredyosoriom@hotmail.com egalindo@ahac.gob.hn
JAMAICA	JCAA - Jamaica Civil Aviation Authority	Deano Leadford	1-876-816-1718	deano.ledford@jcaa.gov.jm
NICARAGUA				dg@inac.gob.ni
PANAMA	Autoridad Aeronáutica Civil	Aristides Meléndez Cesar Garcia Ho Miguel Fong	524-3856 / 6870-8513	aristides.melendez@aeronautica.gob.pa cesar.ho@aeronautica.gob.pa miguel.fong@aeronautica.gob.pa
PARAGUAY	DIRECCIÓN NACIONAL DE AERONAUTICA CIVIL - DINAC	Anibal Andrés González Días Rocio Araujo Guillermo Bonetto	59 521645406 59 5986510077	accu.asuncion@gmail.com / accu@dinac.gov.py raraujo@dinac.gov.py --
PERU	DGAC - Dirección General de Aeronautica Civil	Luiz Enrique Tavera Garcia Paulo Cesar Villas Millones	00511-975156565	itavara@mtc.gob.pe pvila@mtc.gob.pe
DOMINICAN REPUBLIC	IDAC - Instituto Dominicano de Aviación Civil	Pedro A. Piña de los Santos Marino Cruz Jaquez Edgar Soto Altamonte Cristian Gómez Felix Adames Florentino Pedro Torres Luis Cabral	809-274-4322 ext.2289	pedro.pina@idac.gov.do marino.cruz@idac.gov.do edgar.altamonte@idac.gov.do felix.florentino@idac.gov.do ptorres@idac.gov.do luis.cabral@idac.gov.do
SAINT MAARTEN	Department of Civil Aviation Shipping and Maritime	Keeven Duzong		keeven.duzong@sintmaartengov.org

STATE	ADMINISTRATION	NAME	TELEPHONE	E-MAIL
SURINAME	Civil Aviation Department of Suriname	Andre Soeknandan Rudi Soekhoe Brian de Souza Roberto Macnack	(597) 884-0584	casasair@casas.sr a.soeknandan@cadsur.sr bdesouza@casas.sr rmacnack@casas.sr
TRINIDAD & TOBAGO	Trinidad and Tobago Civil Aviation Authority (TTCAA)	Ian Raphael Gomez Raj Narwani	(868) 788-8284	igomez@caa.gov.tt rnarwani@caa.gov.tt
URUGUAY	Dirección Nacional de Aviación Civil e Infraestructura Aeronáutica	Alberto Garcia Juan Lovrich Eduardo Ledesma Brig. Gral. (Av) Gaetano Battagliese Palladino		garalber@gmail.com jlovrich@dinacia.gub.uy
VENEZUELA	INAC - Instituto Nacional de Aviación Civil	Lisseth Carolina Asuaje Lugo Carlos González Ashby	(58) 412 7920972 (58) 424 2054930	aprobacionesespeciales.gco@inac.gob.ve lisseth.azuaje@inac.gob.ve cgonzalezashby@yahoo.com
TURKS AND CAICOS ISLANDS	TCI Civil Aviation Authority	Paul J. Thomas	649 331 1613	pthomas@tcicaa.tc