

**Agenda Item 4: Review of the issues related to RVSM implementation in the CAR/SAM Regions**

**a) ATC Operations Working Group (ATC/WP)**

***ATC RVSM Simulations***

4.1 The meeting took note of the excellent information regarding ATC/RVSM Simulations carried out in Mexico and agreed that it could be used by those Administrations that found it pertinent as a guidance to carry out their own simulations. In this respect, the meeting approved the following conclusion:

**Conclusion AP/ATM/5/26 ATC RVSM Simulations**

That, in order to facilitate RVSM implementation in the CAR/SAM Regions, the States/Territories/International Organizations:

- a) continue carrying out ATC RVSM simulations and present the results in the AP/ATM/6 meeting, including the results of RVSM readiness of flights target of 80% and 90%.
- b) take the results of the RVSM ATC simulations carried out by Mexico, which are presented in **Appendix A** to this part of the report, as guidance for the planning of these simulations.

*Note: The expression “(percentage) of RVSM readiness of flights” refers to the percentage of estimated international and domestic RVSM flights that operate or will operate on RVSM aircraft in a State or FIR.*

4.2 The meeting convened that it is essential that the Administrations make ATC/RVSM simulations in order to identify and evaluate those critical and/or specific aspects that may affect RVSM operations and, on this basis, find the appropriate solutions; for which the following conclusion was approved:

**Conclusion AP/ATM/5/27 Aspects to evaluate in ATC RVSM simulations**

That those States, Territories and International Organizations that make ATC RVSM simulations take the necessary measures to cover, among others, the following issues:

- a) evaluation of RVSM application in the RVSM exclusionary and non-exclusionary airspaces;
- b) detection of necessary specific procedures to be developed;
- c) application of flight levels;

- d) analysis of the workload of the operative personnel;
- e) application the aeronautical RVSM phraseology;
- f) impact of RVSM suspension due to greater grade of severity than moderate turbulence;
- g) evaluation of the software applicable in automated systems;
- h) training of ATC personnel;
- i) contingencies due to ACAS;
- j) aircraft altitude systems failure;
- k) local issues that may affect RVSM implementation;
- l) impact in operational letters of agreement with adjacent ATC units;
- m) transition areas, where applicable;
- n) evaluation of operational readiness target of 80% and 90%.

#### ***Flight Level Allocation Scheme (FLAS)***

4.3 After an extensive and fruitful discussion, the meeting agreed to adopt the Table of Cruising Levels of Appendix 3 to ICAO Annex 2 for the allocation of flight levels in the CAR/SAM RVSM airspace; for which the following conclusion was approved:

#### **Conclusion AP/ATM/5/28      Organization of flight levels in the CAR/SAM Regions**

That CAR/SAM States/Territories/International Organizations:

- a) agree to use the Table of Cruising Levels of Appendix 3 to ICAO Annex 2 for the allocation of flight levels in the RVSM airspace; and
- b) when required, bilaterally agree with adjacent ATC Units of States/Territories/International Organizations the allocation of cruising levels using different tracks to those established in the Table of Cruising Levels of Appendix 3 to ICAO Annex 2, in order to assist predominant traffic directions and appropriate traffic procedures to be associated therewith are specified in the respective Operational Letters of Agreement.

#### ***Amendment to the CAR/SAM Concept of Operations (CONOPS)***

4.3 The meeting took note that the expression “operational priority assignment” for RVSM approved aircraft over non-RVSM approved aircraft, when both operate in an RVSM airspace, could

cause some confusion in some controllers and pilots in view that Doc. 4444, Air Traffic Management, states that priority shall be given to those aircraft which are or are presumed to be in an emergency, including unlawful interference; as well as to ambulance aircraft, etc. and to those that require a special treatment. In this respect, in order to avoid such confusion, the meeting agreed to adopt the word **preference** instead of priority, when referring to RVSM operations; for which the following conclusions were approved:

**Conclusion AP/ATM/5/29      Preference assignment to RVSM aircraft vs. NON-RVSM aircraft in RVSM airspaces**

That ICAO Secretariat amends the CAR/SAM CONOPS in the relevant paragraphs in order to reflect in such document that the ATC, in those domestic RVSM airspaces where NON-RVSM flights are allowed, shall assign operational **preference** to RVSM aircraft over NON-RVSM aircraft.

**Conclusion AP/ATM/5/30      Inclusion of the Table of Cruising Levels in the CONOPS**

That ICAO Secretariat includes in the CAR/SAM CONOPS the ICAO Table of Cruising Levels of Appendix 3 to ICAO Annex 2 to be used for the allocation of flight levels in the CAR/SAM RVSM airspace.

***Transition Areas***

4.5      After and extensive and substantial discussion among the States, the meeting agreed that, due to the presence of RVSM airspace to the north and west of the CAR/SAM Regions, as well as in the EUR/SAM Corridor and considering the commitment of the States to harmonize flight levels across the region, there is no need to establish Transition Areas in both regions. The very limited RVSM traffic between the SAM and AFI Regions, in case AFI Region does not implement RVSM in the oceanic area adjacent to the SAM Region, as agreed by the SAT 11 Meeting, will be handled by means of Operational Letters of Agreement among the States involved. In view of the above, the meeting approved the following conclusion:

**Conclusion AP/ATM/5/31      Non-implementation of transition airspaces**

That the ICAO Secretariat amends the CAR/SAM CONOPS to reflect that no transition airspace will be implemented within the CAR/SAM regions as a result of the January 2005 RVSM implementation.

***Contingency Procedures for RVSM Suspension***

4.6      The meeting extensively discussed the procedures to follow when an ACC has to suspend RVSM operations, taking into account that such suspension could affect adjacent ACCs; in this regard, approved the following conclusion:

**Conclusion AP/ATM/5/32      Contingency Procedures for RVSM Suspension**

That the States/Territories/International Organizations include in their Operational Letters of Agreement the necessary procedures concerning RVSM suspension due to weather, turbulence, equipment failures or other factors.

***Domestic Plans to Accommodate Non RVSM Approved Aircraft***

4.7            The meeting noticed that it would be necessary to know those airspaces in which non-RVSM approved aircraft will be allowed in order to present a complete list of the procedures to the ATC Working Group in the date foreseen; for which the following conclusion was approved:

**Conclusion AP/ATM/5/33      Domestic Plans to Accommodate Non RVSM Approved Aircraft**

That those States/Territories/International Organizations that intend to accommodate non-RVSM approved aircraft in domestic flights within their airspace should finish their work on time to present the complete list of procedures to the ATC W/G at the AP/ATM/7 meeting in May 2004.

***CAR/SAM ATS RVSM Status Table***

4.8            The CAR/SAM ATS RVSM Status Table presented in **Appendix B** to this part of the report reflects the updated information provided by the States/Territories/International Organizations.

**b) Aircraft Operation and Airworthiness Working Group (OPS/AIR/WG)*****Aircraft RVSM Approval Status***

4.9 The meeting took note that, so far, no Administration has provided information to the CARSAMMA regarding RVSM approved aircraft and, in view that since GREPECAS/10 meeting the expected results have not been obtained, considered appropriate to include as a mandatory requirement within the context of the Latin American Regulation Project (LAR – RVSM), to notify the Regional Monitoring Agency the approvals granted to aircraft operated by air services operators of each State/Territory/International Organization. In this respect, the meeting approved the following conclusion:

**Conclusion AP/ATM/5/34      Communication to CARSAMMA of the CAR/SAM aircraft RVSM approval status**

That, complementing the actions developed by the Administrations from GREPECAS/10 meeting:

- a) the LAR RVSM Document includes the requirement that CAR/SAM Region CAAs accomplish with the prompt notification to the CARSAMMA of the details of every RVSM approval published by each State; and
- b) this information be submitted using the form included in the above mentioned regional aeronautical regulation

***Minimum Monitoring Requirements***

4.10 Taking into account the difficulties that aeronautical authorities may confront by certified operators of each State/Territory/International Organization and by virtue of the operator's Minimum Monitoring Requirement for each group of aircraft, which should be accomplished for aircraft requiring the sixty per cent (60%) monitoring of the same type air frame, so that the initiation of such process is not delayed, the meeting approved the following conclusion:

**Conclusion AP/ATM/5/35      Minimum Monitoring Requirements**

That, when civil aviation authorities require the minimum monitoring of the operator for each group of aircraft, up to the completion of the foreseen sixty per cent (60%) monitoring, could apply more restrictive minimum requirements.

***Lateral Offset***

4.11 Considering the information about the adoption of similar operational procedures adopted in other ICAO Regions and taking into account the opinion of the members of the Separation and Airspace Safety Panel (SASP) as to the application of lateral offsets greater than one nautical mile (1NM), in some

route systems, that could be acceptable without a significant increase in the collision risk due to the loss of lateral separation, the meeting approved the following conclusion:

**Conclusion AP/ATM/5/36      Lateral offset for CAR/SAM Regions**

That, considering the time available up to the definitive RVSM implementation in the CAR/SAM Regions and the need to obtain more information on the results of other Regions, when an aircraft is in an area with no radar control and is not possible to assure pilot/ATC communication, a Lateral Offset be provisionally accepted with the following conditions:

- a) a lateral offset of 1 or 2 nautical miles (1 or 2NM) be applied as a normal procedure in network routes of the CAR/SAM Regions;
- b) the lateral offset be applied from the centerline relative to the direction of flight;
- c) be applied to the right of the centerline relative to the direction of flight;
- d) the procedure be adopted at pilots discretion;
- e) the aircraft has the adequate navigation capacity to keep the offset along the foreseen track;  
and
- f) that when the pilot recovers communication with the ATC must report lateral offset.

**c) Safety and Airspace Monitoring Working Group (SAM/WG)*****SAM/WG Tasks***

4.12 The meeting took note of tasks 9 and 56, corresponding to SAM/WG, of the CAR/SAM RVSM Implementation Task List have already been completed; for which the following conclusion was approved:

**Conclusion AP/ATM/5/37 SAM/WG Tasks**

That the RVSM Implementation Task List be modified indicating that tasks 9 and 56, corresponding to SAM/WG, have been completed.

***Mountain Wave Activity***

4.13 The group discussed the need to have information about mountain wave activity. A preliminary assessment has shown that this is not a problem in CAR/SAM Regions, but this phenomenon will be better evaluated as more data is collected. Some flights that called the attention of the group were the ones between Argentina and Chile.

***Large height deviation reports***

4.14 The SAM/WG informed the meeting that, prior to RVSM implementation, the Collision Risk Model (CRM) is used to estimate the overall risk of the system attributable to all causes. To this effect, it is required that many parameters derived from the data sources be provided to the CARSAMMA. One of these parameters is the total number of annual flying hours at incorrect flight levels. To accurately estimate the risk, the CARSAMMA requests monthly reports of the Large Height Deviations (LHD) in the Flight Information Regions (FIR) of the CAR/SAM RVSM airspace. These LHD reports contain the necessary information to estimate the total number of annual flying hours at incorrect flight levels. In this respect, the meeting agreed that States should provide the CARSAMMA with LHD monthly reports of 300 ft or more in order to facilitate RVSM airspace safety monitoring. In this regard, the meeting approved the following conclusion:

**Conclusion AP/ATM/5/38 Large height deviation reports**

That all States/Territories/International Organizations should provide an extensive report, even if no deviations occur, of large height deviations using the form available in the CARSAMMA website, presented in **Appendix C** to this part of the report. ([www.cgna.gov.br](http://www.cgna.gov.br))

### ***RVSM Readiness Assessment***

4.15 The meeting took note that the CARSAMMA is not yet provided with the RVSM approval status of the aircraft fleet operating in the CAR/SAM Regions and that, in order to carry out a preliminary RVSM Readiness Assessment, which will be one of the parameters to be taken into account for RVSM implementation, is necessary that such information be available to the CARSAMMA as soon as possible; for which the following conclusions were approved:

#### **Conclusion AP/ATM/5/39 Information on RVSM approval status to the CARSAMMA**

That States/Territories/International Organizations provide the CARSAMMA, as soon as possible, the information about aircraft/operators already RVSM approved.

#### **Conclusión AP/ATM/5/40 Data on RVSM approval status of other Regional Monitoring Agencies**

That the CARSAMMA use RVSM approval status data from other Regional Monitoring Agencies (APARMO, NAARMO and EUROCONTROL) to supplement and accomplish the objectives of RVSM Readiness Assessment of the CAR/SAM Regions.

### ***Cots/Benefit Analysis***

4.16 The meeting received information on the preliminary results of the Cost/Benefit analysis carried out by the FAA, based on the Official Airlines Guide (OAG) and the costs associated to operations in the North American airspace. Likewise, the meeting deemed convenient to include in the Cost/Benefit analysis, the costs which the service providers would incur regarding ATC modifications required for RVSM implementation. After considering the delegates' comments on this preliminary analysis, the meeting approved the following conclusions:

#### **Conclusion AP/ATM/5/41 Cost/Benefit Analysis**

That the final Cost/Benefit analysis consider other factors like ATC costs, capital costs, fuel cost and discount rates related to CAR/SAM Regions.

#### **Conclusion AP/ATM/5/42 Costs of ATC modifications**

That States/Territories/International Organizations provide the RVSM Task Force in the AP/ATM/6, the approximate costs of ATC modifications for RVSM implementation.

### ***Minimum Monitoring Requirements***

4.17 Considering the need to initiate the monitoring process in the CAR/SAM Regions and to harmonize the Minimum Monitoring Requirements with other regions, the meeting agreed the use of the new table presented in **Appendix D** to this part of the report; for which the following conclusion was approved:

**Conclusion AP/ATM/5/43     Minimum Monitoring Requirements**

That States/Territories/International Organizations shall use, for RVSM approval process, the Minimum Monitoring Requirements Chart described in **Appendix D** to this part of the report.

***Mode C Data Collection***

4.18        The meeting took note that the Mode C data is necessary for the aircraft approval process and for safety assessment, but some Administrations would not have the capacity to collect such data; for which the following conclusion was approved:

**Conclusion AP/ATM/5/44     Mode C Data Collection**

That the FAA provides the GPS Monitoring Units with Altitude Recording Devices (ARD), so that the States/Territories/International Organizations no longer need to provide the Mode C data. States/Territories/International Organizations should still try to have the means of collecting the Mode C data just in case the ARD is inconclusive.

***Use of ASE data provided by other RMA***

4.19        Due to the difficulty to obtain enough data of Altimetry System Error (ASE), information that will be completed at the end of this year, the meeting approved the following conclusion:

**Conclusion AP/ATM/5/45     Use of ASE data provided by other RMA**

The CARSAMMA will use ASE data provided by other RMA's (APARMO, NAARMO and EUROCONTROL) to carry out the preliminary safety assessment for the CAR/SAM Regions.

***Traffic Data Collection Form***

4.20        The SAM/WG informed that, according to the analysis of the results of the first traffic data collection sample carried out by the States/Territories/International Organizations in December 2002 and sent to CARSAMMA, a new format should be used with a better guidance on how to fill in the form; in view of which, the following conclusion was approved:

**Conclusion AP/ATM/5/46     New Traffic Data Collection Form**

That States/Territories/International Organizations adopt the new traffic data collection form, with the orientation on how to fill in the fields, presented in **Appendix E** to this part of the report.

*New data collection*

4.21 IATA informed the meeting that ARINC will be the company in charge of the monitoring of aircraft of the airlines members of IATA operating in the CAR/SAM Regions, which will be in close contact with the CARSAMMA; in view of which the meeting approved the following conclusion:

**Conclusion AP/ATM/5/47      New data collection**

That States/Territories/International Organizations collect during the period from **01 to 30 September 2003** data related to flights carried out in the CAR/SAM Regions and sent it to the CARSAMMA before 30 October 2003. That sample should be in accordance with the form described in **Appendix E** to this part of the report and preferably in Excel file.

4.22 The SAM/WG informed the meeting that, taking into account the amount and complexity of the work to be done, the working group decided to hold another meeting from 21 to 25 July 2003 in Sao Jose dos Campos, Brazil, as part of the training programme of the CARSAMMA personnel.

4.23 Due to the importance of the data collection and the submission of this information to the CARSAMMA, in order to be considered in the safety assessment to be made prior to RVSM implementation in the CAR/SAM Regions, the meeting agreed to request and commit every State/Territory/International Organization in this process, which will enable the accomplishment of the GREPECAS mandate for a safe and organized RVSM implementation in the CAR/SAM Regions. Failure to do so, the RVSM implementation could be delayed with the subsequent impact in the investments of the States/Service Providers and users of the Region.

**d) Review of the Task List for RVSM Implementation in the CAR/SAM Regions**

4.24 The meeting reviewed the Task List for RVSM Implementation in the CAR/SAM Region and adopted the new updated Task List included as **Appendix F**.

## **Appendix A**

### **Summarized report of the first ATC/RVSM simulation carried out by Mexico (MRVSM) during the months of March and April 2003**

#### **1. Introduction**

1.1 In keeping with the important tasks to be carried out for RVSM implementation, the ATC carried out simulations between FL290 and FL410 inclusive, in a radar environment.

1.2 The simulations were developed according to the RVSM simulation programme for all ACCs that defined, for each week, the important aspects to be assessed within a virtual RVSM scenario during peak hours in each Sector.

#### **2. Relevant results of the RVSM simulation in Mexico**

##### **2.1 Objective of the first simulation**

2.1.1 Make the operational concept, use and problems of RVSM known to the participating controllers.

##### **2.2 Airspace**

2.2.1 The controlled upper airspace from FL290 to FL410 inclusive, and the adjacent sectors, were considered.

##### **2.3 Scenarios**

2.3.1 Real-like scenarios were developed, taking into account aircraft, ATS routes, and peak hours, in keeping with the simulation guidance programme. Experienced route controllers, who will act as monitors during the implementation process, participated.

##### **2.4 Inclusion of the letter W in box 10 of the Flight Plan**

2.4.1 It is vital for the ATC that the various flight plan (FPL and RPL) originators include the letter W; otherwise, there will be a negative impact on traffic display and, particularly, on the application of the separation by the controller. Likewise, flight plan templates containing protection parameters to prevent this type of errors should be developed in order to improve the reliability of the flight plan information supplied to the ATC.

##### **2.5 Use of flight levels**

2.5.1 During the simulation, it was noted that some controllers had difficulties to properly understand and apply the new flight levels and, particularly, FL310, FL350 and FL390. This becomes critical when the traffic is more dense, and the use of current levels prevails. In this respect, it is

advisable to give controllers sufficient time to practice before the implementation takes place, and to have the new cruise level table on display in the control position for a prudential time after RVSM implementation for quick reference.

## 2.6 **Application of the 1000-ft separation**

2.6.1 Initially, monitoring and maintaining a 1000-ft separation between aircraft creates stress in controllers, but it decreases as they get used to the new separation between FL290 and FL 410.

## 2.7 **Revision of the Letters of Agreement**

2.7.1 It is advisable to revise the Letters of Agreement between adjacent ACCs, so as to avoid, during a prudential period of time following RVSM implementation, agreements that allow aircraft with different levels to enter the sector.

## 2.8 **Increased work load**

2.8.1 The work load of the controller is increased by the lack of knowledge of the level table and phraseology, the presence of non-RVSM aircraft and the application of a 2000-ft separation, bad weather conditions and flight level monitoring. In no case did the workload exceed the observed capacity of the controller. It is necessary to define an easy method to measure the workload of the controller during separation, co-ordination, communication, and other functions.

## 2.9 **RVSM complexity**

2.9.1 In our case, the addition of six levels favours air traffic control activities, and thus does not add any complexity.

## 2.10 **ATC-cleared non-RVSM commercial aircraft**

2.10.1 To avoid additional complexity and work load for the controller, non-RVSM aircraft should only be cleared on schedules and/or routes with scarce movement of previously-identified aircraft.

## 2.11 **Suspension of RVSM**

2.11.1 It is not practical or advisable to suspend RVSM in airspace sections or routes because it is difficult for the controller to monitor and achieve the proper separation. It is therefore recommended, whenever possible, to apply the suspension by altitude blocks.

## 2.12 **RVSM transition areas**

2.12.1 Transition areas are not desirable due to their complexity and impact on users; however, if the case arises, sectors will need to be accommodated. It is very important to know duly in advance to the implementation date if an adjacent State is not going to start RVSM implementation concurrently, since that would require the organization and establishment of a sector duly equipped and staffed to meet such requirement.

### 2.13 **300-ft or greater deviations**

2.13.1 Monitoring of the altitude transponder (Mode C) for reporting deviations must be increased. Likewise, altimeter settings must be entered regularly into the ATC computer in the control position. The 300-ft or greater deviation concept to avoid using Mode C information in vertical separation should be adjusted to 200 ft, in keeping with the new RVSM altimetry precision requirements.

### 2.14 **Display modification and conflict alert (STCA)**

2.14.1 The ATC software will need to be modified in order to identify non-RVSM aircraft by means of a colour or letter in the radar label. The conflict alert parameter (STCA) will also need to be modified from 2000 to 1000 ft.

### 2.15 **Parallel offset (2 NM) procedure**

2.15.1 In a radar environment where a 10-NM or greater (horizontal) separation is applied, it is advisable to study the possibility of the pilot applying the offset procedure (2 NM parallel to the centre of the route, provided this does not represent a 5-NM lateral reduction).

### 2.16 **Identification of non-RVSM aircraft**

2.16.1 The use of colour strips that stand out from the rest could help the manual controller visualize non-RVSM aircraft in the control position.

### 2.17 **Training of ATC personnel**

2.17.1 From the practical point of view, it is felt that the training of ATC personnel should last enough and take place prior to RVSM implementation.

### 2.18 **ACAS contingencies**

2.18.1 The current procedure shall be applied, providing useful traffic information only.

### 2.19 **Failure of airborne altimetry systems**

2.19.1 Once the pilot has confirmed the failure, the procedure would be to descend below flight level 290; however, if, in the opinion of the controller, traffic conditions allow it, the possibility of maintaining the aircraft within RVSM airspace should be examined, taking into account the airport of destination and applying an offset procedure or a lateral separation between adjacent traffic levels in opposite directions.

20 June 2003

Caribbean/South American RVSM ATS Status/										
State/ATS Provider	FIR(s)	Flight level	Accommodate Unapproved A/C at RVSM airspace	Publish Adv AIC/ NOTAM	Simulation Plans	Publish AIP Supp	LOAs	System Mods	Training	Trigger NOTAM
					Completed					
Argentina	Comodoro Rivadavia, Córdoba, Ezeiza, Mendoza, Resistencia	350*-410	Yes	Yes	Yes					
COCESNA/Belize, El Salvador, Costa Rica, Guatemala, Honduras, Nicaragua	Central América	290-410	Yes	Yes	Yes					
Bolivia	La Paz	290-410	No	Yes	Yes					
Brazil	Belem, Brasilia, Curitiba, Porto Velho, Recife, Atlántico, Manaus	290-410	Yes	Yes	Yes					
Chile	Antofagasta, Puerto Montt, Punta Arenas, Santiago, Isla de Pascua	290-410	Yes	Yes	Yes/Y					
Colombia	Barranquilla, Bogota	290**-410	Yes	Yes	Yes					
Cuba	Havana	290-410	Yes	Yes	Yes					
Dominican Republic	Santo Domingo	290-410	No	Yes	Yes/Y					
Ecuador	Guayaquil	290-410	Yes	Yes	Yes					
French Guiana	Rochambeau	290-410	No	Yes	Yes					
Guyana	Georgetown	290-410	No	Yes	Yes					
Haiti	Port Au Prince	290-410	No	Yes	Yes					
Jamaica	Kingston	290-410	No	Yes	Yes					
México	México, Mazatlán Oceanic	290-410	Yes	Yes	Yes/Y					
Netherlands Antilles	Curacao	290-410	No	Yes	TBD					
Panama	Panamá	290-410	No	Yes	Yes					
Paraguay	Asunción	290-410	Yes	Yes	Yes					
Peru	Lima	290-410	Yes	Yes	Yes					
Suriname	Paramaribo	290-410	No	Yes	Yes					
Trinidad and Tobago, Grenada, Barbados, St. Vincent, St. Lucia, Martinique, Guadeloupe, Dominica, Antigua, Barbuda, St. Kitts, Nevis, St. Barthelemy	Piarco	290-410	No	Yes	Yes					
United States	Houston Oceanic, Miami Oceanic, San Juan	290-410	No	Yes	Yes/Y					
Uruguay	Montevideo	290-410	No	Yes	Yes					
Venezuela	Maiquetía	290-410	Yes	Yes	Yes					

\* Argentina is carrying out efforts to implement RVSM from FL 290 in harmony with the CAR/SAM States/Territories/International Organizations / Argentina está haciendo esfuerzos para implantar RVSM desde FL 290 en armonía con los Estados/Territorios/Organismos Internacionales de las Regiones CAR/SAM.

\*\* From FL290 to FL340 depending on the resolution of some issues. / Desde FL290 a FL340 dependiendo de la resolución de algunos asuntos.



## EXPLANATION OF THE NAVIGATION DEVIATION INVESTIGATION FORM

1. The ATCO/Pilot should fill as many items as possible.
2. Complementary data can be attached.
3. The notification of any deviation (vertical or lateral) has to be classified, when possible, according to the following types:
  - 3.1 For Large Height Deviations (vertical deviation).
    - a. ATC system loop error (\*).
    - b. Contingency action due to engine fault.
    - c. Contingency action due to pressurisation failure.
    - d. Contingency action due to other cause.
    - e. Failure to climb/descend as cleared.
    - f. Climb/descend without ATC clearance.
    - g. Entry airspace at an incorrect level.
    - h. ATC FL re-clearance resulting in loss of lateral or longitudinal separation.
    - i. Deviation due to ACAS/TCAS.
    - j. Aircraft unable to maintain level.
    - k. Other.
  - 3.2 For lateral deviations
    - a. ATC system loop error (\*).
    - b. Equipment control error including inadvertent waypoint error.
    - c. Waypoint insertion error due to the correct entry of incorrect position.
    - d. Other with failure notified to ATC in time for action.
    - e. Other with failure notified to ATC too late for action.
    - f. Other with failure notified/received by ATC.
    - g. Lateral deviations due to weather when unable to obtain prior ATC clearance.

### Notes:

1. There are data that have to be notified by pilot.
2. As contingency procedures have to be followed, if a NO is included in “WERE the contingency Procedures followed”, an explanation (WHY) have to be included in “Other comments”.
3. (\*) ATC system loop error: any error caused by a misunderstanding between the pilot and controller regarding the assigned flight level, Mach number or route to be followed. Such errors can be caused by errors in coordination between ATC units or by misinterpretation by pilots of a clearance or re-clearance. (*Doc. 9689-NA/953. Manual on airspace planning methodology for the determination of separation minima*).

## CARIBBEAN AND SOUTH AMERICAN RVSM MINIMUM MONITORING REQUIREMENTS

**E F F E C T I V E   A P R I L   2 1 ,   2 0 0 3**

1. UPDATE OF MONITORING REQUIREMENTS CHART AND WEBSITE. The Minimum Monitoring Requirements Chart is a living document. As significant performance data is obtained on specific aircraft groups or types, the CARSAMMA will update the minimum monitoring requirements for those types or groups. Experience has shown that performance data will normally justify reducing the requirements. Updates to the Minimum Monitoring Requirements chart, will be posted on the CARSAMMA RVSM Documentation webpage. The RVSM Documentation page can be accessed from the CARSAMMA Website:

<http://www.cgna.gov.br>

2. INITIAL MONITORING. All operators that operate or intend to operate in airspace where RVSM is applied are required to participate in the RVSM monitoring program. The attached chart of monitoring requirements establishes requirements for initial monitoring associated with the RVSM approval process. In their application to the appropriate civil aviation authority for RVSM approval, operators must show a plan for meeting the applicable initial monitoring requirements.

3. AIRCRAFT STATUS FOR MONITORING. Aircraft engineering work that is required to bring aircraft into compliance with RVSM standards must be completed prior to the aircraft being monitored. Any exception to this rule will be coordinated with the responsible civil aviation authority.

4. APPLICABILITY OF MONITORING FROM OTHER REGIONS. Monitoring data obtained in conjunction with RVSM monitoring programs from other regions can be used to meet Caribbean and South American RVSM monitoring requirements. The Caribbean and South American Regional Monitoring Agency (CARSAMMA), which is responsible for administering the Caribbean and South American RVSM monitoring program, has access to monitoring data from other regions and will inform other civil aviation authorities and operators concerning satisfaction of Caribbean and South American monitoring requirements.

5. MONITORING PRIOR TO THE ISSUE OF RVSM OPERATIONAL APPROVAL IS NOT A REQUIREMENT. Operators should submit monitoring plans to the responsible civil aviation authority that show how they intend to meet the requirements specified in the table below. Monitoring will be carried out in accordance with this table.

6. AIRCRAFT GROUPS NOT LISTED ON THE CHART. Contact the CARSAMMA for clarification if an aircraft group is not listed on the Minimum Monitoring Requirements chart or for clarification of other monitoring related issues. An aircraft group not listed in the table below will probably be subject to Category 2 monitoring requirements.

7. TABLE OF MONITORING GROUPS. A table of monitoring groups is provided in the pages following the Minimum Monitoring Requirements Chart. The table shows the aircraft types and series that are grouped together for operator monitoring purposes.

8. TRAILING CONE DATA. Altimetry System Error estimations developed using Trailing Cone data collected during RVSM certification flights can be used to fulfil monitoring requirements. It must be documented, however, that aircraft RVSM systems were in the approved RVSM configuration for the flight.

9. MONITORING OF AIRFRAMES THAT ARE RVSM COMPLIANT ON DELIVERY. If an operator adds new RVSM compliant airframes of a type for which it already has RVSM operational approval and has completed monitoring requirements for the type in accordance with the attached chart, the new airframes are not required to be monitored. If an operator adds new RVSM compliant airframes of an aircraft type for which it has

NOT previously received RVSM operational approval, then the operator should complete monitoring in accordance with the attached chart.

10. FOLLOW-ON MONITORING. Monitoring is an on-going program that will continue after RVSM implementation. The CARSAMMA will coordinate a follow-on monitoring program with industry after implementation.

**MONITORING IS REQUIRED IN ACCORDANCE WITH THIS CHART, HOWEVER, IT IS NOT REQUIRED TO BE COMPLETED PRIOR TO OPERATIONAL APPROVAL**

MONITORING CATEGORY	AIRCRAFT TYPE	MINIMUM OPERATOR MONITORING FOR EACH AIRCRAFT GROUP
<p><b>1</b></p> <p>Group approved and monitoring data indicates performance in accordance with RVSM standards.</p> <p><b>Group Definition:</b> aircraft have been manufactured to a nominally identical design and build and for RVSM airworthiness approval fall into a group established in an RVSM certification document (e.g., Service Bulletin, Supplemental Type Certificate, Type Certificate Data Sheet).</p>	<p>[A30B, A306], [A312 (GE), A313(GE)], [A312 (PW), A313(PW)], A318, [ A319, A320, A321], [A332, A333], [A342, A343], A344, A345, A346</p> <p>B712, [B721, B722], [B733, B734, B735], B737(Cargo) [B736, B737/BBJ, B738/BBJ, B739], [B741, B742, B743], B74S, B744 (5" Probe), B744 (10" Probe), B752, B753, [B762, B763], B764, B772, B773</p> <p>CL60(600/601), CL60(604), C560, [CRJ1, CRJ2], CRJ7, DC10, [E135, E145], F100, GLF4, GLF5, LJ60,</p> <p>L101, MD10, MD11, MD80 (All series), MD90</p>	<p>Two airframes from each fleet* of an operator to be monitored as soon as possible but <b>not later than 6 months after the issue of RVSM operational approval or not later than 6 months after the start of Caribbean and South American RVSM operations, whichever occurs later.</b></p> <p><i>* Note. For the purposes of monitoring, aircraft within parenthesis [ ] may be considered as belonging to the same monitoring group. For example, an operator with six A332 and four A333 aircraft may monitor one A332 and one A333 or two A332 aircraft or two A333 aircraft.</i></p>
<p><b>2</b></p> <p>Group approved but insufficient monitoring data collected to move aircraft to Monitoring Category 1. Group definition applies.</p>	<p>Other group aircraft other than those listed above including:</p> <p>A124, ASTR, B703, B731, B732, BE20, BE40, C500, C25A, C25B, C525, C550**, C56X, C650, C750, CRJ9, [DC86, DC87], DC93, DC95, F2TH, [FA50 FA50EX], F70, [F900, F900EX], FA20, FA10, GLF2(II), GLF(IIB), GLF3, GALX, GLEX, H25B(700), H25B(800), H25C, IL62, IL76, IL86, IL96, J328, L29(2), L29(731), LJ31, [LJ35, LJ36], LJ45, LJ55, SBR1, T134, T154, T204, P180, PRM1, YK42</p>	<p>60% of airframes from each fleet of an operator (round up if fractional), as soon as possible but <b>not later than 6 months after the issue of RVSM operational approval or not later than 6 months after the start of Caribbean and South American RVSM operations, whichever occurs later.</b></p> <p><b>** Refer to aircraft group table for detail on C550 monitoring</b></p>

3	<p>Non-Group</p> <p><b><u>Non-group Definition:</u></b> aircraft that do not fall under the group definition <u>and</u> for RVSM airworthiness approval are presented as an individual airframe.</p>	Non-group approved aircraft	100% of aircraft shall be monitored as soon as possible but <b>not later than 6 months after the issue of RVSM operational approval <u>or</u> not later than 6 months after the start of Caribbean and South American RVSM operations, <u>whichever occurs later.</u></b>
---	--	-----------------------------	---

### Monitoring Groups for Aircraft Certified under Group Approval Requirements

Monitoring Group	ICAO Designator	A/C Type	A/C Series
A124	A124	AN-124 RUSLAN	ALL SERIES
A300	A306 A30B	A300 A300	600, 600F, 600R, 620, 620R, 620RF B2-100, B2-200, B4-100, B4-100F, B4-120, B4-200, B4-200F, B4-220, C4-200
A310-GE	A310	A310	200, 200F, 300, 300F
A310-PW	A310	A310	220, 220F, 320
A318	A318	A318	ALL SERIES
A320	A319 A320 A321	A319 A320 A321	CJ, 110, 130 110, 210, 230 110, 130, 210, 230
A330	A332, A333	A330	200, 220, 240, 300, 320, 340
A340	A342, A343,	A340	210, 310
A345	A345	A340	540
A346	A346	A340	640
A3ST	A3ST	A300	600R ST BELUGA
AN72	AN72	AN-74, AN-72	ALL SERIES
ASTR	ASTR	1125 ASTRA	ALL SERIES
ASTR-SPX	ASTR	ASTR SPX	ALL SERIES
AVRO	RJ1H, RJ70, RJ85	AVRO	RJ70, RJ85, RJ100
B712	B712	B717	200
B727	B721 B722	B727	100, 100C, 100F, 100QF, 200, 200F
B732	B732	B737	200, 200C
B737 (Classic)	B733 B734 B735	B737	300, 400, 500
B737 New Generation (NG)	B736 B737 B738 B739	B737 B737 B737 B737	600 700, 700BBJ 800 900
B737 (Cargo)	B737	B737	700C
B747Classic (CL)	B741 B742 B743	B747	100, 100B, 100F, 200B, 200C, 200F, 200SF, 300
B74S	B74S	B747	SR, SP

Monitoring Group	ICAO Designator	A/C Type	A/C Series
B744-5	B744	B747	400, 400D, 400F (With 5 inch Probes)
B744-10	B744	B747	400, 400D, 400F (With 10 inch Probes)
B752	B752	B757	200, 200PF
B753	B753	B757	300
B767	B762 B763	B767	200, 200EM, 200ER, 200ERM, 300, 300ER, 300ERF
B764	B764	B767	400ER
B772	B772	B777	200, 200ER, 300, 300ER
B773	B773	B777	300, 300ER
BE40	BE40	BEECHJET 400A	ALL SERIES
BE20	BE20	BEECH 200 -KINGAIR	ALL SERIES
C500	C500	500 CITATION, 500 CITATION I, 501 CITATION I SINGLE PILOT	ALL SERIES
C525	C525	525 CITATIONJET, 525 CITATIONJET I	ALL SERIES
C525-II	C25A	525A CITATIONJET II	ALL SERIES
C525 CJ3	C25B	CITATIONJET III	ALL SERIES
C550-552	C550	552 CITATION II	ALL SERIES
C550-B	C550	550 CITATION BRAVO	ALL SERIES
C550-II	C550	550 CITATION II, 551 CITATION II SINGLE PILOT	ALL SERIES
C550-SII	C550	S550 CITATION SUPER II	ALL SERIES
C560	C560	560 CITATION V, 560 CITATION V ULTRA, 560 CITATION V ULTRA ENCORE	ALL SERIES
C56X	C56X	560 CITATION EXCEL	ALL SERIES
C650	C650	650 CITATION III , 650 CITATION VI , 650 CITATION VII	ALL SERIES
C750	C750	750 CITATION X	ALL SERIES
CARJ	CRJ1, CRJ2	REGIONALJET	100, 200, 200ER, 200LR
CRJ-700	CRJ7	REGIONALJET	700
CRJ-900	CRJ9	REGIONALJET	900
CL600	CL60	CL-600 CL-601	CL-600-1A11 CL-600-2A12, CL-600-2B16
CL604	CL60	CL-604	CL-600-2B16
BD100	CL30	CHALLENGER 300	ALL SERIES
BD700	GL5T	GLOBAL 5000	ALL SERIES
CONC	CONC	CONCORDE	ALL SERIES

Monitoring Group	ICAO Designator	A/C Type	A/C Series
DC10	DC10	DC-10	10, 10F, 15, 30, 30F, 40, 40F
DC86-7	DC86, DC87	DC-8	62, 62F, 72, 72F
DC93	DC93	DC-9	30, 30F
DC95	DC95	DC-9	SERIES 51
E135-145	E135, E145	EMB-135, EMB-145	ALL SERIES
F100	F100	FOKKER 100	ALL SERIES
F2TH	F2TH	FALCON 2000	ALL SERIES
F70	F70	FOKKER 70	ALL SERIES
F900	F900	FALCON 900, FALCON 900EX	ALL SERIES
FA10	FA10	FALCON 10	ALL SERIES
FA20	FA20	FALCON 20 FALCON 200	ALL SERIES
FA50	FA50	FALCON 50, FALCON 50EX	ALL SERIES
GALX	GALX	1126 GALAXY	ALL SERIES
GLEX	GLEX	BD-700 GLOBAL EXPRESS	ALL SERIES
GLF2	GLF2	GULFSTREAM II (G-1159),	ALL SERIES
GLF2B	GLF2	GULFSTREAM IIB (G-1159B)	ALL SERIES
GLF3	GLF3	GULFSTREAM III (G-1159A)	ALL SERIES
GLF4	GLF4	GULFSTREAM IV (G-1159C)	ALL SERIES
GLF5	GLF5	GULFSTREAM V (G-1159D)	ALL SERIES
H25B-700	H25B	BAE 125 / HS125	700B
H25B-800	H25B	BAE 125 / HAWKER 800XP, BAE 125 / HAWKER 800, BAE 125 / HS125	ALL SERIES/A, B/800
H25C	H25C	BAE 125 / HAWKER 1000	A , B
IL86	IL86	IL-86	NO SERIES
IL96	IL96	IL-96	M , T, 300
J328	J328	328JET	ALL SERIES
L101	L101	L-1011 TRISTAR	1 (385-1), 40 (385-1), 50 (385-1), 100, 150 (385-1-14), 200, 250 (385-1-15), 500 (385-3)
L29B-2	L29B	L-1329 JETSTAR 2	ALL SERIES
L29B-731	L29B	L-1329 JETSTAR 731	ALL SERIES
LJ31	LJ31	LEARJET 31	NO SERIES, A
LJ35/6	LJ35 LJ36	LEARJET 35 LEARJET 36	NO SERIES, A

<b>Monitoring Group</b>	<b>ICAO Designator</b>	<b>A/C Type</b>	<b>A/C Series</b>
LJ40	LJ40	LEARJET 40	ALL SERIES
LJ45	LJ45	LEARJET 45	ALL SERIES
LJ55	LJ55	LEARJET 55	NO SERIES B, C
LJ60	LJ60	LEARJET 60	ALL SERIES
MD10	MD10	MD-10	ALL SERIES
MD11	MD11	MD-11	COMBI, ER, FREIGHTER, PASSENGER
MD80	MD81, MD82, MD83, MD87, MD88	MD-80	81, 82, 83, 87, 88
MD90	MD90	MD-90	30, 30ER
P180	P180	P-180 AVANTI	ALL SERIES
PRM1	PRM1	PREMIER 1	ALL SERIES
T134	T134	TU-134	A, B
T154	T154	TU-154	A, B, M, S
T204	T204, T224, T234	TU-204, TU-224, TU-234	100, 100C, 120RR, 200, C
YK42	YK42	YAK-42	ALL SERIES



## ORIENTATION FOR FILLING OUT THE TRAFFIC SAMPLE FORM

### 1. Introduction

- This form is directed to the data collection with the objective of obtaining an air traffic movement sample for the safety assessment of the operations in the CAR/SAM airspace.
- The form should be made in EXCEL format and filled out so that all the events (air traffic movements) of every day of the requested period are chronologically arranged and in only one form, that is to say, in just one EXCEL file (without blank lines or intermediary headers).
- The filling out of all fields is compulsory, except the fields contained in the entitled interval "Optional Fields" that should only be filled if there is change of flight level or airway.
- The data sampling shall correspond to the daily air traffic movement at or above FL 290 until FL 410, inclusive, in the requested period, by FIR and in all routes of the FIR.

### 2. Compulsory Fields

- Line 07: Field "FIR Identification"  
It shall be filled according to the ICAO designator contained in Doc.7910.  
Example: SBBS, SLLF, SAEU.
- Column A: Field "Date"  
It shall be filled just with numeric characters in the following way: dd/mm/yy  
Example: for February 01, 2003 it must be filled 01/02/03.
- Column B: Field "Call sign"  
It shall be filled with at most 7 alphanumeric characters, without spacing, or hyphen.  
Examples: AAL906, PTLCN, VRG8764.
- Column C: Field "Type of Aircraft"  
It shall be filled according to the ICAO designator contained in Doc. 8643.  
Examples: for Airbus A320-211 it must be filled A320; for Boeing B747-438 it must be filled B744.
- Column D: Field "Origin Aerodrome"  
It shall be filled according to the ICAO designator contained in the Doc.7910.  
Examples: SBGR, SCEL, SAEZ.
- Column E: Field "Destination Aerodrome"  
It shall be filled according to the ICAO designator contained in the Doc.7910.  
Examples: SBSP, SCEL, SAEZ.
- Column F: Field "Entry fix in the RVSM airspace"  
It shall be filled with at most 5 alphabetical characters, relative to the fix of entrance in corresponding airspace.  
Examples: POKON, KUBEK, BAQ
- Column G: Field "Time at entry fix"  
It shall be filled with numeric characters in the following way: hh:mm.  
Examples: for 01 hour and 09 minutes it must be filled 01:09;  
For 14 hours and 23 minutes it must be filled 14:23.

- Column H: Field "Flight Level at entry fix"  
It shall be filled with 3 numeric characters corresponding to the flight level at the entry fix of the RVSM airspace.  
Example: for FL 290 it must be filled 290.
- Column I: Field "Airway at entry fix"  
It shall be filled with at most 5 alphanumeric characters, without spacing or hyphen. When during the flight the aircraft change of airway, the new airway must be reported after the first one separated by the character / .  
Examples: UA301, UB689, UW20/UW7.
- Column J: Field "Exit fix of the RVSM airspace"  
It shall be filled with at most 5 alphabetical characters relative to the fix of exit of the corresponding airspace.  
RMK: This fix will normally be the last fix crossed by the aircraft leveled or the FIR limit.  
Examples: INTOL, NIKON, CAP
- Column K: Field "Time at exit fix"  
It shall be filled with numeric characters in the following way: hh:mm.  
Examples: for 08 hours and 07 minutes it must be filled 08:07;  
for 00 hours and 23 minutes it must be filled 00:23.
- Column L: Field "Flight Level at exit fix"  
It shall be filled with 3 numeric characters, corresponding to the flight level in the exit fix of the RVSM airspace.  
Example: for FL 350 it must be filled 350.

### 3. Optional fields (Progression of the flight in the airspace)

- Column M: Field "Fix 1"  
It shall be filled with at most 5 alphanumeric characters relative to the fix where there was a change of flight level or airway.  
Examples: POKON, KUBEK, BAQ, UL765.
- Column N: Field "Time at Fix 1"  
It shall be filled with numeric characters in the following way: hh:mm.  
Examples: for 10 hours and 05 minutes it must be filled 10:05;  
for 12 hours and 23 minutes it must be filled 12:23.
- Column O: Field "Flight Level at Fix 1"  
It shall be filled with three numeric characters corresponding to the flight level in the fix 1.  
Example: for FL 410 it must be filled 410.

**Note: In case of more than one change of flight level and/or airway it must be filled so many fields of fix time/flight level as necessary.**

<b>CAR/SAM RVSM Implementation Task List / Lista de Tareas para la Implantación RVSM CAR/SAM</b>					
<b>ID</b>	<b>Description / Descripción</b>	<b>Start/Inicio</b>	<b>Finish/Termina</b>	<b>Resource Names/Nombres Recursos</b>	<b>Status/Estado</b>
<b>1</b>	<b>Identify Operational Need / Identificar la necesidad operacional</b>				
2	Complete operational concept for CAR/SAM RVSM /Acordar el concepto operacional RVSM CAR/SAM	11-Jul-02	<b>Completed</b>	ATC/WG, RVSM Task Force /Grupo de Tarea	
<b>3</b>	<b>Conduct Cost Benefits Analysis / Efectuar el análisis Costo/Beneficio</b>	<b>11-Jul-02</b>	<b>Jun-04</b>		
4	Conduct preliminary cost benefit analysis/ Efectuar el análisis preliminar Costo/Beneficio	11-Jul-02	<b>Completed</b>	SAM WG	
5	Finalize cost benefit analysis / Finalizar análisis costo/beneficio	11-Jul-02	Jun-04	SAM WG	
<b>6</b>	<b>Safety Assessment/Evaluación de la Seguridad</b>	<b>11-Jul-02</b>	<b>Oct-04</b>		
7	Review available summary data (non-compliant aircraft, aberrant aircraft etc) / Revisar el resumen de datos disponible (aeronaves que no cumplen, aeronaves erráticas, etc)	11-Jul-02	Oct-04	SAM/WG, RVSM Task Force / Grupo de Tarea	
8	Examine history of height keeping errors related to ATC clearances and assess possible RVSM impact /Examinar el registro de los errores del mantenimiento de altitud relacionados con autorizaciones ATC y evaluar el impacto posible en la RVSM	11-Jul-02	Oct-04	SAM/WG, RVSM Task Force / Grupo de Tarea	
9	Confirm RVSM risk model assumptions/parameters are consistent with airspace where RVSM is to be applied/Confirmar que los supuestos/parámetros del modelo de riesgo RVSM son consistentes con el espacio aéreo en donde se aplicará la RVSM	11-Jul-02	<b>Completed</b>	SAM/WG, RVSM Task Force / Grupo de Tarea	
10	Conduct simulations to predict level occupancy after RVSM implementation/ Realizar simulaciones para predecir la ocupación de niveles después de la implantación RVSM	11-Jul-02	Mar-04	SAM/WG, RVSM Task Force / Grupo de Tarea	
11	Collect weather and turbulence data for analysis - this should include Andean mountain wave analysis/Recolectar información meteorológica y turbulencia para analizarla – deberá incluirse el análisis de onda de montaña Andina	11-Jul-02	Oct-04	SAM/WG, RVSM Task Force / Grupo de Tarea	
12	Report large height deviations to monitoring agency (including level assignment errors)/Reportar las grandes desviaciones de altitud a la agencia de monitoreo (incluyendo los errores de asignación de nivel)	11-Jul-02	Ongoing	ATS Providers, Users/Proveedores, Usuarios ATS	
<b>13</b>	<b>Feasibility Analysis/Análisis de Factibilidad</b>	<b>11-Jul-02</b>	<b>Completed</b>		
14	Examine the general operational factors associated with implementation/Examinar los factores operacionales asociados con la implantación	11-Jul-02	<b>Completed</b>	ATC/WG, RVSM Task Force /Grupo de Tarea	
<b>15</b>	<b>Determination of Requirements (airborne &amp; ground systems)/Determinación de los Requisitos (sistemas de a bordo y de tierra)</b>	<b>11-Jul-02</b>	<b>Dic-03</b>		
16	Determine need for additional GMUs/Determinar la necesidad de GMUs adicionales	11-Jul-02	Dic-03	SAM/WG, RVSM Task Force / Grupo de Tarea	
17	States assess the impact of RVSM implementation on ATC automation systems (e.g. equipment suffixes) and plan for upgrades/modifications/Evaluación por parte de los Estados del impacto de la implantación RVSM en los sistemas automatizados ATC (ej.: equipamiento adicional) y los planes para mejoras/modificaciones	11-Jul-02	Dic-03	States/Estados	
<b>18</b>	<b>Aircraft &amp; Operator Approval Requirements/Requisitos para la aprobación de aeronave y operadores</b>	<b>11-Jul-02</b>	<b>TBD</b>		
19	Promulgate translation of sections of FAA Interim Guidance 91-RVSM/TGL-6 into Spanish/Emitir la traducción de la Guía Provisional 91-RVSM/1-RVSM/TGL-6 al Español	09-Ago-02	Oct-04	OPS/AIR/WG, ICAO/oaci	
20	Promulgate the operational approval process/Emitir el proceso de aprobación operacional	11-Jul-02	Ongoing	OPS/AIR/WG, RVSM Task Force / Grupo de Tarea	
21	Provide examples of Operations Specifications and Letters of Authority/Proporcionar ejemplos de Especificaciones de Operaciones y Cartas de Autoridad	09-Ago-02	18-Jun-03	OPS/AIR/WG, ICAO/OACI	
22	Notify States when significant changes occur to RVSM documentation/Notificar a los Estados cuando haya cambios significativos en la documentación RVSM	11-Jul-02	Ongoing	OPS/AIR/WG, RVSM Task Force / Grupo de Tarea	
<b>23</b>	<b>Perform Rulemaking (if required) / Elaborar reglamentaciones (en caso de ser requerido)</b>	<b>11-Jul-02</b>	<b>TBD</b>		
24	Recommend State airspace regulatory documentation/Recomendar al Estado la documentación de reglamentación del espacio aéreo	11-Jul-02	TBD	States/Estados	

CAR/SAM RVSM Implementation Task List / Lista de Tareas para la Implantación RVSM CAR/SAM					
ID	Description / Descripción	Start/Inicio	Finish/Termina	Resource Names/Nombres Recursos	Status/Estado
<b>25</b>	<b>Perform Necessary Industry &amp; International Org. Co-ordination/Llevar a cabo coordinaciones necesarias con la industria y Org. Internacionales</b>	<b>11-Jul-02</b>	<b>TBD</b>		
26	Establish target implementation date/Establecer una fecha de implantación	11-Jul-02	<b>Completed</b>	RVSM Task Force / Grupo de Tarea	
27	Report to ATM/CNS/SG/Reportar al ATM/CNS/SG	11-Jul-02	<b>Completed</b>	RVSM Task Force Rapporteur /Relator del Grupo de Tarea	
28	Establish format of CAR/SAM RVSM documentation webpage/Establecer el formato de documentación de la página web RVSM CAR/SAM	09-Ago-02	<b>Completed</b>	OPS/AIR/WG, ICAO/OACI	
29	Develop regional documentation/Desarrollar la documentación regional	11-Jul-02	Oct-03	ATC/WG, RVSM Task Force /Grupo de Tarea	
30	Process Doc 7030 amendment/Procesar la Enmienda al Doc 7030	11-Jul-02	May-04	ICAO Regional Office/Oficina Regional Sudamericana	
31	Publish advance AIC / NOTAM/ Publicar un AIC / NOTAM inicial	11-Jul-02	17-Abr-03	States/Estados	
32	Publish AIP Supplement containing RVSM policy/procedures/Publicar el Suplemento del AIP que contenga las políticas/procedimientos RVSM	11-Jul-02	Sep-04	States/Estados	
33	Review inter-facility coordination procedures/Revisar los procedimientos de coordinación entre las dependencias	11-Jul-02	Oct-04	States/Estados	
34	Finalize airspace changes, if applicable/Finalizar los cambios en el espacio aéreo, cuando sea aplicable	20-May-03	01-Ene-05	States/Estados	
35	Finalize changes to Letters of Agreement/Finalizar los cambios a las Cartas de Acuerdo	01-Ene-04	Oct-04	States/Estados	
<b>36</b>	<b>Approval of Aircraft &amp; Operators / Aprobación de la aeronave y los operadores</b>	<b>11-Jul-02</b>	<b>Oct-04</b>		
37	Establish approved operations readiness targets/Establecer el objetivo de preparación de las operaciones aprobadas RVSM	11-Jul-02	Oct-03	IATA, ATC/WG, RVSM Task Force /Grupo de Tarea	
38	Assess readiness/Evaluar la preparación RVSM	11-Jul-02	Oct-04	IATA, OPS/AIR/WG	
<b>39</b>	<b>Develop Pilot &amp; ATC Procedures /Desarrollar procedimientos para pilotos y ATC</b>	<b>11-Jul-02</b>	<b>TBD</b>		
40	Review application of tactical offset procedures/Revisar la aplicación de los procedimientos de desplazamiento lateral táctico	11-Jul-02	31-Jul-03	ATC/WG, OPS/AIR/WG, RVSM Task Force /G***referred to OPS/AIR_group 1/31/03	
41	Periodically review developments regarding actions for ACAS/TCAS Resolution Advisories that affect RVSM operations/Revisar periódicamente las novedades sobre las acciones para los Avisos de Resolución ACAS/TCAS que afectan a las operaciones RVSM	09-Ago-02	Ongoing	OPS/AIR/WG, ATC/WG	
42	Process Doc 7030 amendment to weather and contingency procedures/Procesar la Enmienda al Doc. 7030 sobre los procedimientos meteorológicos y de contingencia	11-Jul-02	TBD	ICAO Regional Office/Oficina Regional Sudamericana	
43	Publish appropriate ATC policy & procedures on RVSM website/Publicar las políticas y procedimientos ATC en la página WEB RVSM	11-Jul-02	Ongoing	RVSM Task Force / Grupo de Tarea RVSM	
44	Report procedures to accommodate non-RVSM domestic aircraft, if applicable/Informar los procedimientos para acomodar aeronaves domésticas sin aprobación RVSM, cuando sea aplicable	20-May-03	May-04	ATC/WG, RVSM Task Force/Grupo de Tarea RVSM, ATC/WG	
45	Identify transition areas and procedures/Identificar las áreas y los procedimientos de transición	11-Jul-02	<b>Completed</b>	States/Estados, ATC/WG	
46	States conduct ATC simulations to identify workload/operational factors, if necessary, and report results to ICAO regional offices/Que los Estados realicen simulaciones ATC para identificar la carga de trabajo/factores operacionales, si es necesario, e informen los resultados a las Oficinas Regionales de la OACI	11-Jul-02	Oct-03	States/Estados, ATC/WG	
47	Publish report on ATC simulation activity/Reportar las actividades de las simulaciones ATC	11-Jul-02	31-Oct-03	ATC/WG, RVSM Task Force/Grupo de Tarea	
48	Publish procedures for handling non-compliant aircraft (inc ferry & mntce) in ATS documentation/Elaborar los procedimientos para el tratamiento de aeronaves que no cumplen (incluyendo ferry y mantenimiento) en la documentación ATS	11-Jul-02	31-Jul-04	OPS/AIR/WG, ATC/WG, RVSM Task Force / Grupo de Tarea	
49	Publish mutually acceptable ATC procedures for non-approved State/humanitarian a/cft to transit RVSM airspace/Elaborar los procedimientos ATC de aceptación mutua para las aeronaves de Estado no aprobadas para transitar en el espacio aéreo RVSM	11-Jul-02	31-Jul-04	ATC/WG, RVSM Task Force /Grupo de Tarea	
50	Publish procedures for suspension of RVSM/Desarrollar procedimientos para suspensión de la RVSM	11-Jul-02	31-Jul-04	ATC/WG, RVSM Task Force/Grupo de Tarea	
51	Liaise with State defense authorities regarding military operations/Mantener una relación con las autoridades de defensa de los Estados en relación con las operaciones militares	11-Jul-02	31-Jul-03	States/Estados	

CAR/SAM RVSM Implementation Task List / Lista de Tareas para la Implantación RVSM CAR/SAM					
ID	Description / Descripción	Start/Inicio	Finish/Termina	Resource Names/Nombres Recursos	Status/Estado
<b>52</b>	<b>Pilot &amp; ATC Training/Entrenamiento de Pilotos y ATC</b>	<b>11-Jul-02</b>	<b>TBD</b>		
53	Provide ATC training documentation to States/Proporcionar la documentación de capacitación ATC a los Estados.	20-Jul-04	20-Ene-05	ATC/WG, ICAO/OACI	
54	Conduct local RVSM training for air traffic controllers/Capacitar localmente en RVSM a los controladores de tránsito aéreo	20-Jul-04	20-Ene-05	States/Estados, ATC/WG	
<b>55</b>	<b>Perform System Verification/Llevar a cabo una verificación del sistema</b>	<b>11-Jul-02</b>	<b>Sep-04</b>		
56	Height keeping performance monitoring needed to undertake initial safety analysis/Monitoreo de la performance del mantenimiento de la altitud necesario para llevar a cabo el análisis inicial de la seguridad.	11-Jul-02	Dic-03	Monitoring Agency and SAM/WG, RVSM Task Force/Agencia de Monitoreo y SAM/WG, Grupo de Tarea RVSM	
57	Provide representative traffic movement data to monitoring agency (30 day sample, repeated annually)/Proporcionar los datos de movimiento de tránsito representativo a la Agencia de Monitoreo (muestra de 30 días, repetida anualmente)		Ongoing	States/Estados	
58	Publish initial CAR/SAM minimum monitoring requirements/Publicar los requisitos mínimos de monitoreo inicial CAR/SAM	09-Ago-02	<b>Completed</b>	SAM/WG, OPS/AIR/WG	
59	Undertake initial safety analysis/Llevar a cabo un análisis inicial de seguridad	11-Jul-02	Dic-03	SAM/WG, RVSM Task Force / Grupo de Tarea	
60	Prepare/maintain regional status report detailing RVSM implementation plans/Preparar/mantener un reporte regional de status detallando los planes de implantación RVSM	11-Jul-02	Ongoing	RVSM Task Force Rapporteur /Relator del Grupo de Tarea	
<b>61</b>	<b>Final Implementation Decision /Decisión para la implantación final</b>	<b>11-Jul-02</b>	<b>Oct-04</b>	<b>RVSM Task Force/Grupo de Tarea RVSM</b>	
62	Report status of implementation to GREPECAS/12/Reportar el estado de implantación al GREPECAS/12		TBD	RVSM Task Force Rapporteur/Relator del Grupo de Tarea RVSM	
63	Review aircraft height-keeping performance and operational errors/Revisar el estado de la performance del mantenimiento de la altitud de las aeronaves y errores operacionales	11-Jul-02	Oct-04	SAM/WG, OPS/AIR/WG	
64	ATS State documentation complete/Documentación ATS del Estado terminada	11-Jul-02	Oct-04	States/Estados	
65	Publish trigger NOTAM/Publicación del NOTAM de "lanzamiento"	20-Nov-03	13-Ene-05	States/Estados	
66	Complete operational readiness assessment/Completar la evaluación de la preparación operacional		06-Dic-04	Monitoring Agency/Agencia de Monitoreo	
67	Complete safety analysis/Completar el análisis de seguridad		06-Dic-04	RVSM Task Force/Grupo de Tarea RVSM	
<b>68</b>	<b>Declare Initial Operational Capability/Declarar la capacidad operacional inicial</b>		<b>20-Ene-05</b>	<b>Monitoring Agency and SAM/WG, RVSM Task Force/Agencia de Monitoreo y SAM/WG, Grupo de Tarea RVSM</b>	
<b>69</b>	<b>Monitor System Performance/Monitorear la performance del sistema</b>		<b>Ene-06</b>		
70	Perform follow-on monitoring/Llevar a cabo el monitoreo de seguimiento	TBD	Ongoing	OPS/AIR/WG, SAM/WG	
<b>71</b>	<b>Declare Full Operational Capability/Declarar la capacidad operacional total</b>		<b>Ene-06</b>	<b>RVSM Task Force / Grupo de Tarea RVSM</b>	
72	Seminar/Seminario 1	05-Ago-02	07-Ago-02	RVSM Task Force / Grupo de Tarea RVSM	
73	Task Force/Grupo de Tarea 3	08-Ago-02	09-Ago-02	RVSM Task Force / Grupo de Tarea RVSM	
74	Task Force/Grupo de Tarea 4	27-Ene-03	31-Ene-03	RVSM Task Force / Grupo de Tarea RVSM	
75	Seminar/Seminario 2	16-Jun-03	17-Jun-03	RVSM Task Force / Grupo de Tarea RVSM	
76	Task Force/Grupo de Tarea 5	18-Jun-03	21-Jun-03	RVSM Task Force / Grupo de Tarea RVSM	
77	Task Force/Grupo de Tarea 6		Oct-03	RVSM Task Force / Grupo de Tarea RVSM	
78	Task Force/Grupo de Tarea 7		May-04	RVSM Task Force / Grupo de Tarea RVSM	
79	Task Force/Grupo de Tarea 8		Oct-04	RVSM Task Force / Grupo de Tarea RVSM	
80	Task Force - 90 day follow-up/Grupo de Tarea - Seguimiento después de 90 días	TBD	TBD	RVSM Task Force / Grupo de Tarea RVSM	
81	Task Force - 1 year follow-up/Grupo de Tarea - Seguimiento después de 1 año	TBD	TBD	RVSM Task Force / Grupo de Tarea RVSM	