



AP/ATM/4
WP/09
08/01/03

**International Civil Aviation Organization
UNDP/ICAO Regional Project RLA/98/003
Transition to the CNS/ATM Systems in the CAR and SAM Regions**

**Fourth Meeting/Workshop of Air Traffic Management (ATM) Authorities and Planners
(AP/ATM/4)**

Santa Cruz, Bolivia, 27-31 January 2003

Agenda Item 3: Review of the matters related to RVSM Implementation in the CAR/SAM Regions

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

(Presented by Brazil)

Summary

This working paper provides information about the Regional Monitoring Agency (CARSAMMA) and its activities to support the RVSM implementation in CAR/SAM Regions.

1 Introduction

1.1 Monitoring Agency for CAR/SAM Regions (CARSAMMA) was established to assume the duties and responsibilities of the Regional Monitoring Agency for the CAR/SAM Regions. The principal role of CARSAMMA is to assist the International Civil Aviation Organization (ICAO) in the process of safety assessment for the implementation of Reduced Vertical Separation Minimum (RVSM) and other monitoring requirements as determined by the CAR/SAM Planning and Implementation Regional Group (GREPECAS).

2 Background

2.1 In order to support the preparation for the RVSM implementation in the CAR/SAM Regions, GREPECAS 10 Conclusion 10/12 assigned to Brazil the tasks and responsibilities of the Regional Monitoring Agency for the CAR/SAM Regions (CARSAMMA). The CARSAMMA is located at the Brazilian Air Navigation Management Center (CGNA). GREPECAS 11 confirmed the establishment of the Monitoring Agency as agreed in GREPECAS 10.

2.2 Following that, CARSAMMA started to collect data to perform the risk analysis and safety monitoring in CAR/SAM airspace. The agency must know data from all States involved to correct evaluate risks and review the steps for the RVSM implementation if necessary.

3 Transition Plan

3.1 Memorandum of Agreement

3.1.1 Annex 2 to MOA NAT-I-0019, subject: Establishment of CAR/SAM Monitoring Agency, between the Federal Aviation Administration (FAA) and the Brazilian Airspace Control Department (DECEA) was signed. This Annex set forth the terms and conditions for the transfer of know-how from the Asia/Pacific Approvals Registry and Monitoring Organization (APARMO) located at the United States Federal Aviation Administration's William J. Hughes Technical Center, to Brazilian specialists in charge of the CAR/SAM Regional Monitoring Agency.

3.2 Training

3.2.1 After the RVSM TF-3 meeting and the MOA between FAA and DECEA was completed, the training was conducted by FAA for a group of CARSAMMA specialists with mathematical and ATC backgrounds. The training program addresses five primary functions of CARSAMMA, which are to:

- Establish and maintain a database of State RVSM approvals;
- Monitor aircraft height-keeping performance and the occurrence of large height deviations against established requirements and report results appropriately;
- Conduct safety assessments and report results appropriately;
- Inspect operator compliance with State approval requirements after RVSM implementation;
- Initiate remedial actions if RVSM requirements are not met.

3.2.2 The training program consists of four phases, including:

- **Phase 1** – Provide initial guidance on the five primary functions of CARSAMMA;
- **Phase 2** – Conduct side-by-side apprenticeships to review and test the application of the specialized tasks for the safe conduct of CARSAMMA duties and responsibilities;
- **Phase 3** – Provide advanced guidance, and address issues as a result of the side-by-side apprenticeships; and
- **Phase 4** – FAA specialists perform a one week temporary duty assignment at CARSAMMA to finalize the transfer of know-how.

3.2.3 Each phase of this training program is scheduled as follows:

| Work items | To be completed by |
|------------|--------------------|
| Phase 1 | Already conducted |
| Phase 2 | TBD |
| Phase 3 | TBD |
| Phase 4 | TBD |

3.3 CARSAMMA Infrastructure

3.3.1 While the training is on-going, CARSAMMA has been preparing the infrastructure to support the duties and responsibilities of the monitoring agency for the RVSM implementation. The CARSAMMA infrastructure are listed and expected to be in place as follows:

| Work items | To be completed by |
|--|--------------------|
| Website and communication (e.g., phone, fax and email) | Done |
| Computer network system | Done |
| Computer aided tool <ul style="list-style-type: none"> ➤ Database for approvals ➤ ASE quality control ➤ Safety assessment tools | April 2003 |

3.4 Capability

3.4.1 Once the CARSAMMA infrastructure is established and the transfer of know-how is completed, CARSAMMA will be able to perform the duties and responsibilities set for the monitoring agency and agreed at GREPECAS and RVSM TF meetings for the airspace defined in the CAR/SAM Regions.

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- Text in English: www.cgna.gov.br/carsam/english/index.htm

4 Conclusion

4.1 Considering the big amount of data that CARSAMMA needs to collect and analyze to help the RVSM TF in the RVSM implementation process, as well as the complexity of the calculations to be done, CARSAMMA has already started the process of training and development of the infrastructure needed to support his tasks.

5 Recommended actions

- The group is invited to evaluate the information contained in this paper;
- The States are encouraged to proceed in the data collection as requested by the LT 11/30.2-SA0898 of 25 September 2002 and send them to CARSAMMA, to start the process of knowledge of our airspace and to define some parameters to be used in the safety assessment;
- The States start the data collection of the large height deviation (more than 300ft) in support of the risk analysis and send to CARSAMMA;
- The States start the data collection of the aircrafts already RVSM approved and send to CARSAMMA to establish the database of approved aircrafts and to perform the readiness assessment.