International Civil Aviation Organization
Western and Central African Office

Twelfth Meeting of the Air Traffic Management/Aeronautical Information Management/Search and Rescue Sub-Group (ATM/AIM/SAR SG/12)
(Dakar, Senegal, 25 - 29 July 2011)

Agenda Item 5: RVSM operations and monitoring

ARMA REPORT

(Presented by ARMA)

SUMMARY

The Working Paper Presents the ARMA Report Containing an Overview of the Responsibilities Associated with the Five Key Performance Areas.

1. INTRODUCTION

1.1 This working paper is intended to present the meeting with an overview of the ARMA work associated with the five Key Performance Areas and thus the state of RVSM in the AFI region.

1.2 A power point presentation will be presented to the meeting in order to ensure that the most important information is adequately covered.

1.3 The meeting should recall the Commitment that States have made towards ensuring that RVSM is safely managed for the benefit of the Aviation Community as a whole.

2. DISCUSSION

2.1 The ARMA is guided specifically by the AFI RMA Manual and ICAO Doc 9574 which contains the following five primary functions that are expected to be carried out by the ARMA:

- Maintain a data base of AFI RVSM approvals
- Monitor aircraft height-keeping performance and the occurrence of large height deviations and report results appropriately

- Conduct Safety Assessments and report results appropriately
- Monitor operator compliance with State approval requirements
- Initiate necessary remedial actions if RVSM requirements are not met

Primary Functions (x5)

2.2 Maintain a Data Base of RVSM Approvals (1)

2.2.1 ARMA maintains an RVSM Operational Approvals Data Base with all AFI State RVSM Operational Approvals to facilitate the safe and efficient flight of RVSM Operationally Approved aircraft. The ARMA webpage containing the AFI RVSM Approvals can be viewed by using the following address: **www.atns.co.za/afi-rvsm** The States listed in Table 1 below have been included in the dataset as the data was of the minimum standard required by ICAO for distribution. It is recommended that all States/CAA's, Aircraft Operators and ANSP consult the table on a regular basis to ensure that the data is correct. All amendments should be forwarded to ARMA without hesitation.

Algeria (Limited)	**Eritrea (Unsure)**	**Mauritius (All)**	**Seychelles (All)**
Angola (Limited)	**Ethiopia (Limited)**	**Mozambique (All)**	**Senegal (Unsure)**
Botswana (All)	**Gabon (All)**	**Namibia (All)**	**Sudan (Unsure)**
Burkina Faso(Limited)	**Ghana (All)**	**Niger (All)**	**Swaziland (All)**
Cameroon (Unsure)	**Kenya (All)**	**Nigeria (Processing)**	**Uganda (All)**
Chad (All)	**Libya (Unsure)**	**Reunion (Limited)**	**Zambia (All)**
Côte d,ivoire (All)	**Madagascar (All)**	**RSA (All)**	**Zimbabwe (All)**
DRC (Limited)	**Malawi (All)**	**Rwanda (All)**	
Djibouti (Unsure)	**Mali (All)**	**Sao Tome (Unsure)**	

Table 1

2.2.2 A total of 667 AFI RVSM Operational Approvals were recorded in the latest dataset at the end of June 2011. This is an increase of approximately 120 aircraft measured from the same time last year 2010. These figures exclude the RVSM fleets from Morocco, Tunisia and Egypt that have sizeable fleets. The management of State RVSM Operations Approvals by CAA's is an area that requires attention as not all States are complying with the requirements resulting in a deficiency.

2.3 Monitor Aircraft Height-Keeping Performance and the Occurrence of Large Height Deviations (2)

2.3.1 Monitoring Height Keeping Performance

2.3.2 The ARMA Height Monitoring Program is now well established and AFI CAA's must ensure that they cooperate with ARMA to maintain the height monitoring targets for each operator's fleet. Solutions to encourage CAA's and aircraft operators to comply with this requirement will need to be sought.

2.3.3 Resulting from the AFI Height Monitoring Program measurements obtained, (ASE), have for the first time supplemented other ASE figures in the processing of the current AFI CRA. The GMU method is returning good results with a total of 235 aircraft having been monitored. HMU and AGHME results have been effectively used to supplement the program and count towards the monitoring targets for AFI.

2.3.4 To date the program continues to record results mostly south of the equator which is rather disturbing as there are many operators to the North of the Equator that desperately need Height Monitoring.

2.3.5 All State RVSM operationally approved aircraft/operators are continuously controlled for height monitoring compliance in reaching their height monitoring targets. ARMA is aware that there is apathy regarding this standard contained in Annex 6 which will need to be improved on CAA's and operators are requested to co-operate so as to avoid any inconvenience to operations that may arise. CAA's have in certain circumstances withdrawn aircraft RVSM approvals where no attempt has been made to undergo the required height monitoring flights. This has been the last resort after numerous requests to comply. Deficiencies in height Monitoring has big safety implications for the operator and the ANSP. Numerous protocols have been opened where aircraft have demonstrated a unacceptably high ASE. Most have been resolved or are in the process.

2.3.6 Operational Errors Leading to Large Height Deviations

2.3.7 Operational Errors leading to Large Height Deviations are still under evaluation in the CRA process which is currently in progress however during the previous assessment it was established that there were 51 reported LHD's. A figure of 86 is currently under evaluation for the current assessment.

2.4 Conduct Safety Assessments (3)

2.4.1 Safety Assessments are continuously in progress to satisfy the Safety Policy. The data for the 2011 safety assessment is currently being collected. In order to make these assessments

successful States/ACC's must prepare and submit the required data to ARMA. This data as previously discussed is used by ARMA for two purposes and should also be retained by States for their own records. The collection and submission of safety assessment data for RVSM must enjoy a high priority as the failure to submit data will inevitably lead to the monitoring of RVSM operations failing. States are urged to investigate all means of obtaining this data. To date the safety returns are a poor 35%.

2.4.2 The results of the current safety assessment will be presented to APIRG 18 and fully discussed in detail during SG13.

2.5 Monitor Operator Compliance with State Approval Requirements (4)

2.5.1 This function is continuously in progress as ARMA uses the monthly safety assessment returns to verify that aircraft captured in the RVSM band are actually State RVSM approved aircraft and operators lodged with the ARMA. Numerous queries continue to be received from neighbouring RMA's to address the presence of certain aircraft in published RVSM airspace of which the reporting RMA had no records. The operation of State aircraft remains a problem and is addressed in a separate working paper. Since our last meeting we have recorded approximately 79 aircraft that have been found lacking in the RVSM approvals aspect as opposed to the last period which recorded 70. ARMA considers this as very conservative as we are aware of daily schedules by unapproved operators. Once again this is as a result of the deficiency mentioned in RVSM State approvals.

2.6 Initiate Remedial Actions if RVSM Requirements are not Met (5)

2.6.1 Remedial actions have been negotiated with various CAA's to find solutions for large height deviations. This is also true for aircraft demonstrating large ASE measurements. The ARMA considers this item as a continuous task and will be reported on as required.

2.7 Monthly FIR Traffic and Associated Returns to ARMA

2.7.1 The annual return for 2010 was a dismal 35% which is once again hampering the compiling of the various safety assessments. Safety assessment data cannot be over emphasized. If the region is unaware of the weak RVSM areas it is impossible to provide solutions. As the return of safety data is critical it will be addressed in a separate working paper suggesting a list of deficient States which will assist the tracking and finding of solutions. At this point it should be mentioned that both Botswana and the ASECNA FIR's have put in a great effort to provide safety data and it is believed that this is having a big effect relating to safety monitoring and for the 2011 safety assessment.

3. AFI RVSM NPM's

3.1 The contact point for RVSM matters in each State is critical to the success of addressing all RVSM matters relating to that State however there are many deficient States. This

requirement will be addressed in the working paper proposing that deficient States be listed in this respect until such stage as they comply.

4. ACTION BY THE MEETING

4.1 The meeting is requested to:

a) Take note of the contents of the working paper

b) Support the ARMA in attaining the five Key Performance Areas

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END