INTERNATIONAL CIVIL AVIATION ORGANIZATION

AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP
FIFTEENTH MEETING (APIRG/15)

(Nairobi, Kenya, 26 – 30 September 2005)

Agenda Item 4: Air Navigation and Aviation Security (AVSEC) issues
4.4 RVSM Implementation in the AFI Region

AFI RVSM Safety and Consolidated Readiness Assessment

(Presented by the Secretariat)

Summary

AFI RVSM Safety and Consolidated Readiness Assessment Working Paper Compiled to Assist APIRG/15 with RVSM Policy Decisions.

1. INTRODUCTION

1.1 The ARMA is required, as stated in the ICAO AFI RMA Manual, to conduct Safety and Readiness Assessments and report the results appropriately to the body over seeing the implementation of RVSM. This working paper has been compiled to present APIRG/15 the results achieved from the Safety and Readiness Assessments measured against the AFI RVSM Safety Policy. Progress achieved towards implementation of RVSM in the AFI Region will become apparent and should assist with the RVSM planning and implementation process**.**

2. DISCUSSION

2.1 The ARMA is guided by the AFI RMA Manual that contains the following primary functions that are expected to be carried out by the ARMA:

- Establish and maintain a data base of RVSM approvals
- Monitor aircraft height-keeping performance and the occurrence of large height deviations and report results appropriately
- **Conduct Safety and Readiness Assessments and report results appropriately**
- Monitor operator compliance with State approval requirements
- Initiate necessary remedial actions if RVSM requirements are not met

2.2 The ARMA has in accordance with the third function conducted Safety and Readiness Assessments and the consolidated results are presented to APIRG/15.

Safety Assessment

2.3 Ideally the ARMA should have the internal competence to conduct a Safety Assessment however, the services of the Nationaal Lucht – en Ruimtevaartlaboratorium National Aerospace Laboratory (NLR), based in Amsterdam the Netherlands, have been utilized to compile the Collision Risk Assessment. NLR will in the next presentation provide insight into the results of the assessment measured against the AFI RVSM Safety Policy which requires that the Technical TLS, 2.5×10^{-9} and the Total TLS $5 \times 10^{-9,}$ fatal accidents per flight hour shall not be exceeded. It will become evident from the NLR presentation that stringent measures will have to be applied to ensure that all incidents are reported within the AFI Region with appropriate remedial action. Special attention to vertical displacement incidents is required. Further to this the continued timely and accurate submission of all ARMA traffic data forms by all FIR's remains essential to the success of RVSM implementation in AFI.

Consolidated Readiness Assessment

2.4 The aim of a Readiness Assessment is to examine the approval status of operators and aircraft using the airspace where RVSM is planned in order to evaluate whether a sufficiently high proportion of operations will be conducted by approved operators and aircraft when RVSM is introduced and appropriately report the results.

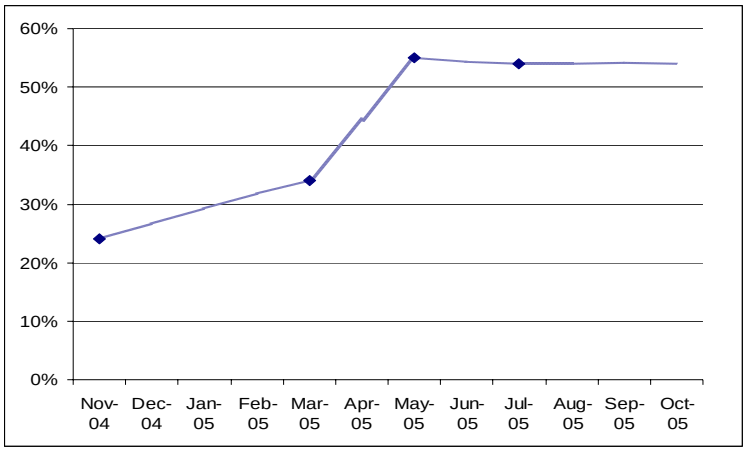
2.5 The ARMA is therefore required to utilize two sources of information to compile a Readiness Assessment i.e. a sample of traffic movements from the relevant airspace and a database of State RVSM approvals.

2.6 A consolidated AFI RVSM Readiness Assessment for APIRG/15 has been compiled with reference to information from the First, Second and Third Readiness Assessment results as conducted by the ARMA.

2.7 State RVSM Aircraft Databases applicable to operations between FL290 and FL410 inclusive are essential to the process and directly influences the result of a Readiness Assessment. A great deal of work has been accomplished in this regard with positive results. States have been continuously urged to continue with a periodic review process. The results of this work will be illustrated in Graph 1. It however remains a concern that there is a large percentage of AFI registered aircraft that are not RVSM compliant and approved either due to the age of the fleet or that there is currently no necessity.

2.8 The State RVSM Aircraft Databases, in most cases, have been extensively reviewed and amended, reflecting figures of growing integrity. The First Readiness Assessment was based on data from unconfirmed registers that produced a 24% RVSM approved result. During a further in-house assessment, after extensive work on the databases, this rose to 34%. The Second Assessment, with much improved data, produced a figure of 55%, followed by the Third and current Assessment with a figure of 54%. It is envisaged that the percentage will remain static at or about 55% until the AFI fleet commences with up grading to obtain the benefits offered from RVSM operations.

Graph 1 illustrates the AFI aircraft approval trend to date:

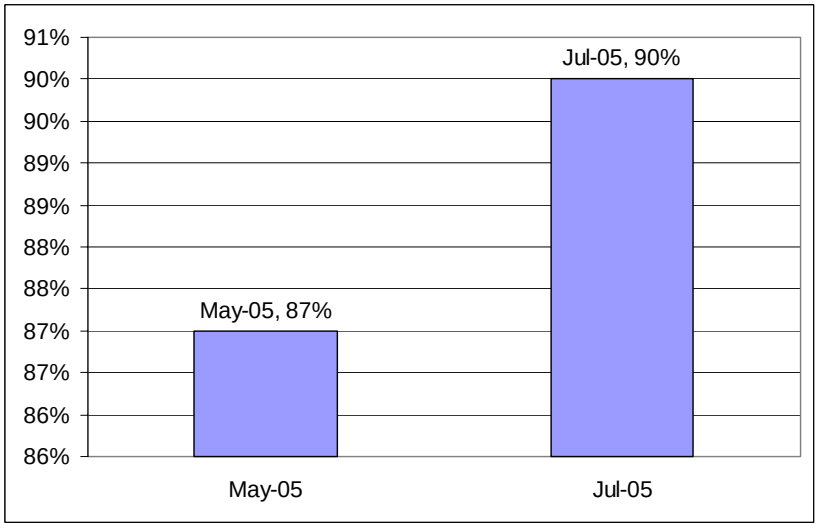


Graph 1

2.9 The ARMA assembled two samples of traffic from within the proposed RVSM band over common time periods, in each case for strategically selected FIRs, to determine the number of RVSM approved operators and aircraft that actually operate within the proposed RVSM band. The traffic data from the first six FIRs produced an 87% approved aircraft percentage followed by a figure of 90% calculated from the second sample obtained from eight different FIRs.

2.10 The results have been measured against the AFI RVSM Safety Policy that the AFI Region attains a 90% target of RVSM approved aircraft within the Region. This should ideally be reached before RVSM Implementation. The ARMA is satisfied that a sufficiently high proportion of operations will be conducted by approved aircraft taking the results into consideration. The percentage obtained should further improve when RVSM is implemented.

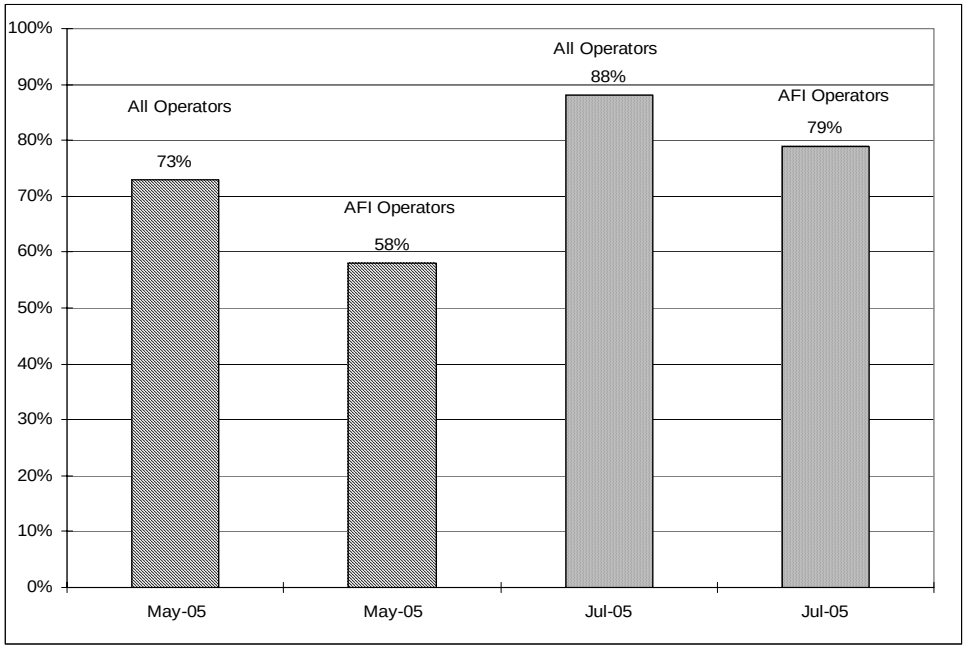
2.11 Graph 2 illustrates the RVSM approved aircraft in the proposed RVSM band to date:



Graph 2

2.12 A verification audit of approved operators recorded in the two samples, in the First Assessment revealed that 73% of all airline operators were approved and in the Second Assessment 88% of all operators. A further breakdown into AFI airline operators firstly produced a result of 58% and then 79% of AFI airline operators. The poor initial results could be attributed to the integrity of the data that has subsequently improved.

2.13 Graph 3 illustrates the trend to date:



Graph 3

3. CONCLUSION

3.1 In conclusion the ARMA has assessed that:

- stringent incident reporting measures together with appropriate remedial actions will have to be applied in order to eventually comply with the Total TLS.

- the continued timely and accurate submission of all ARMA traffic data forms by all FIRs remains essential to the success of RVSM implementation in AFI.

- there is a large percentage of the capable AFI RVSM fleet that does not meet with RVSM requirements.

- a sufficiently high proportion of operations, within the proposed RVSM band, will be conducted by approved operators and aircraft when RVSM is introduced.

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4. ACTIONS BY THE MEETING

4.1 APIRG/15 is requested to:

- Consider the results of the Collision Risk Assessment and the Readiness Assessment and utilize the information in support of an amended AFI RVSM implementation date.

- Support stringent incident reporting measures together with appropriate remedial actions, with special reference to vertical displacement incidents, in order to eventually comply with the Total TLS.

- Support the continued collection of ARMA traffic data by all FIRs with the timely and accurate submission thereof to the ARMA.

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