<u>International Civil Aviation Organization</u>
<u>Eastern and Southern African Office</u>

**Eleventh Meeting of the APIRG Air Traffic Services, Aeronautical Information Services
and Search and Rescue Sub-Group
(ATS/AIS/SAR/SG/11)
[Nairobi, Kenya 26 – 30 April 2010]**

Agenda Item 5:   **RVSM operations and Monitoring Activities**

AFI RVSM POST OPERATIONAL SAFETY CASE

(Presented by ARMA)

SUMMARY
This Working Paper Briefly Discusses and Provides Insight into the AFI RVSM POSC

1. INTRODUCTION

1.1   The POSC will briefly be summarized and discussed focusing on the salient points as the document and contents are too large to present in detail. The POSC is a major deliverable required by the AFI RVSM Safety Policy and follows on from the PISC. The POSC is designed to illustrate by means of argument and supporting evidence that the continued application of RVSM in AFI satisfies the key AFI RVSM Safety Objectives as set out in the AFI RVSM Safety Policy.

2. DISCUSSION

2.1   The strategy to demonstrate the achievement of the Safety Policy has been supported by three principle safety arguments:

- That RVSM in AFI is safe in principle after operational experience is measured against the safety requirements in the PISC
- That the AFI RVSM application is safe by applying and realizing the safety requirements based on the availability of safety data over time period 25 September 2008 to 30 September 2009.
- That the issues that were identified in the PISC, and the assumptions made therein, have been satisfactorily addressed.

2.2   The above mentioned arguments were fully processed throughout the document which leads to the three conclusions summarized as follows:

- It was concluded that AFI RVSM continues to be safe in "principle".
- It was not concluded that the AFI RVSM concept is safe as some safety requirements were shown to have not been achieved. The Total Vertical Risk was exceeded by a factor of 6 over the set TLS. The ARMA requirements for monitoring have not been fully realized in the fields of RVSM Aircraft Approvals, traffic flow data, incident reporting and Height Monitoring.
- It has not been concluded that the outstanding issues in the PISC have been satisfactorily addressed as flight at incorrect flight levels continues to arise. The matter concerning the migration to class A airspace has not been fully achieved.

2.3   As an overall conclusion it was concluded that AFI RVSM operations are not safe. This conclusion was based on all events and safety data submitted over time period 25 September 2008 to 30 September 2009.

2.4   At this point it will be necessary to look at the four main persistent hazards that were identified during the FHA preparations for the POSC.

H1 Non RVSM aircraft is given 1000FT separation in RVSM airspace.
Undetected by ATS or detected on first contact
H2 Non RVSM aircraft operates in RVSM airspace
Detected by ATS
H3 Aircraft is assigned a potentially conflicting Flight Level
H4 Aircraft deviates from cleared flight level
Unknown or known by flight crew and undetected by ATS

2.5   As a result of the above mentioned the following recommendations have been compiled in order to assist AFI in creating a safe RVSM operating environment:

System Monitoring
1.   RVSM State Approvals must be improved
2.   Comply with AFI Minimum Monitoring requirements
3.   Operational Error Reporting must be improved
4.   Operational Error Reporting and assessment should be consistent
5.   Reporting processes should be improved to provide the required information for processing
6.   Traffic flow data submission must be improved
7.   Proportion of aircraft using GNSS based navigation should be monitored

Safety Requirements
8.   Updating all documentation with current RVSM status
9.   RVSM documentation relating to the PISC should be verified

System Improvements
10.   SLOP should be implemented in accordance with ICAO provisions.
11.   SLOP to be harmonized with other regions
12.   Surveillance should be reinforced where appropriate
13.   CPDLC should be reinforced where appropriate
14.   Unidirectional and/or parallel routes should be implemented where appropriate.

System Operations
15.   Class A airspace should be implemented where RVSM is applied
16.   The management of non RVSM civil aircraft in RVSM airspace should be reviewed
17.   Operator and aircraft RVSM approvals should be reinforced.

System Safety Performance
18.   Improvement of ATS performance
19.   Improve A/G communications
20.   Improve coordination between ATSU's
21.   Flight crew discipline should be reinforced
22.   Wrong Flight Level allocation by ATS should receive urgent attention.
23.   Aircraft deviating from cleared flight level should receive urgent attention

2.6   The above mentioned safety recommendations should form the basis for the remedial actions to contribute towards improving the Total Vertical Risk in AFI

3.   ACTION BY THE MEETING

3.1   The meeting is requested to:

- Take general note of the content of the WP for application within RVSM operations where applicable

- Support the drafting of an ICAO State Letter containing the safety recommendations for application by all States in AFI.