IMPLEMENTATION OF REDUCED VERTICAL SEPARATION MINIMUM (RVSM) IN THE AIRSPACES OF AFRICA and THE OCEANIC AIRSPACES (AFI REGION)

RVSM Background and Implementation

Over the last 3 decades the aviation industry in Africa, in following the global tendency has experienced growth in air traffic. The industry infrastructure has rapidly developed with an extremely diverse range and an increasing number of aircraft capable of RVSM operations are being introduced and taking to the skies over Africa. The increase in air traffic has expectedly led to increased congestion in some areas and a demand from the aviation community for increased capacity and improved efficiencies. Inevitably more usable airspace is needed to accommodate these requirements. One of the efficiencies which will support both economics of operation and allow operators to achieve as close as possible optimum trajectories, is RVSM (Reduced Vertical Separation Minimum). By reducing the minimum vertical separation from 2000FT to 1000FT between enroute aircraft operating between FL290 and FL410 inclusive. Africa, being one of the last Regions on the globe to do so, will be implementing RVSM on 25 September 2008 at 0001Hours UTC (GMT) in response to the requirement for better efficiency within the AFI Region airspaces. The African and Indian Ocean Region (AFI) being defined as the Continental and surrounding islands States.

The AFI RVSM Implementation program is undoubtedly the largest Communications, Navigation, and Surveillance / Air Traffic Management (CNS/ATM) implementation project undertaken by the AFI Region. The initiative will not only realise the implementation of RVSM as planned, but it will also, by improving, the ATM infrastructure contribute to improving overall safety in the AFI region. Simultaneously with the process, AFI States and Aviation partners are being drawn closer together in the field of ATM cooperation.

The RVSM Implementation process is based on a sound methodology which culminated in the AFI RVSM Pre-Implementation Safety Case (PISC) presented to the ICAO Air Navigation Commission (ANC) for approval. The ANC approved the PISC on 19 June 2008 and directed the ICAO Secretariat to fine tune all the requirements by the States so as to ensure SAFE implementation of RVSM on 25 September 2008. The planning and preparation for implementation of RVSM is in accordance with ICAO provisions and Global Best Practices.

Regional Monitoring Agency Activities

At the request of the International Civil Aviation Organization (ICAO), South Africa accepted the responsibility to host the RVSM African Regional Monitoring Agency for the AFI Region. The Agency is known as the AFI Regional Monitoring Agency (ARMA) and will act on behalf of ICAO in carrying out the Regional Monitoring Agency responsibilities for the AFI Region.

The ARMA is located at the Johannesburg Air Traffic Control Center within the Central Airspace Management Unit (CAMU) providing RVSM monitoring and associated services for ICAO to the entire AFI Region as well as interacting with other Regional Monitoring Agencies, such as Eurocontrol. Access to each AFI State is via a nominated RVSM National Program Manager within each State...
The ARMA has five key performance areas which are summarized as follows:

- Maintain a database of AFI aircraft and operator approvals for RVSM operations
- Conduct safety and readiness assessments and report results appropriately
- Monitor aircraft height-keeping performance and the occurrence of large height deviations and report results appropriately
- Monitor operator compliance with State approval requirements
- Initiate necessary remedial actions if RVSM requirements are not met.

**Height Keeping and RVSM Approval**

The ARMA has concluded a contract with ARINC to provide a Height Monitoring Service for the AFI Region by means of the GPS Monitoring Unit (GMU) method which is consistent with the AFI RVSM Safety Policy.

All aircraft entering RVSM Airspace must be State RVSM operationally approved. In order to obtain State RVSM Operational approval based on the European Joint Aviation Authority, Temporarily Guidance Leaflet No. 6 rev.1 (JAA TGL6, rev.1) There are two steps to the approval process:

- RVSM Airworthiness Approval indicating that an aircraft has been successfully modified and/or inspected in compliance with the applicable criteria.
- RVSM Operational Approval indicates firstly that the aircraft holds the relevant State RVSM Airworthiness Approval and secondly that the ongoing operating procedures and continued airworthiness procedures (e.g. maintenance and repair) are fully acceptable to the appropriate Civil Aviation Authority.

Thereafter the aircraft is expected to take part in the AFI RVSM Height Monitoring program on a regular basis. Height Monitoring results from other Regions contribute to the AFI Height Monitoring program. Such exchange of data is supported by ICAO.

Additional information regarding RVSM Implementation in the AFI Region can be obtained from the Civil Aviation Authorities. The following websites contain information on the AFI RVSM Program:

**ARMA**

www.atns.co.za  
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Tel. no. +27 11 928 6506  
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**ARPO**

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**ASECNA**

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Fax +221 33820 7546  
Email rvsm.switchover@asecna.org
### Cruising levels as per direction of flight – FL280 to FL430

<table>
<thead>
<tr>
<th>Route from 180 degrees to 359 degrees*</th>
<th>Route from 000 degrees to 179 degrees *</th>
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<tbody>
<tr>
<td>FL 430 (non RVSM level above RVSM airspace)</td>
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<td>FL280 (non RVSM level below RVSM airspace)</td>
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*Route from 000 degrees to 179 degrees:

- From FL430 to FL410
- From FL400 to FL390
- From FL380 to FL370
- From FL360 to FL350
- From FL340 to FL330
- From FL320 to FL310
- From FL300 to FL290

*Route from 180 degrees to 359 degrees:

- From FL280 to FL430