

**FOURTH MEETING OF THE ALLPIRG/ADVISORY GROUP****(Montreal, 6 – 8 February 2001)**

**Agenda Item 2.1: Interregional coordination and harmonization mechanism – Harmonization of air navigation systems**

**ISSUES RELATED TO AIRSPACE MONITORING AND AIRCRAFT APPROVALS  
FOR THE IMPLEMENTATION OF REDUCED VERTICAL SEPARATION MINIMUM (RVSM)**

(Presented by the Secretariat)

**SUMMARY**

This paper provides an overview of issues that have been identified when planning for the implementation of RVSM in different ICAO Regions. These issues relate to airspace monitoring and aircraft approvals. Although the paper does not suggest any specific action, it does give an indication of some of the issues that can stem from the regional implementation of a global concept.

**1. INTRODUCTION**

1.1 Reduced vertical separation minimum (RVSM) was implemented in the North Atlantic (NAT) Region in March 1997. The implementation plan was endorsed by the Limited NAT Regional Air Navigation (RAN) Meeting that was held in Cascais, Portugal, in 1992. The implementation plan was based on the guidance material contained in the First edition of the ICAO *Manual on Implementation of a 300 m (1,000 ft) Vertical Separation Minimum Between FL 290 and FL 410* (Doc 9574). Therefore, in accordance with the guidance material, the implementation plan did not identify any requirement for linkage between aircraft approvals and airspace monitoring.

1.2 As the implementation date approached, it became evident that an insufficient number of aircraft would be RVSM approved in time to carry out the pre-implementation safety study along the lines of the agreed implementation plan. Because of this unforeseen turn of events, which would cause a delay to implementation, the North Atlantic Systems Planning Group (NAT SPG) agreed that a change to the implementation plan was required. The most significant change was the linkage of aircraft approvals to the airspace monitoring requirements. As more experience was gained with RVSM operations and as more data was gathered concerning the performance of aircraft, the monitoring requirements were changed as appropriate.

1.3 When planning for the implementation of RVSM in the Asia and Pacific (ASIA/PAC) Regions, the second area to implement RVSM, the NAT Region experience was used and the linkage between aircraft approvals and airspace monitoring was maintained. However, as experience was accumulated in the ASIA/PAC Regions, it became apparent that their monitoring requirements were different from those of the NAT Region.

1.4 In addition to the above, planning for implementation of RVSM in the European (EUR) Region is very advanced with an implementation date of 24 January 2002. As regards the linkage between aircraft approval and height keeping performance monitoring, the EUR RVSM programme did not have a reason to divert from the ICAO guidance of Doc 9574, according to which monitoring is not part of the approval process but serves as input to the safety assessments. It was possible to take this approach because the EUR RVSM programme did not have the problems experienced with NAT RVSM implementation (see paragraph 1.2 above), partly because the increased size of the height monitoring infrastructure and the larger number of airframes already approved as a result of NAT RVSM.

1.5 An aircraft's RVSM approval includes three parts: the Minimum Aircraft System Performance Specification (MASPS) or technical performance, continuing maintenance requirements and operational procedures. The MASPS and continuing maintenance requirement are global and apply in all areas where RVSM has been implemented. The operational procedures are region specific because they must take account of the air traffic management (ATM) system that is specific to the region. This can lead to some confusion within some authorities that are responsible for granting RVSM approvals for aircraft that operate in several areas of the world.

## 2. DISCUSSION

2.1 The NAT SPG, when reviewing RVSM implementation issues, identified the differences between the regional applications highlighted above. This was possible because the managers of the three RVSM monitoring agencies that currently exist all participate in the work of the NAT SPG. Considering the imminent implementation of RVSM in the EUR Region and the plans to implement RVSM along the EUR South America corridor, the ICAO EUR/NAT Office convened a meeting of all existing RVSM regional monitoring agencies (RMA) with the objective of identifying in greater detail the regional differences relating to RVSM. The meeting, which was held from 24 to 25 January 2001, also initiated discussions on long term monitoring requirements with the view to contribute to the development of global requirements.

2.2 The meeting was able to resolve several issues regarding sharing information between all RMAs, the automated exchange of monitoring data so as to assist each other in meeting monitoring goals and to harmonise to the extent possible procedures and processes. The meeting was successful in achieving the objectives that it had set out. However, as RVSM is implemented in other parts of the world, the meeting felt that the informal NAT SPG mechanism would no longer be the appropriate forum to coordinate amongst all RMAs. In particular, the meeting agreed that long term RVSM monitoring requirements would need to be addressed globally. In this connection, the meeting was of the opinion that the Review of the General Concept of Separation Panel (RGCSPP) should be the forum to formalise the requirements that would be developed by the RMAs.

2.3 The RMA managers discussed the differences in implementation planning for the areas where RVSM is implemented or about to be implemented, especially regarding the relation between the monitoring and approval requirements. It was agreed that although the different approaches could be explained through the regional specificities, the differences caused confusion to operators and approval authorities, which currently impacted the progress of EUR RVSM implementation. As this issue may also impact the implementation of RVSM in other regions, the RMA managers agreed that it would need to be

given further attention with the aim to be resolved as soon as possible, and if possible, remove the linkage between monitoring and approvals.

2.4 Bearing in mind the above and that differences would continue to exist, the RMA managers agreed that some mechanism should be put in place to provide a forum to coordinate all issues related to RVSM monitoring and aircraft approvals policy. This forum would also provide an opportunity for the RMA managers to exchange safety related data. The RMA managers meeting was not able to develop a specific proposal for the establishment of such a mechanism, it did however agree that this activity should be carried out at the regional level as part of the ongoing regional planning groups work programmes. It was also agreed that until a more formal process can be developed and endorsed by regional planning groups, the informal NAT SPG process should continue to be used. The reason to maintain the status quo for the time being was simply that the three current RMAs all participate in the work of the NAT SPG in the field of RVSM.

2.5 In concluding its discussions on the need for an interregional coordination mechanism, the RMA managers felt that the successful development of such a mechanism could benefit other communications, navigation and surveillance/air traffic management (CNS/ATM) programmes that, because of the specificity of the regions, are planned and managed at the regional level but also have global reach. By providing such a mechanism, the regions would be able to exchange technical information and resolve inconsistencies therefore providing transparency at the interfaces between the regions.

### **3. CONCLUSION**

3.1 The planning and implementation of RVSM in the ASIA/PAC, EUR and NAT Regions was carried out on a regional basis to cater for the progressive implementation of RVSM as well as the specificity of each region. As a result to this approach, implementation was done slightly differently in each area. Experience has shown that a coordination mechanism with direct links to regional planning groups is required to ensure that regional planning for RVSM fits into the overall global objectives and transparency is guaranteed at regional interfaces. Until such time as it is possible to establish such a coordination mechanism, the current informal process of convening meetings of the RMA managers should continue.

### **4. ACTION BY ALLPIRG**

4.1 The meeting is invited to:

- a) note the information presented herein; and
- b) note the current arrangements for inter regional coordination.