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

EUROPEAN PROGRAMME FOR IMPLEMENTATION OF REDUCED VERTICAL SEPARATION MINIMUM (RVSM)

(Presented by the European Organisation for the Safety of Air Navigation (EUROCONTROL))

SUMMARY

This paper provides an overview of the status of the European RVSM Programme, and indicates issues and risks, which the programme currently faces.

1. INTRODUCTION

1.1 EUROCONTROL manages, in close co-operation with ICAO and ECAC, the EUR RVSM Programme. Furthermore, EUROCONTROL is responsible for the EUR RVSM operating concept, the EUR RVSM wide safety assessments, and the development and implementation of the Monitoring Infrastructure. In the context of EUR RVSM, the EUROCONTROL Agency acts as Regional Monitoring Agency (RMA). The EUR RVSM Master Plan, as agreed by all stakeholders in 1999, foresees RVSM implementation on 24 January 2002.

1.2 The EUR RVSM Programme is a key enabler in European aviation in that ATS providers will have the ability to increase airspace capacity by providing an additional six flight levels, and Airspace users will benefit from reduced in-flight delays and increased fuel economies. The programme stakeholders include the Authorities and ATS Providers of the 40 participating States, and 3000 aircraft operators who operate approximately 10000 aircraft in European airspace at FL290 and above.

1.3 The EUR RVSM Programme is currently on schedule, but a number of risks to its timely implementation still exist.

1.4 July 2001 is a critical month in the RVSM Programme in that the EUROCONTROL Provisional Council, as well as the ICAO European Air Navigation Planning Group Programme Co-ordinating Group (EANPG/COG), will be asked to make a decision on whether to proceed with the Programme as planned or, alternatively, delay it. For a Go Decision, it is crucial that all stakeholders

involved in the Programme ensure that they meet the target dates set for them in the RVSM Master Plan. The main elements for the decision are the **Airspace User readiness**, the **State (ATM) Preparedness** and the **Pre-Implementation Safety Case**. If a Go Decision cannot be made in July 2001, the RVSM Programme will be delayed.

2. AIRSPACE USER READINESS

2.1 The EUR RVSM Master Plan calls for aircraft approval for RVSM operation by 31 March 2001. This target date of 31 March 2001 for full RVSM approval is aimed at:

- ensuring sufficient number of airframes are modified to meet the RVSM Minimum Aircraft System Performance Specification (MASPS) in time to be monitored, an essential input to the Pre-Implementation Safety Case;

- ensuring a sufficient number of operators/aircraft are ready to start RVSM operations, which is a pre-requisite for commencing the final RVSM implementation arrangements by states; and

- achieving a high level of confidence, before the Go Decision, that the number of non-RVSM operators/aircraft moving their operations to below RVSM airspace does not have an adverse operational impact.

2.2 As of January 2001 the number of aircraft notified to the Programme as modified to be RVSM compliant is approximately 7000 (5000 of these were modified for North Atlantic and/or Pacific RVSM). As a percentage of airframes, expected to operate within EUR RVSM airspace, this is approximately 70%. It is currently estimated that about 75% of the airframes, representing 80% of the current flights at and above FL 290, will be compliant by the end of March 2001. RVSM MASPS compliance is a pre-requisite to participate in the EUR RVSM Monitoring Programme (see §4).

2.3 There are approximately 2000 airframes, representing 8% of flights currently flying in the projected European RVSM airspace, for which there is no RVSM solution available. This is estimated to decrease to affect about 6.5% of flights by January 2002. Some of these aircraft will be removed from service or operated outside the lateral limits of European RVSM airspace, others will fly below FL 290. The impact of non-RVSM approved flights below FL290 is currently under study.

2.4 The preparedness of States' Regulatory Authorities to grant approvals for operations within RVSM airspace (required by 31 March 2001), is also a pressing issue. Delays of the Regulatory Authorities on RVSM approval request from operators will nullify the efforts by the RVSM Programme and aircraft operators (and manufacturers) to meet the approval timescales. From operators it is understood that in a number of States there is still no RVSM approval process in place. Estimation of the number of full RVSM approvals granted by State Authorities has proven difficult because of the lack of information forthcoming from certification authorities.

3. RVSM STATES' PREPAREDNESS

3.1 There has been significant progress in the activities of 40 States in whose airspace RVSM operations will be conducted. Most National Programme Managers (NPMs) have reported that their activities are on track although in some cases the Master Plan dates will not be met on time. Dates for

RVSM modifications of ATS systems are nearly all available and this has decreased the number of States which had critical outstanding issues.

3.2 There are currently no States that will not be able to implement RVSM according to the programme time scales. Out of the 40 participating States there are currently 11 States for which there remain outstanding issues, but for which urgent action is in hand to resolve and to meet the programme time scales, such as:

- the dates announced for the completion of the key activities are too close to the implementation date and a back-up is not available or a contingency plan has not (yet) been developed;
- planning on key activities is not yet finalised; and/or
- the complexity or difficulty of certain activities are such that the successful and timely completion is put in doubt.

3.3 The RVSM Programme will be supporting the States' National Programme Managers and their teams to reduce the risk where possible. It is also necessary that management at the highest level in the administrations concerned also give priority to these critical activities. The rest of the States are considered on schedule. In some cases this assessment has been based on the confidence within the Programme that overrun dates agreed in the Master Plan are recoupable or not so critical to the national Plan. It will be the programme's objective to assist and support as required.

3.4 For the timely achievement of the EUR RVSM Programme, co-operation is required with the States which are adjacent to the EUR RVSM area of applicability, such as the Russian Federation and the MID Region States. EUROCONTROL is supporting this co-operation to the extent possible.

4. EUR RVSM PRE-IMPLEMENTATION RVSM SAFETY CASE

4.1 The EUR RVSM Programme applies the ICAO RVSM Guidance Material in terms of safety approach and objectives, and applies EUROCONTROL's European Air Traffic Management Programme (EATMP) safety principles as required for EATMP programmes & projects. The Pre-Implementation Safety Case (PISC) will provide a Functional Hazard Assessment, Collision Risk Assessments and State National Safety Plans as main elements. The Safety Case will be submitted to the EUROCONTROL Safety Regulation Commission (SRC) in May 2001 and to the EUROCONTROL Provisional Council and ICAO EANPG/COG in July for the Go decision. An update is foreseen by the end of August. Post-Implementation safety assessments are foreseen for December 2002 and December 2004.

4.2 The Pre-Implementation Safety Case seeks to provide reassurance, through a coherent and comprehensive document, that RVSM Implementation and operations in European RVSM airspace can proceed safely. The PISC will therefore cover both the concept of RVSM operations in the European context as well as implementation aspects, and addresses both the air and ground components of the ATM system.

4.3 One major source of information for the Collision Risk Assessment is the output from the EUROCONTROL Height Keeping Performance Monitoring Infrastructure. This infrastructure, consisting

of three new Height Monitoring Units (HMUs), 25 GPS Monitoring Units (GMUs), and a Monitoring Cell at the EUROCONTROL Experimental Centre was completed in November 2000.

4.4 Of critical importance is now the readiness of airspace users to participate in the Monitoring Programme (see §2). Nearly half of all airframes confirmed as ready for monitoring in the European Region have been monitored. To what extent the EUR RVSM monitoring targets are being met is currently under study.

4.5 A first draft of the pre-implementation RVSM safety case will be presented to the Safety Regulation Commission in February 2001.

5. INTERREGIONAL COOPERATION REGARDING RVSM MONITORING

5.1 On 24-25 January 2001, a "Regional Monitoring Agency" (RMA) meeting was organised by the ICAO EUR/NAT Office, and was attended by representatives from the North Atlantic Central Monitoring Agency (NAT CMA), the Asia Pacific Approvals Registry and Monitoring Organisation (APARMO, RMA for Pacific RVSM), and EUROCONTROL (acting RMA for EUR RVSM).

5.2 The meeting considered a number of aspects of RVSM monitoring which required inter-regional co-ordination and co-operation. A separate ALLPIRG paper (by the ICAO EUR/NAT Office) discusses this meeting in more detail. Agreement on the need for a more global approach towards RVSM monitoring was reached, as well as on the need for further RMA meetings to support this objective.

6. ACTION BY THE MEETING

6.1 The meeting is invited to note the information provided in this paper.

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