INTERNATIONAL CIVIL AVIATION ORGANIZATION

TWELFTH MEETING ON THE IMPROVEMENT OF THE AIR TRAFFIC SERVICES IN THE SOUTH ATLANTIC

(Sal, Cape Verde, 15 – 17 December 2004)

Agenda item 3: Air Traffic Management

Safety Assessment

(Presented by the Brazil)

Summary

This working paper presents a proposal for monitoring the parameters used in the pre-implementation RNP 10 and RVSM Safety Assessment, in order to assure the Air Navigation Safety in the EUR/SAM Corridor.

1. Introduction

In DOC. 9574, the implementation of RVSM is foreseen into 5 Steps. Nowadays, the implementation of RVSM in the EUR/SAM Corridor is in the Step 5 "Operational use of RVSM". After the pre-implementation evaluation, it is necessary to ensure continued system safety. Particular attention will be required to ensure that:

a) all aircraft operating in RVSM airspace are RVSM approved;
b) the RVSM approval process remains effective;
c) the TLS of 2.5 × 10 -9 fatal accidents per aircraft flight hour (in respect of monitored technical height-keeping performance of a representative sample of the aircraft population) continues to be met with a predetermined level of statistical confidence;
d) with a predetermined level of statistical confidence, the introduction of RVSM does not increase the level of risk due to operational errors and in-flight contingencies;
e) additional safety measures, introduced to reduce the risk as a result of operational errors and in-flight contingencies and to meet the overall safety objectives, are effective;
f) evidence of altimetry system error (ASE) stability exists; and
g) ATC procedures remain effective.

2. Parameters to be monitored in order to assure safety in the EUR/SAM Corridor

2.1. Chapter 6 of Doc. 9574 indicates the parameter to be monitored in order to assure safety in the RVSM Airspace. These parameters are:

a) the vertical overlap probability, P z (1 000), does not exceed 1.7 × 10 -8 ;
b) the combination of all passing frequency components has no more of an adverse effect on risk than does an opposite- direction passing frequency of 2.5 per aircraft flying hour; and
c) the lateral overlap probability, Py (0), is not greater than 0.058 (this is based on a lateral path-keeping accuracy standard deviation of 550 m (0.3 NM)).

2.2. If any one of these criteria is exceeded, the collision risk probability should be reassessed to ensure that the technical TLS is not being exceeded, and remedial action should be taken.

2.3. Since the beginning of RVSM in the EUR/SAM Corridor, there wasn't any kind of data collection to evaluate safety in the mentioned airspace. So, the following question must be asked: Does the RVSM Airspace of EUR/SAM Corridor remain safe?

2.4. The parameters mentioned above are just related to the Technical Error. Normally, the Operational Errors are greater than Technical Errors and must be monitored as well.

2.5. So far, there is no Data Collection Process in force in EUR/SAM Corridor and an update in the Large Deviation Form must be done, in order to obtain the necessary data to monitor the parameters mentioned in 2.1 above and the operational errors.

3. Suggested Action

3.1. The Meeting is invited to take note of the information provided in this working paper and discuss the necessary means to monitor the parameters related to the safety assessment in the EUR/SAM Corridor.
