



INTERNATIONAL CIVIL AVIATION ORGANIZATION
South American Regional Office - Regional Project RLA/06/901

Assistance for the implementation of a Regional ATM System, taking into account the ATM operational concept and the corresponding CNS technological support

Eighth Workshop/Meeting of the SAM Implementation Group (SAM/IG/8)
(Lima, Peru, 10-14 October 2011)

SAM/IG/8-WP/05
20/09/11

Agenda Item 2: Optimisation of the ATS route structure

Follow-up on the Safety Assessment Following the Implementation of Version 1 of the ATS Route Network

(Presented by the Secretariat)

Summary	
This working paper contains an assessment of some of the difficulties faced during the implementation of Version 1 of the ATS route network. Based on the analysis and the lessons learnt, the proposal is made to apply measures for improving the process of implementation of Version 2 of the SAM ATS route network.	
References: <ul style="list-style-type: none">• Annex 11 to the ICAO Convention• Safety assessment of Version 1 of the ATS route network• SAMIG meeting reports	
ICAO strategic objectives:	<i>A – Safety</i> <i>C – Environmental protection</i>

1 Background

1.1 As a result of the SAM ATS route network optimisation programme, Version 1 of the ATS route network was implemented on 10 March 2011.

1.2 Pursuant to the requirements established in Annex 11, par. 2.27.5 *Safety Management* and in view of the significant changes introduced by the implementation of Version 1 of the ATS route network, the South American Region conducted a safety assessment to identify hazards and assess risk in terms of likelihood and severity, in accordance with the provisions of the Safety Management Manual (ICAO Doc 9859), and defined a series of measures and actions to mitigate safety risk.

1.3 This safety assessment was approved for its use by the SAM Implementation Group at its sixth meeting (SAM/IG/6), which agreed that States should adopt the measures identified therein, analyse the lessons learnt, and monitor safety following the implementation of Version 1.

2 Discussion

2.1 The States participating at the workshop analysed some of the difficulties faced during the implementation, and which could have affected safety. Amongst other factors, the participants identified the following:

2.2 In some cases and despite the publication of the corresponding AIRAC on the agreed date, coordination with the database provider was deficient, and thus the aeronautical charts contained reporting points and route paths that had been eliminated through the AIRAC. Consequently, users and controllers had difficulties to identify the new reporting points.

2.3 Coordination with neighbouring ATC units was also deficient, since the letters of agreement could not be formally updated and agreements were made verbally, resulting in some handover mismatches at FIR boundaries.

2.4 For this same reason, the corresponding contingency plan could not be updated.

2.5 Some routes, like UM 784, were implemented and after a short period of time, were no longer used. This situation should be assessed together with airspace users and IATA so as not to implement routes that are of no interest to airlines.

2.6 One State expressed some difficulties in the selection of five-letter names (5LNC) for their assignment to reporting points, although they had been distributed and presentations had been made on the new assignment process at various events.

2.7 The date of implementation of Version 1 was set for 10 March 2011, but a transition plan defining a specific time for its implementation was not developed, in the understanding that it would be at 00:00Z. Nevertheless, some States had to postpone the implementation for a few hours, since traffic was significant during that period, and they preferred to postpone implementation rather than jeopardise safety.

2.8 In some cases, Version 1 of the route network was implemented, but the structure of ATC sectors was not modified, which resulted in a significant workload in some sectors.

2.9 In some cases, coordination with the AIS was not as effective as expected, generating some failures in the publication of the AIC; consequently a new publication was required to overcome this difficulty.

2.10 In some cases, there were problems in the SIDs and STARs, and there was no continuity between the route network structure and the corresponding approach procedures.

2.11 Some States could not comply with the agreed AIRAC date, making it difficult to introduce the new routes in the aircraft database, and thus there was no continuity in the route network. This was considered to be one of the most complex situations since it gave rise to a series of problems to such an extent that consideration was given to discontinue the implementation. Based on the analysis conducted at regional level, it was concluded that it was more harmful to stop the implementation than to proceed with it, and the problems identified were gradually resolved on a case-by-case basis through coordination between ACCs.

2.12 Some airspace sectors were identified in which it would have been better if they had been transferred in order to facilitate coordination between control centres and traffic management.

2.13 In some cases, it was noted that, for purposes of coordination with adjacent ACCs, ATCOs were not duly trained on the new routes, reason why, during the first few hours of the implementation, there was some confusion amongst ACCs and users.

2.14 One aspect that was highlighted during the analysis was the lack of effective coordination between regulatory authorities and the service provider. This failure to coordinate has partly hindered an effective training of ATCOs on the new structure and reporting points. Failure to update the letters of operational agreement contributed in some cases to the lack of information.

2.15 One State indicated that the lack of an effective civil-military coordination also prevented further improvement of the route network structure.

2.16 As a result of the foregoing, the workshop agreed on certain measures that should be taken into account during the implementation of Version 2, and which are shown as **Appendix A** to this working paper. In general terms, the workshop also agreed in urging the States, ATS service providers and, if applicable, airspace users and international organisations to comply with such measures, and to improve the internal publication processes and compliance with AIRAC dates, improve and/or formalise coordination between States and database providers; review operational agreements and contingency plans; and update the operating manuals.

3. **Suggested action**

3.1 The Meeting is invited to take note of the information provided in this working paper and to analyse the measures shown in **Appendix A** to this working paper, so that they can be applied during the implementation of Version 2 of the ATS route network.

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Appendix A

Measures to be taken into account during the implementation of Version 2

- a) Comply with the AIRAC dates and with those agreed for the publication of amendments to their respective AIPs, since failure to do this could generate a potential safety hazard.
- b) Set, duly in advance, a deadline for receiving optimisation proposals, in order to allow States and users to duly plan the implementation.
- c) Prepare a transition plan establishing not only the effective date but also a time of implementation that suits all States, so as to have an acceptable volume of traffic and will not affect operations or jeopardise safety.
- d) Update the letters of operational agreement and the ATC manuals before the implementation of the new version of the ATS route network, as well as the ACC contingency plan.
- e) Inform and train the personnel and airspace users regarding the changes to be implemented, in order to avoid confusion and misinformation.
- f) Incorporate, from the beginning of the route network optimisation programme, the operational personnel or their representatives so that the ATCOs will accept the changes and, even more important, may assess the changes from an operational point of view and be an essential part of the process.
- g) Ensure continuity between SIDs and the route structure, and between the route structure and the STARs and approaches, using a common reference and compatible altitudes in the interface;
- h) Avoid taking isolated action for airspace restructuring or in the national ATS route network that might have a significant impact on traffic beyond the area of jurisdiction of the State involved.
- i) Plan a better airspace sectorisation in order to reduce ATC workload and optimise ATC capacity, including the possibility of delegating the ATS.
- j) Improve civil/military coordination to ensure the efficiency of the route network.
- k) Permit the application of the flexible use of airspace (FUA) concept to make sure that the requirements of all airspace users are met.
- l) Permit full integration with the domestic route network of the State.
- m) Minimise the number of ATS routes, always taking into account traffic demand *vis-a-vis* ATC capacity and the possibility of applying direct routes.
- n) Minimise the number of crossings inasmuch as possible, and when required, these crossings should be planned so as to avoid more congested sectors.
- o) Improve the complexities of airspace structure that should be resolved during the implementation of Version 2 of the ATS route network.