



Agenda Item 2: Analysis of Version 1 of the SAM ATS routes network

**REQUIREMENTS FOR REQUESTING THE IMPLEMENTATION
OF A NEW RNAV ROUTE**

(Presented by the Secretariat)

Summary	
This working paper contains information about criteria and principles for planning new RNAV routes in the SAM Region, as well as a feasibility study request form for new RNAV routes.	
References: <ul style="list-style-type: none">• GREPECAS/15 and GREPECAS/16 meeting reports• SAM/IG meeting reports• ATSRO/1 and ATSRO/2 meeting reports• SAM ATS route network optimisation programme	
ICAO Strategic Objectives:	<i>A – Safety</i> <i>C – Environmental protection and sustainable development of air transport</i>

1 Background

1.1 During the ATS route network optimisation process, it has been noted that, in many cases, the routes requested by airspace users were ultimately not used as expected, creating setbacks and unnecessary expenditure for civil aviation administrations, which could have been avoided if an in-depth analysis of the requested route had been done.

1.2 Upon starting this new Phase 3 of the optimisation programme for the implementation of Version 2, civil aviation authorities and airspace users should be aware of some requirements that will serve as the basis for a feasibility study of the new route to be implemented.

2 Discussion

2.1 The first analysis of the ATS route network of the Region resulted in some conclusions and criteria that shall be taken into account in the new process:

- a) The development of a harmonised and consistent route network requires States to participate actively in international working groups for the establishment or revision of the regional route network.

- b) The main regional air traffic flows, as well as those extending beyond the Region and that have a direct impact on the regional route network must be identified in order to determine the deficiencies in the route network and in ATC sector organisation.
- c) Establish and review the ATS route network and the supporting sectorisation in order to accommodate the main air traffic flows, reducing the complexity of the airspace structure and balancing ATC workload.
- d) Incorporate the routes required to connect the regional route network to/from airports that are not served by such network. Likewise, there is a need to integrate the non-permanent routes required to alleviate air traffic load in the main ATS routes, and to ensure optimum flight profiles.
- e) Ensure connectivity between the ATS route network and TMA airspace.
- f) Establish a phased implementation to ensure consistency with implementation by the States.

2.2 Airspace planners must take into account the main planning principles:

- a) Air traffic volume in existing and proposed routes;
- b) Establishment of paths that are as short as possible for most flights;
- c) Prioritise planning of areas with more air traffic volume;
- d) Meet the needs of civil and military users;
- e) Integrate the route network and the supporting sectorisation from the beginning of the planning process;
- f) Integrate the route network and TMA arrival and departure (SID and STAR) paths.
- g) Make sure that at least 30 monthly flights are conducted on the requested route. This criterion should be also applied when considering the elimination of an existing route.
- h) Avoid isolated implementation of RNAV routes unless absolutely necessary.

2.3 In turn, to facilitate the study, users shall present the following information:

- a) The point of origin and the point of destination of the proposed RNAV route.
- b) Number of weekly operations foreseen.
- c) Distance in NM between the point of origin and the point of destination in the existing routes.

- d) Reduction of miles with respect to existing routes and total number of NM between the point of origin and the point of destination.
- e) Annual fuel savings, in kilogrammes, according to the types of aircraft to be operated in the route (average, if appropriate).
- f) Annual reduction of CO² emissions into the atmosphere in the new route.
- g) Geographical coordinates of significant points on FIR boundaries and where the route crosses an existing one.
- h) List of FIRs involved in the proposed RNAV route.
- i) Comments/remarks.

Note: If possible, a graph depicting the approximate route path shall be presented.

2.4 For a better analysis of this matter, **Appendix A** contains a format that the Meeting may review for use at regional level.

3 **Suggested action**

3.1 The Meeting is invited to:

- a) take note of the information contained in this working paper;
- b) review paragraphs 2.1 and 2.2 of this paper;
- c) review Appendix A to this working paper and, if appropriate, make the changes it deems advisable; and
- d) approve the use of the table shown in **Appendix A** for requesting a feasibility study of a new RNAV route.

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APPENDIX A

TABLE WITH DATA ON NEW RNAV ROUTES

Example:

Origin/Destination	Number of weekly operations	Distance in NM between origin and destination	Reduction of NM in the proposed route	Annual operational savings in kgs of fuel	Annual reduction of CO2 emissions in the new route	List of FIRs involved	Geographical coordinates of significant points	Remarks
1	2	3	4	5	6	7	8	9
Lima / Brasilia	14	1784	70 NM (1714)	292.054	922890.64	Lima La Paz Amazónica Brasilia	13 27 52.89S 069 57 13.56W 14 41 47.61S 060 15 38.52W 14 55 17.19S 058 21 53.41W	Direct route LIM/BR States involved: Peru, Bolivia and Brazil

- a) The points of origin and destination of the proposed RNAV route will be included
- b) Number of weekly operations foreseen
- c) Distance in NM between points of origin and destination in existing routes
- d) Reduction in miles with respect to existing routes, and total number of NM between the points of origin and destination
- e) Annual fuel savings, in kilogrammes, according to the types of aircraft to be operated in the route (average, if appropriate)
- f) Annual reduction of CO2 emissions into the atmosphere in the new route
- g) Geographical coordinates of significant points on FIR boundaries and where the route crosses an existing one
- h) List of FIRs involved in the proposed RNAV route
- i) Comments/remarks

Note: A graph of the approximate path of the route will be submitted.