SAM/IG/4
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International Civil Aviation Organization
South American Regional Office

FOURTH WORKSHOP/MEETING OF THE SAM IMPLEMENTATION GROUP (SAM/IG/4)
REGIONAL PROJECT RLA/06/901

Lima, Peru, 19 to 23 October 2009

Agenda Item 2: Optimization of the ATS routes structure

RNAV ROUTE MONTEVIDEO – ASUNCIÓN

(Presented by José Pastoriza, Uruguay)

Summary

This working paper provides information on the convenience to implement an RNAV route between MONTEVIDEO and ASUNCIÓN, and supplementary data on fuel savings and environmental contamination is also given in addition to data provided at the ATM/CNS Multilateral Meeting.

References:

- Optimization of ATS Routes Network
- ICAO Initiative for the reduction of CO2 emissions
- Air Navigation Global Plan, Doc 9750
- ATM/CNS Multilateral Meeting Argentina, Bolivia, Brazil, Paraguay and Uruguay (Lima, Peru, 14-18 September 2009).

1 Background

1.1 The incorporation of the Global ATM Operational Concept, to the Air Navigation Plan, facilitated planning and implementation of new innovative which enable organizational and airspace management improvements.

1.2 The initiative to reorganize the SAM Region ATS routes was presented at the SAM/IG/3 Meeting, held in Lima, Peru, on April 2009, as a follow-up of the ATS routes optimization programme, being developed by the ICAO SAM Regional Office as a contribution to the airspace optimization, as a contribution to airspace optimization, expecting to contribute to the compliance of ICAO strategic objectives.

1.3 During the ATM/CNS Multilateral Meeting Argentina, Bolivia, Brazil, Paraguay and Uruguay held Lima, Peru, from 14 to18 September 2009, and taking into consideration the airspace restructuring works being carried out by the Argentinean Administration, it was agreed that this State would again deal with this matter with Uruguay at the SAM/IG/4 Meeting.

2 **Discussion**

2.1 With regard to the convenience to implement the RNAV route Asunción-Montevideo, data was requested to PLUNA. The current distance covered is as follows:

SEGMENT	DISTANCE (NM
Montevideo/Asunción	609
Asunción/Montevideo	604
TOTAL	**1213**

2.2 The distance between both cities in a direct route is **581 NM**, which means a saving in the segment Montevideo/Asunción of **28 NM** and **23NM** in the segment Asunción/Montevideo. This would represent a total saving of **51 NM (See Appendix A).**

2.3 Also, the expansion plans of PLUNA, S. A., mean that the amount of flights between this pair of cities will significantly increase.

2.4 Taking into account the statistics of July 2009, it could be verified that in the route Montevideo – Asunción – Montevideo, **87** flights were carried out, **61** flights were carried out with CRJ900, **23** with A319 and **4** with A320. If this route had been implemented by July 2009, the savings would have been as follows:

RNAV MONTEVIDEO/ASUNCIÓN					
MONTEVIDEO/ASUNCIÓN SEGMENT					
SAVINGS NM	**WEEKLY FLIGHTS**	**TYPE ACFT.**	**MONTHLY FUEL SAVINGS IN KGS.**	**TOTAL MONTHLY CO2 NOT ISSUED IN KGS.**	**MONTHLY SAVINGS U$S**
28	3	A319	5643	17984	4966
	7	CRJ9			
ASUNCIÓN/MONTEVIDEO SEGMENT					
SAVINGS NM	**WEEKLY FLIGHTS**	**TYPE ACFT.**	**MONTHLY FUEL SAVINGS IN KGS.**	**TOTAL MONTHLY CO2 NOT ISSUED IN KGS.**	**MONTHLY SAVINGS U$S**
23	3	A319	4635	14773	4079
	7	CRJ9			
TOTAL SAVINGS ROUND TRIP					
SAVINGS NM	**WEEKLY FLIGHTS**	**TYPE ACFT.**	**MONTHLY FUEL SAVINGS IN KGS.**	**TOTAL MONTHLY CO2 NOT ISSUED IN KGS.**	**MONTHLY SAVINGS U$S**
51	**20**		**10278**	**32757**	**9045**

*Estimated values calculated with “DISTANCE/TIME CALCULATOR” from IATA.

2.5 The existence of **30** B737 flights joining Montevideo with Panama, which use the route that passes the next Asunción VOR, which could be an adequate alternative to reduce the distance in its route. Also, 17 B763 flights were verified, which could mean an increase of:

RNAV MONTEVIDEO/ASUNCIÓN					
MONTEVIDEO/ASUNCIÓN SEGMENT					
SAVINGS NM	**WEEKLY FLIGHTS**	**TYPE ACFT.**	**MONTHLY FUEL SAVINGS IN KGS.**	**TOTAL MONTHLY CO2 NOT ISSUED IN KGS.**	**MONTHLY SAVINGS U$S**
28	6	B738	5258	16758	4627
	2	B763			
ASUNCIÓN/MONTEVIDEO SEGMENT					
SAVINGS NM	**WEEKLY FLIGHTS**	**TYPE ACFT.**	**MONTHLY FUEL SAVINGS IN KGS.**	**TOTAL MONTHLY CO2 NOT ISSUED IN KGS.**	**MONTHLY SAVINGS U$S**
23			1718	5474	1511
	2	B763			
TOTAL SAVINGS ROUND TRIP					
SAVINGS NM	**WEEKLY FLIGHTS**	**TYPE ACFT.**	**MONTHLY FUEL SAVINGS IN KGS.**	**TOTAL MONTHLY CO2 NOT ISSUED IN KGS.**	**MONTHLY SAVINGS U$S**
51	**10**		**6976**	**22232**	**6138**

*Values estimated with “DISTANCE/TIME CALCULATOR” from IATA.

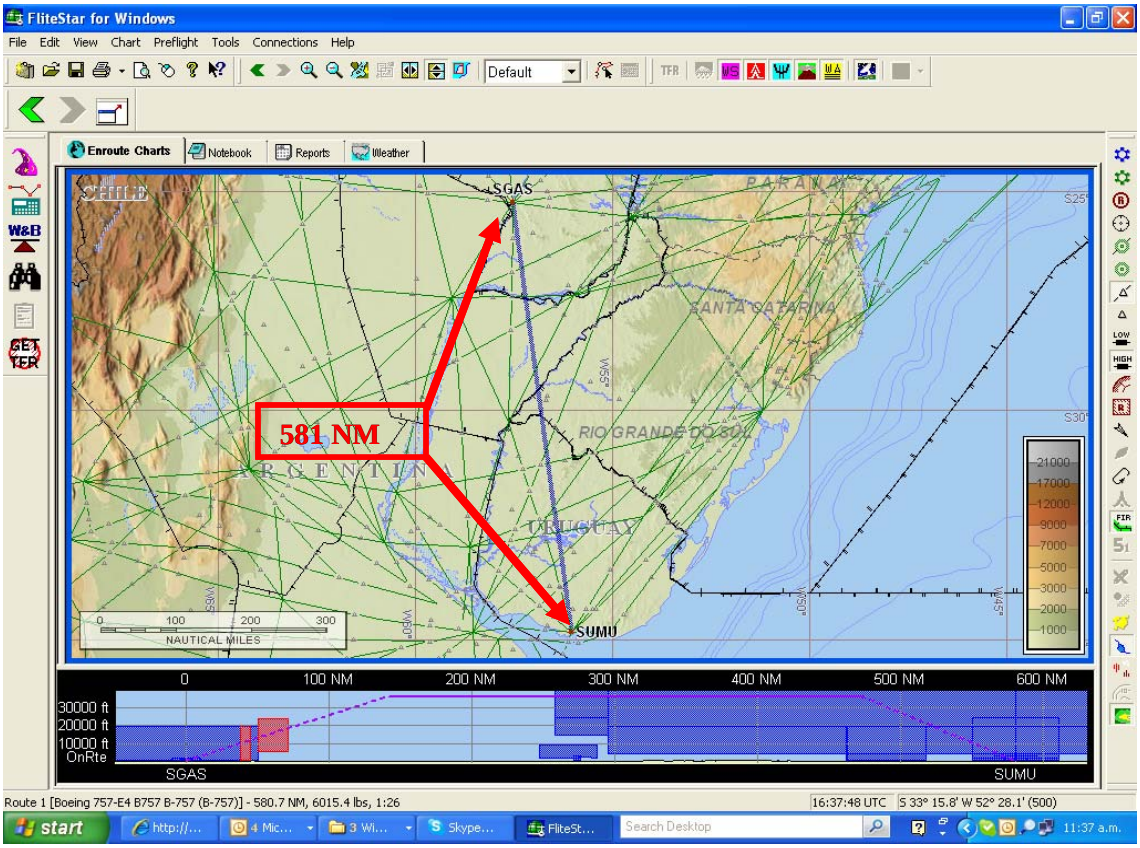
2.6 This air traffic is increased during summer, both in regular and general aviation air traffic, and it is also estimated that there is a traffic increase due to an increment of frequencies of PLUNA, S.A.

2.7 The charts corresponding to the route design are presented in **Appendix A** to this working paper.

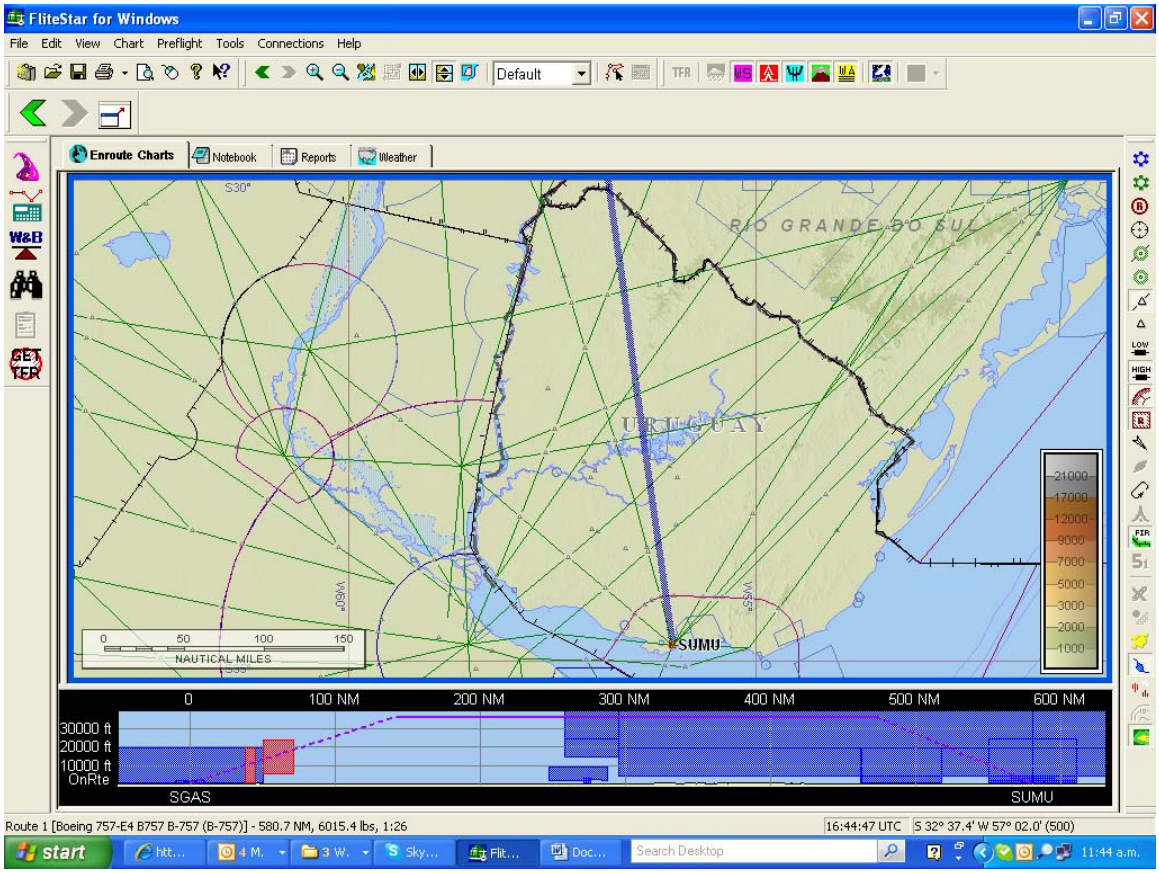
3 **Suggested action**

3.1 The meeting is invited to pay attention to the data presented, in order to re-consider the implementation of the proposed RNAV route.

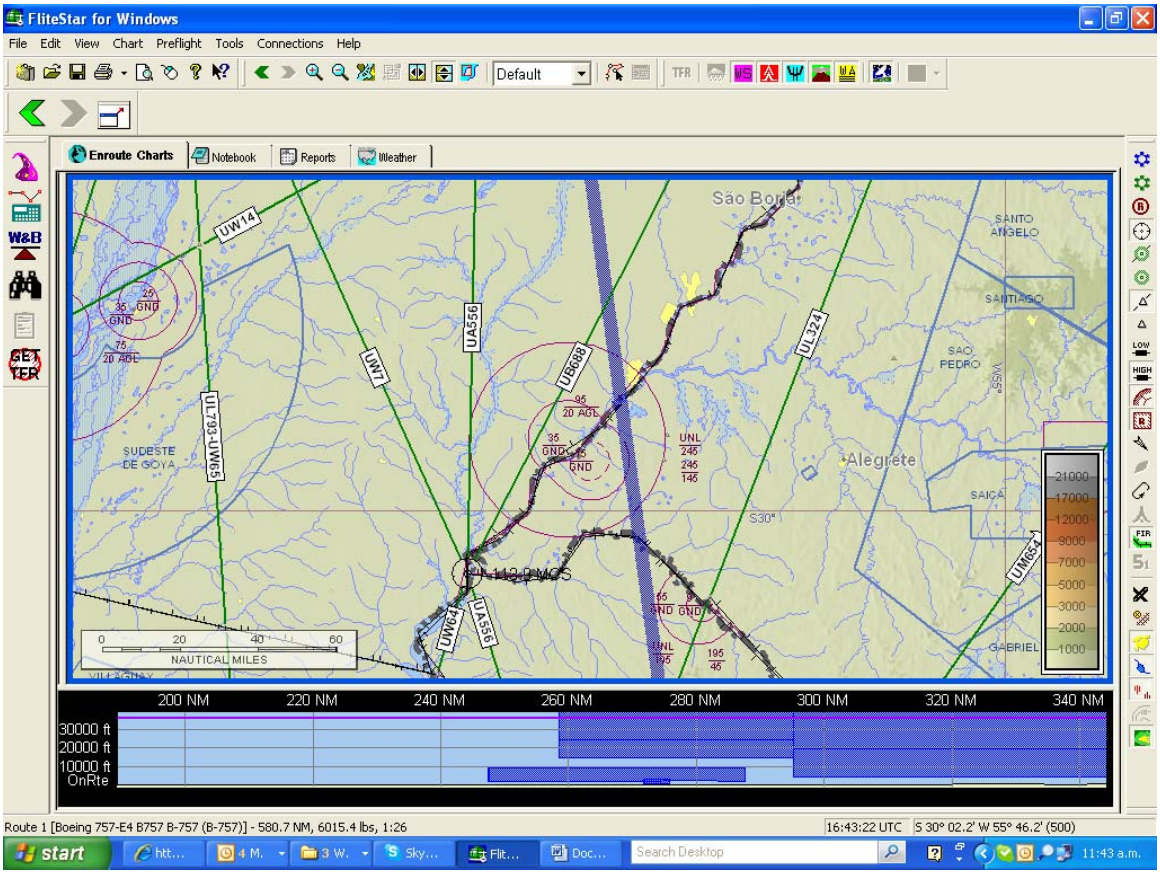
APPENDIX A



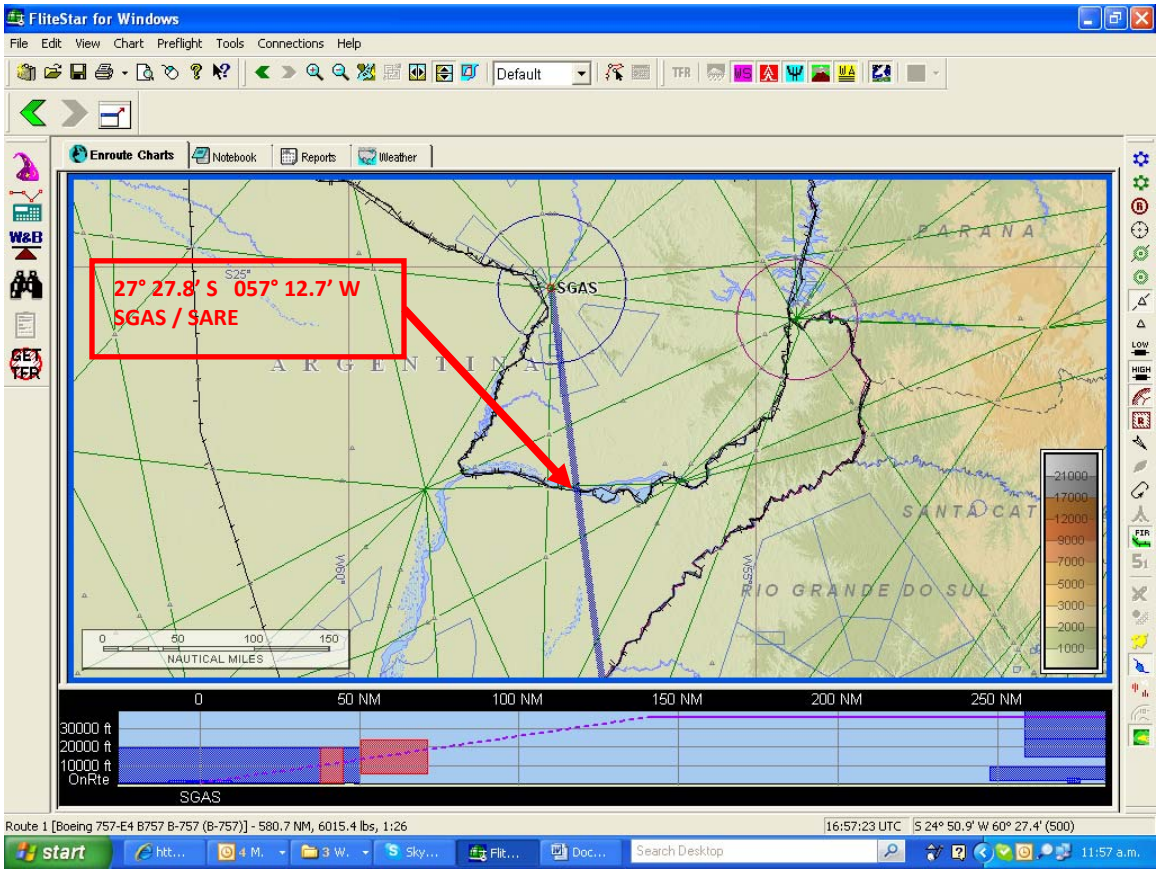
A-1 COMPLETE ROUTE



A-2 ROUTE IN URUGUAYAN AIRSPACE



A-3 SUEO/SCBW/SARE FIRs CROSSINGS



A-4 SARE/SGAS FIRs CROSSINGS