International Civil Aviation Organization
South American Regional Office
Eleventh Workshop/Meeting of the SAM Implementation Group (SAM/IG/11)
(Lima, Peru, 13 to 17 May 2013)

Agenda Item 2: SAM airspace optimization

AIRSPACE DESIGN COURSE

(Presented by the Secretariat)

SUMMARY

This working paper discusses the training of SAM experts in the redesign of terminal areas in their main international airports pursuant to task 3.2.5 of the ATSRO Action Plan and proposes a revision of the tasks contained in the ATSRO Action Plan so as to continue with this successful process.

REFERENCES:

- SAM/IG/7 meeting
- ASTRO/3 meeting
- ATSRO Action Plan

ICAO Strategic Objectives:	*A - Safety* *C - Environmental protection and sustainable development of air transport*

1 Background

1.1 Regarding the development of **Phase 3**, Version 02 of the SAM Route Optimization Programme, the SAM/IG/7 meeting revised the planning of the relevant tasks to match its associated Action Plan in order to implement **Version 02** of the ATS route network.

1.2 The ATSRO/3 meeting felt that Phase 3 should involve a complete restructuring of the route network, with a view to full integration of ATS routes, control sectors, TMAs, etc., through the use of the Flexible Use of Airspace concept. In this respect, the meeting approved the modifications and improvements to the Action Plan, Phase 3 Version 02 of the SAM ATS Route Optimization Programme.

1.3 The meeting considered that, amongst the new activities, an important one was the conduction of a Seminar/Workshop on Airspace Planning, aimed at preparing airspace planners of the States of the Region for the integration of TMAs into this optimization process.

2. Discussion

2.1 Pursuant to task 3.2.5 of the ATSRO Action Plan, a Course/Workshop on airspace design for the CAR/SAM Regions was held in Miami, United States, on 11-22 March 2013.

2.2 The purpose of this Course/Workshop was to train experts of the Region for addressing the phase involving airspace design in terminal areas based on the PBN concept, thus enabling the completion of Phase 3 of the Route Optimization Programme being carried out by Project RLA/06/901 in the SAM Region.

2.3 IATA supported this Course/Workshop by providing logistics and instructors (Messrs. Joel Morin and Walter White), and CANSO paid for simultaneous interpretation services for the theoretical part of the course on the first week. Project RLA/06/901 sent two experts on behalf of the Project.

2.4 Before starting the workshop and as required by the organizers, the on-line courses of the PBN and airspace design training package were conducted. The on-line PBN courses -PBN Overview and PBN Airspace- are available at www.icao.int/pbn, *Web-based training*, including the *ilearn* package.

2.5 The workshop presented the participants with the best practices contained in the ICAO PBN and CCO/CDO Operations Manual, highlighting some examples and other experiences in complex terminal areas. As an example, the participants also had a chance to watch a fast-time simulation of a post-terminal area optimization scenario.

2.6 The Course/Workshop reinforced the knowledge of participants about airspace design, taking into account the PBN concept. The practical exercises chosen were quite appropriate because of their diversity, covering both en-route and TMA operations.

2.7 The ATM/COM/NAV/SUR capabilities of the States (Peru and Mexico), as well as traffic volume, fleet mix, equipage and traffic flow analyses, were taken into account for solving real operational problems in a selected airspace. A door-to-door approach was applied in a major traffic flow.

2.8 The participants were experts of the following SAM States: **Argentina, Brazil, Colombia, Paraguay** and **Peru** and two experts from Project RLA/06/901 who provided constant support to the working groups with their knowledge. A total of 8 experts of the SAM Region and 2 designers of South American airlines were trained. The terminal area selected was the Lima TMA, in Peru, in the SAM Region, and the Cancun TMA in the CAR Region.

2.9 Another important feature was the participation of procedure designers of the LAN Group, ATM experts of American Airlines, and European experts on fast-time simulation tools, who kindly offered their support and software.

2.10 The experts of these States had a chance to learn how to develop a project for the incorporation of the new airspace structure, with clear dates and milestones. The course duly qualified them to provide training on airspace design in their State and in the Region.

2.11 Last but not least, the excellent cooperation and coordination provided by Mr. Carlos Cirilo of IATA Montreal for the organization of this event should be acknowledged, together with the organization and coordination work done by our ATM/SAR colleague, Mr. Celso Figueiredo.

2.12 The participating SAM States have now the knowledge required to continue with their PBN implementation programmes, as well as the PBN Programme for the SAM Region, as shown by the high level of the instructors and their professional work in preparing for this event.

2.12 A survey on the status of PBN implementation in terminal areas and of the corresponding approach procedures in the Region has been sent to the States, in order to establish a baseline for defining short- and medium-term goals.

3. **Suggested action:**

3.1 The Meeting is invited to take note of the information provided herein and, if deemed appropriate, create an *ad-hoc* group to:

a) consider training completion, taking into account that not all the States participating in the Project could attend this Course/Workshop;

b) if it is decided to continue this process to support States in the redesign of their TMAs through the application of PBN, analyse the following options:

1) replicate this workshop at the Lima Regional Office for one week, with an intensive schedule, for those States that did not have a chance to attend the course/workshop in Miami, with experts of the Region, Project and IATA instructors, who have already offered their support to this initiative;

2) create a *support team* to assist a group of States that are aligned in their traffic flows, in the development of a basic design aimed at main international airports, which can be customised on site by State experts; and

c) revise the Action Plan to include proposals.

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