



SAM/IG/5
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**International Civil Aviation Organization
South American Regional Office**

**FIFTH WORKSHOP/MEETING OF THE SAM IMPLEMENTATION GROUP (SAM/IG/5)
REGIONAL PROJECT RLA/06/901**

Lima, Peru, 10 to 14 May 2010

Agenda Item 1: Monitoring to Conclusions and Decisions adopted by SAM/IG Meetings

**REVIEW OF THE STATUS OF COMPLIANCE OF CONCLUSIONS FORMULATED BY
SAM/IG MEETINGS AND PENDING ACTIVITIES**

(Presented by the Secretariat)

Summary	
This working paper has the intention that the Meeting may proceed with the revision on the application by SAM States of valid conclusions and pending activities formulated by SAM Implementation Group Workshop/meetings (SAM/IG).	
References:	
<ul style="list-style-type: none">- First Workshop/Meeting of the SAM Implementation Group (SAM/IG/1)- Second Workshop/Meeting of the SAM Implementation Group (SAM/IG/2)- Third Workshop/Meeting of the SAM Implementation Group (SAM/IG/3)- Fourth Workshop/Meeting of the SAM Implementation Group (SAM/IG/4)- PBN Roadmap- ATFM Roadmap- ATFM CONOPS	
ICAO Strategic Objectives:	<i>C - Environmental protection</i> <i>D - Efficiency</i>

1. Introduction

1.1 The Workshops/Meetings of the SAM Implementation Group (SAM/IG/1, 2, 3 and 4), have timely produced a series of agreements translated into conclusions, that indicate the actions to be carried out by the Implementation Group and/or States, as well as activities assumed by the Working Groups.

1.2 This working paper presents a revision of the valid conclusions, and pending activities of the SAM Implementation Group (SAM/IG) workshops/meetings.

2 Analysis

2.1 During SAM/IG/1, SAM/IG/2, SAM/IG/3 and SAM/IG/4 Meetings, some conclusions were formulated and a series of activities were adopted, oriented towards the implementation of different functions that will enable the Region to evolve towards the application of the global ATM operational concept.

2.2 The implementation programmes foreseen for the application of the global ATM Operational Concept in the SAM Region have been initially focused in the following:

- a) SAM ATS routes network optimization.
- b) Performance Based Navigation (PBN) both for en-route, terminal area and approach areas.
- c) Air Traffic Flow Management (ATFM).
- d) CNS systems improvements; and
- e) Automation.

SAM Region ATS Routes Network Optimization

2.3 As recalled, SAM/IG/4 Meeting felt that RNAV routes should not be implemented independently, taking into consideration that the ATS Routes Network Optimization Programme for the SAM Region has the main goal to achieve an inter-functional air traffic management system at disposal of users during flight phases, which complies with target safety levels agreed, provides economically optimum operations, be sustainable with regard to the environment, and meet the national aviation safety requirements.

2.4 In analyzing Agenda Item 2 of the RNAV-5 Action Plan, the Fourth Meeting was of the opinion that this task should be transferred to the SAM Routes Network Optimization Programme, keeping in mind that the necessary performance measures to implement version 1 of the SAM Routes Network must be established in the mentioned programme.

2.5 In support of the above, the First ATS Routes Optimization Workshop for the SAM Region (SAM ATSRO/1) was carried out at the ICAO SAM Regional Office, in Lima, Peru, from 1 to 5 March 2010. Seven SAM States attended the meeting, Argentina, Bolivia, Brazil, Panama, Paraguay, Peru and Uruguay, and one International Organization, IATA, making a total of 19 participants. The report of this workshop may be found at the ICAO SAM Office's website (www.lima.icao.int).

Performance-based navigation (PBN) both for en-route, terminal area and approach

2.6 The Fourth Meeting has also considered that RNAV-5 implementation for en-route operations, as well as STAR and SID in terminal areas and instrumental approach procedures for the main airports of the Region, applying RNAV/RNP, RNAV AR APCH and/or APV Baro/VNAV procedures design is part of the ATS routes network optimization programme and regional airspace.

2.7 On the other hand, one of the most important agreements is related with the dictation of procedural design courses, and to this end, and through a Special Implementation Project (SIP) financed by ICAO and the Regional Project RLA/06/901, two courses for RNAV/RNP and RNP AR APCH procedural design courses were carried out, in which experts in design of procedures from 9 States in the Region participated in each course. Also, and under the same methodology, a procedural design course on APV Baro/VNAV procedures design has been scheduled to be held in Lima, Peru, from 6 to 16 April 2010.

Air Traffic Flow Management (ATFM)

2.8 With regard to ATFM, it should be mentioned that SAM States are in different application phases. While some States have already implemented ATFM, others are at their initial phases. Notwithstanding, the objective pursued is that the Region, in a global manner make progress in ATFM implementation, following the ATFM Concept of Operations approved by GREPECAS, and also the ATFM Roadmap, approved during the SAM/IG/3 Meeting, and which is contributory to the ATFM CONOPS.

2.9 As a follow-up of conclusions and ATFM activities, the ATFM/TF Rapporteur presented the ATFM Manual to the SAM/IG/4 Meeting. Also, the meeting took note that a guidance document for the use of a common methodology for the estimate of airport capacity and ATC sectors was prepared. Such document presents information on different methodologies to carry out such estimate, and proposes the use of a specific methodology.

2.10 Likewise, the ATFM Manual was presented to the First Meeting of the CNS/ATM Subgroup (CNS/ATM/SG/1, Lima, Peru, 15 to 19 May 2010). This Meeting approved the Manual and noted that the same has been coordinated with ICAO Headquarters for its possible application at a worldwide level, formulated Draft Conclusion CNS/ATM/1-4 – *Adoption of the ATFM Manual for the CAR/SAM Regions*, which will be submitted to GREPECAS/16 Meeting for its approval and application.

Action Plans for CNS improvements

2.11 SAM/IG/4 Meeting, formulated Conclusion SAM/IG/4-7 - *Drafting of pending Action Plans for the Improvement of CNS Systems to meet Short- and Medium-Term Operational Requirements for En Route and Terminal Area Operations* for those SAM Region States that had not completed the preparation of the action plan for CNS improvements. To date, out of the three States that had not completed their action plans, only Colombia presented it, pending the action plans of French Guyana and Panama. The action plans received at the ICAO SAM Office Lima have been uploaded in the website: <http://www.lima.icao.int>, under CNS e-documents.

2.12 The SAM/IG/4 Meeting considered that the action plans for CNS improvements presented represent alive documents; therefore, they required frequent updating. To this end, the meeting formulated conclusion SAM/IG/4-8 - *Updating of the Action Plans for the improvement of CNS Systems to meet Short- and Medium-Term Operational Requirements for En Route and Terminal Area Operations*. This Conclusion is valid and States of the Region that have changed their action plans are encouraged to amend them.

2.13 With regard to AMHS systems interconnection, the SAM/IG/4 Meeting formulated Conclusion SAM/IG/4-9 – *Review of the guide for the interconnection of AMHS*. The guide was distributed to SAM Region States, for comments. Some States have sent their comments; therefore, it is considered approved and the Conclusion would be completed.

2.14 Bearing in mind that at the time new AMHS systems are implemented in Chile, Colombia and Peru, it is expected to complete this year the implementation works for interconnection systems implementation between Argentina-Chile, Argentina-Peru, Brazil-Colombia, Brazil-Peru, Chile-Peru and Colombia-Peru. Thus, Conclusion SAM/IG/4-10 - *AMHS interconnection between Argentina-Chile, Argentina-Peru, Brazil-Colombia, Brazil-Peru, Chile-Peru and Colombia-Peru*, would be considered completed.

2.15 With regard to the study of a SAM ATN network, it is expected that the action plan to carry out this study will be presented at the SAM/IG/5 Meeting. The initial ATN network should be composed by the current REDDIG and a ground-based optical fiber network.

2.16 The data base with information of estimated coverage for VOR and DME radio aids in the SAM Region, to attend navigation specifications, and especially navigation reversion in case of GNSS systems loss, will be presented at the SAM/IG/5 Meeting.

2.17 A surveillance and automation seminar is scheduled for 6 to 8 December 2010. The same includes the results of ADS B trials to be carried out in the SAM Region during the current year.

Automation

2.18 A Basic Course on Asterix and AIDC/OLDI has been scheduled to be held in Lima, Peru, from 5 to 17 July 2010 to support SAM Region States in the implementation of automated systems and their interconnection,

2.19 The SAM/IG/4 Meeting analysed and considered appropriate the strategy document for the implementation of amendment 1 to the 15th Edition of ICAO PANS ATM (Doc 4444) in the SAM Region. To this end, SAM/IG/4 Meeting encouraged States of the Region to initiate the preparation of their corresponding action plans for the implementation of the Amendment, following the actions indicated in the strategy document, and formulated Conclusion SAM/IG/4-11 - *Action Plan for the implementation of Amendment 1 to Doc. 4444*. The same is considered valid, since by 30 March 2010 no State of the Region had presented the required plan, and it is expected that States will present information on this plan during the SAM/IG/5 Meeting.

Summary of the status of implementation of tasks and conclusions

2.20 To show the above, the Chart shown in **Appendix A** to this working paper, which as revised by the SAM/IG/4 Meeting, has identified tasks to be developed and/or corresponding conclusion in the areas under analysis, the specific tasks that will lead to the compliance of the main task, which results are expected in each one of them, the finalisation dates, the persons responsible for its implementation, the supporting members for the task and finally in the last column, the status of execution of the same, and whenever necessary, for a better understanding, some explanatory comment has been included on the status of execution.

2.21 The Meeting should analyse each task identified and make the comments on specific tasks resulting, evaluate, and if necessary, modify the finalisation date, as well as the status of implementation of each specific task. The meeting may also wish to complete the chart shown in **Appendix B** to this working paper, showing the tasks in charge of the States, in order to make a follow-up of the same.

2.22 **Appendices C and D** of this working paper present a follow-up of the conclusions formulated in SAMIG meetings on CNS improvements and automation.

3 Suggested action

3.1 The meeting is invited to:

- a) request the RNAV Routes, PBN and ATFM Implementation Groups, to analyse the tasks in the corresponding areas in **Appendix A** to this working paper, and evaluate each one of the tasks and its status of compliance, and complete the information, as applicable;
- b) request States to complete the chart shown in **Appendix B** to this working paper, in order to follow-up on those tasks under the responsibility of their respective administrations;
- c) analyse the status of implementation of the conclusions on CNS and automation systems presented at **Appendices C and D**, respectively;
- d) if necessary, adopt the pertinent courses of action in relation to each one of such tasks; and
- e) analyse other considerations to this respect that the Meeting may deem pertinent.

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APPENDIX A

STATUS OF APPLICATION OF CONCLUSIONS AND/OR TASKS ORIGINATED IN SAM/IG MEETINGS

No.	Task to be developed	Specific tasks	Deliverables	Finalization date	Responsible	Supporting members to the task	Status of implementation
1. ATS Routes Implementation							
1-1 Prev. 1-4	That States examine: a) Impact of RNAV routes implementation in the airspace b) Aircraft fleet c) Air traffic services, and d) Establish pertinent coordination so as to enable integrated, harmonious and timely implementation of more direct RNAV routes.	Analyse airspace Evaluate national and international fleet Evaluate ATS Coordinate with authorities involved Coordinate with adjacent States, if necessary	Adequate information will be available to execute PBN action plan. A new ATS routes network will be available, based on RNAV with necessary PBN values, so as to respond to current requirements of airspace users	SAM/IG/7	States	RO/ATM RO/AIM	Valid
1-2 Prev 2-1	Route RNAV VOR CRR/VOR FNO (UM 661)	Coordinate the implementation. Issue AIC. Train personnel. Amend CAR/SAM ANP	Route implemented	TBD Information from Brazil is pending	States Secretariat	RO/ATM RO/AIM	Completed

No.	Task to be developed	Specific tasks	Deliverables	Finalization date	Responsible	Supporting members to the task	Status of implementation
1-3 Prev 2-1	UM 662 Guayaquil – Madrid	Coordinate the implementation. Issue AIC. Train personnel. Amend CAR/SAM ANP	Route implemented	Agreement with FAV Venezuela is pending	States Secretariat	RO/ATM RO/AIM	Completed
1-4 Prev 2-1	UM 527 Lima – Madrid	Coordinate the implementation. Issue AIC. Train personnel. Amend CAR/SAM ANP	Route implemented	Implementation agreement on 24 September 2009	States Secretariat	RO/ATM RO/AIM	Completed 24/09/09
1-5 Prev 2-1	Santiago-Miami	Coordinate the implementation. Issue AIC. Train personnel. Amend CAR/SAM ANP	Route implemented	Finalise coordination with States involved and IATA	States IATA Secretariat	RO/ATM RO/AIM	Completed Appendix A to Agenda Item 2, was modified. An analysis will continue within the SAM ATS routes network optimization programme.

No.	Task to be developed	Specific tasks	Deliverables	Finalization date	Responsible	Supporting members to the task	Status of implementation
2. Optimisation of ATS routes in the SAM Region							
2-1	<p>Conclusion SAM/IG/3-1 ATS Route Network Optimising in the South American Region</p> <p>That the ICAO SAM States take relevant action to follow the guidelines and meet the target dates established in the ATS Route Network Optimising Programme in the South American Region that appears in Appendix B to this part of the report. (Action adopted in SAM/IG/2) Optimize the airspace structure, reorganizing the red or implementing new routes based on strategic objectives of the airspace, taking into consideration “airspace modelling”, ATC simulations (accelerated time and/or real time), life trials, etc.</p>	<p>See action plan from the ATS routes network optimisation programme (Appendix B, Attachment 1 to SAM/IG/3 Meeting Report on Agenda Item 2)</p>	<p>Optimised ATS routes network</p>	<p>As per action plan</p>	<p>States RLA/06/901 IATA Regional Office</p>	<p>RO/ATM RO/AIM</p>	<p>Valid Conclusion and action adopted in SAM/IG/2 are oriented towards achieving the same results.</p> <p>The Action plan was updated (see Appendix B on Agenda item 2 of SAM/IG/4.</p>

No.	Task to be developed	Specific tasks	Deliverables	Finalization date	Responsible	Supporting members to the task	Status of implementation
2-2	Prepare the preliminary evaluation of airspace safety	Collect necessary data. Carry out safety assessment applying the methodology adopted.	PBN will be implemented showing that agreed safety levels will be kept or maintained	SAM/IG/5	CARSAMMA	RO/ATM	Valid SAM/IG/3 agreed that safety assessment should be based in a qualitative analysis through the use of SMS
2-3 Prev 2-15	Flexibility in special use airspace.	ANSPs will Establish coordination mechanism with military authorities Discuss matters such as location, altitudes, and validity periods of special use airspaces.	Obtain the efficient use of the airspace in terms coordinated and agreed between civil and military authorities, contemplating the benefit of all users	SAM/IG/4	States	N/A	Valid Global civil/military coordination forum (October 2009) A civil/military seminar/workshop will be required for 2001 in the SAM Region

No.	Task to be developed	Specific tasks	Deliverables	Finalization date	Responsible	Supporting members to the task	Status of implementation
2-4 Prev 2-16	Handling of air transport environmental problems	Obtaining of objective data over benefits that will be reached in terms of reduction of harmful gas emissions into the atmosphere.	Known data Availability of information required for monitoring of environmental protection.	SAM/IG/5	States	N/A	Valid. Check fuel savings estimate chart.
2-5	Prepare a measurable plan of performance, including gas emissions safety, efficiency, etc.	Check available tools to carry out this task Prepare a measurable plan	A measurable plan will be available which will permit a clear vision of the current and future status of performance regarding gas emissions, safety and efficiency	SAM/IG/5	RLA/06/901	RO/ATM	Valid. This task was included in the optimisation programme of the action plan.

No.	Task to be developed	Specific tasks	Deliverables	Finalization date	Responsible	Supporting members to the task	Status of implementation
2-6	<p>Conclusion SAM/IG/3-2 Data Collection That SAM States:</p> <p>a) collect data on all flights carried out in the SAM Region upper airspace (FL 245 or above) in national and international routes in the period 1-31 July 2009 and send them to the SAM Regional Office before 30 September 2009.</p> <p>b) use a sample consistent with the form and the instructions for completing the form, contained in Attachment 2 to Appendix B to this part of the report, using the EXCEL format.</p>	<p>The Secretariat should send a letter to States</p> <p>States should collect information as agreed.</p> <p>States should send information to the Regional Office.</p> <p>Information received must be assessed</p>	<p>A data base containing –</p> <ul style="list-style-type: none"> - movement in ATS routes per FIR - movement between pairs of cities, - peak hours - movement in TMA - FL most used - air operators and type of aircraft used. 	SAM/IG/5	Regional Office States RLA/06/901	RO/ATM RO/AIM CARSAMM A	<p>Completed Letter LT 2/3A.13-LN 3/24.6.1-SA364 dated 8 June 2009</p> <p>Except for French Guyana and Suriname, all States replied this survey.</p>
2-7	Determine entry/exit points of main TMAs in the SAM Region	<p>States shall determine entry/exit points of main TMAs</p> <p>Shall present information at SAM/IG/4</p>	Adequate information will be available to prepare Version 1 of ATS routes network	SAM/IG/4	States	RO/ATM	<p>Completed States informed that they will not carry out changes in their TMA.</p> <p>Except Brazil and Guyana shall reply on March 2010.</p>

No.	Task to be developed	Specific tasks	Deliverables	Finalization date	Responsible	Supporting members to the task	Status of implementation
2-8	Determine and obtain necessary tools for the development of Version 1 of routes network (aeronautical charts, specific software)	Evaluate necessary tools	Basic elements will be available for the development of Version 1 of ATS routes network	SAM/IG/5	SAM PBN RLA/06/901	RO/ATM	Valid Flight Star available.
2-9	Interphase between ATS routes network of the CAR and SAM Regions	Evaluate interphase options in the ATS routes network in the CAR and SAM Regions	Develop Version 1 of ATS routes network to respond to users requirements	SAM/IG/5	SAM PBN TF Regional Office	RO/ATM	Valid Harmonize lower boundary of CAR and SAM Routes.
2-10	Carry out a detailed study of the ATS routes network, with a view to prepare Version 1 of routes network (ref 2.2.2 of the Action plan of the ATS routes optimization programme of the SAM Region.	Carry out a workshop among SAM experts, in order to review and validate the study of item 2.2.5 of the action plan of the ATS routes optimization programme of the SAM Region.	Initial draft of proposal Version 1 of routes network ready	March 2010	RLA/06/901 Regional Office IATA	RO/ATM	Valid. Will be presented at the RCC RLA/06/901 to obtain support from 3 persons to make a study. Will invite IATA and operators to select one person to assist in the development of the task.

No.	Task to be developed	Specific tasks	Deliverables	Finalization date	Responsible	Supporting members to the task	Status of implementation
2-11	Prepare safety assessment required applying a qualitative methodology through the use of SMS (Ref 2.2.3 of the Action Plan – Programme for optimisation of the ATS Routes Network of the SAM Region)	Carry out safety assessment	Version 1 of ATS routes network will be implemented; demonstrating that agreed safety level will be maintained or improved.	October 2010	RLA/06/901	RO/ATM CARSAMMA	Valid

No.	Task to be developed	Specific tasks	Deliverables	Finalization date	Responsible	Supporting members to the task	Status of implementation
3. Implementation of Performance Based Navigation (PBN) in the SAM Region							
3-1 Prev. 1-1	<p>SAM/IG/1-1 CAR/SAM PBN Roadmap That ICAO SAM States, in implementing RNAV/RNP, take the pertinent actions to follow guidelines contained in the CAR/SAM PBN Roadmap as shown in Appendix C to this part of the report.</p>	<p>Shall facilitate implementation at a regional level</p> <p>Each State should comply with the actions agreed in the PBN Roadmap</p>	States will have a National en-route, TMA and APP PBN implementation Plan.	SAM/IG/3	States	N/A	Completed. States adopted the PBN roadmap.
3-2 Prev. 2-3	<p>Conclusion SAM/IG/2-1 PBN implementation Programme for en-route operations</p> <p>That the ICAO SAM States take appropriate actions to follow the guidelines and comply with the targets established in the PBN implementation for en-route operations, which is shown in Appendix B to this part of the Report.</p>	Execution of the action plan	RNAV 5 implemented in the SAM Region	SAM/IG/6	PBN focal points of the States.	RO/ATM	Valid.

No.	Task to be developed	Specific tasks	Deliverables	Finalization date	Responsible	Supporting members to the task	Status of implementation
3-3 Prev. 2-14	<p>Conclusion SAM/IG/2-4 PBN Implementation Model for TMA and Approach</p> <p>That States/Territories and International Organizations use the PBN Implementation Model for TMA and Approach in the preparation of their PBN implementation programmes for TMA and Approach, shown in Appendix E to this part of the Report.</p>	Prepare action plans for PBN implementation in TMA and approach	Action plans accompanying regional implementation	SAM/IG/4	PBN focal points of the States	RO/ATM	Valid.
3-4	Evaluate regulations for the use of GNSS, and if such were the case, proceed to its publication	Review information available.	All SAM States with regulations for the use of GNSS available	SAM/IG/3	Secretariat	RO/CNS	Completed

No.	Task to be developed	Specific tasks	Deliverables	Finalization date	Responsible	Supporting members to the task	Status of implementation
3-5 Prev. 1-1	<p>Conclusion SAM/IG/3-3 PBN Implementation National Plans</p> <p>That States of ICAO South American Region, present their PBN Implementation National Plans to SAM/IG/4 Meeting, using PBN Implementation Plan Model, shown in Appendix B of this part of the Report, as well as using the action plan models and information contained PBN Implementation Project TMA Operations and Short Term Approximations of SAM Region, approved by SAM/IG/2 Meeting.</p>	Prepare national PBN plans	All SAM States will have a PBN implementation plan aligned with the regional PBN plan	SAM/IG/4	States	RO/ATM	Valid 8 States in the SAM Region presented a draft national PBN plan for its harmonization. After the analysis, it was agreed that all PBN national plans must be submitted to the ICAO SAM Regional Office as of 31 December 2009.

No.	Task to be developed	Specific tasks	Deliverables	Finalization date	Responsible	Supporting members to the task	Status of implementation
3-6 Prev. 2-12	<p>Conclusion SAM/IG/2-3 Survey on the Fleet Navigation Capacity</p> <p>That States conduct a survey on the fleet navigation capacity, using, to that end, the form contained in Appendix D to this part of the Report, and send the information collected to the ICAO South American Regional Office, on the following dates:</p> <p>a) Aircraft operating commercial flights, which have more than 5 700 kg. of MTOW – 15 February 2009</p>	<p>States must carry out this survey.</p> <p>Secretariat should upload Form of SAM/IG/2 Appendix 2 on Agenda item 2.</p>	Fleet navigation capacity flying in the SAM Region	It was re-programmed and unified the date for delivery of literals a), b) and c) until 31 July 2009	<p>Focal points designated by States</p> <p>RO</p>	<p>RO/ATM RLA/99/901 RO/FLS</p>	<p>Completed regarding a)</p> <p>Valid. b) and c)</p>
3-6 Prev. 2-12	<p>b) Aircraft operating commercial flights, which have less than 5 700 kg. of MTOW – 15 May 2009;</p> <p>c) Other aircraft registered in the Region – 15 August 2009.</p>					<p>RO/ATM RLA/99/901 RO/FLS</p>	

No.	Task to be developed	Specific tasks	Deliverables	Finalization date	Responsible	Supporting members to the task	Status of implementation
3-7	Analyse aircraft fleet navigation capacity	Prepare data base	Aircraft fleet capacity analysed	SAM/IG/4	RLA/99/901	RO/ATM RLA/99/901 RO/FLS	Completed regarding a) Pending b) and c).
3-8 Prev. 2-13	Collect air traffic data to understand air traffic flows in a specific airspace.	States shall collect air traffic flow data	States will have a clear view of the type of traffic operating in a specific airspace	SAM/IG/4	States PBN focal points	RO/ATM RO/AIM	
3-9	Analyse communications, navigation means and surveillance (VOR, DME) ground to attend navigation specifications and reverse navigation	Prepare a CNS data base	Navigation specification and reverse navigation mode	SAM/IG/5	Regional Office SIP RLA/06/901	RO/CNS	Valid. CNS Task A partial report was presented at SAM/IG/4.

No.	Task to be developed	Specific tasks	Deliverables	Finalization date	Responsible	Supporting members to the task	Status of implementation
3-10	Design procedures training - RNP Approach with required authorization (AR)	Prepare SIP to have FAA instructors	Experts from States duly qualified in RNP, APCH AR matters	SAM/IG/4	Regional Office SIP RLA/06/901	Brazil/Chile RO/ATM	<p>Completed. RNAV/RNP courses were dictated: RNAV/RNP and ARNP AR APCH. Brazil and Chile provided the instructors. Support was obtained from a SIP and from Regional Project RLA/06/901 for the participation of the students.</p>

No.	Task to be developed	Specific tasks	Deliverables	Finalization date	Responsible	Supporting members to the task	Status of implementation
3-11 Prev. 2-10	<p>Conclusion SAM/IG/2-2 Initial AIC</p> <p>That States of ICAO SAM Region using as model the AIC presented in Appendix C to this part of the Report:</p> <p>a) publish in the AIRAC date of 9 April 2009 an Aeronautical Information Circular (AIC) informing the aeronautical community on their intention to implement RNAV 5 on 18 November 2010;</p> <p>b) reflect in this AIC the specific situations within the airspace under their jurisdiction.</p>	<p>Prepare AIC Publish AIC</p>	<p>Aeronautical community duly informed on States plans for RNAV 5 implementation.</p>	SAM/IG/5	States	<p>RO/ATM RO/AIM</p>	<p>Partially implemented: at 23 October 2009,</p> <p>French Guyana, Guyana, Panama, Suriname had not implemented yet.</p>

No.	Task to be developed	Specific tasks	Deliverables	Finalization date	Responsible	Supporting members to the task	Status of implementation
4. Standards and procedures for performance based navigation operations approval							
4-1	Analyse aircraft approval requirements and operators (pilots, dispatchers, and maintenance personnel) as established in PBN manual, and develop necessary documentation. Note: See Agenda Item 3, SAM/IG/2 and SAM/IG/3 Agenda Item 4.	Develop LAR with regard to PBN approvals	Guidelines at States disposal	SAM/IG/3 SAM/IG/4	Regional Project RLA/06/901	RO/ATM RLA/99/901 RO/FLS	<p>Valid In charge of RLA/99/901. CAs were completed on RNAV 10, RNAV 5, RNAV 1 and 2, Basic RNP 1, RNP APCH, RNP AR APCH and APV Baro VNAV.</p> <p>A new working plan has been established for the development of the CA on RNP4, RNP2 and RNP1, in progress.</p>

No.	Task to be developed	Specific tasks	Deliverables	Finalization date	Responsible	Supporting members to the task	Status of implementation
4-2	<p>Conclusion SAM/IG/3-4 Advisory Circulars CA 91-008, CA 91-009 and CA 91-010</p> <p>That States of the SAM Region:</p> <p>a) use as acceptable means of compliance in aircraft approval and exploiters for RNP APCH, RNP AR APCH and APV/baro-VNAV operations, Advisory Circulars CA 91-008, CA 91-009 and CA 91-010, shown in Appendices B, C and D, respectively to this part of the report; and</p> <p>b) publish the corresponding national regulations until 5 October 2009.</p>	<p>Develop the procedures related to aircraft and users approval regarding RNP, APCH, RNP AR APCH and APV/Baro-VNAV operations</p>	<p>National regulation ready for approval of aircraft and users</p>	<p>SAM/IG/4</p>	<p>States Regional Project RLA/06/901</p>	<p>RO/ATM RLA/99/901 RO/FLS</p>	<p>Valid. Replaced by Conclusion SAM/IG/4-2</p>

No.	Task to be developed	Specific tasks	Deliverables	Finalization date	Responsible	Supporting members to the task	Status of implementation
5-1 Prev 4-2	<p>Conclusion SAM/IG/2-6 ATFM Roadmap</p> <p>That,</p> <p>a) the ATFM Roadmap in Appendix B to this part of the Report be adopted, with the aim of providing orientation to the ATFM community with regard to ATFM applications to be implemented in the short and medium term in the SAM Region; and</p> <p>b) the ICAO Secretariat send the ATFM Roadmap to the GREPECAS ATFM Task Force for the analysis and actions deemed pertinent.</p>	States must adopt ATFM Roadmap sheet and inform on the intentions to national aeronautical community	<p>Aeronautical Community in knowledge of regional and national activities related to ATFM</p> <p>ATFM roadmap shall be presented to the ATFM/5 Meeting</p>	SAM/IG/3	<p>States ATFM Focal points</p> <p>ATFM Rapporteur</p>	ATFM Rapporteur/RO/ATM RO/AIM	Completed.
5-2	Carry out the tasks to be developed by Regional Project RLA/06/901. See SAM/IG/3 Report	Hire experts through Regional Project RLA/06/901	Tasks identified by the meeting to be executed by Regional Project RLA/06/901 carried out.	SAM/IG/4	RLA/06/901 Experts	JF/OQ	Completed
5-3 Prev 4-5	Publish initial AIC ATFM using the model prepared by SAMIG	States publish AIC	Community informed on States plans regarding ATFM		States	JF	Completed. Except for Suriname.

No.	Task to be developed	Specific tasks	Deliverables	Finalization date	Responsible	Supporting members to the task	Status of implementation
5-4	ATFM Manual – First Part	Continue developing ATFM manual	States will have a manual for its harmonized application in the SAM Region	SAM/IG/4	RLA/06/901 Expert	RO/ATM RO/AIM	Completed (SAM/IG/4-WP/10)
5-5	<p>Conclusion SAM/IG/3-5 Runway capacity of an international airport and ATC associated sector</p> <p>SAM States are encouraged to carry out at least an exercise to determine the runway capacity of an international airport and ATC sector, associated or another one selected for each State, to present the results to the SAM/IG/4 Meeting, providing the following information:</p> <ul style="list-style-type: none"> a) Amount of personnel trained for the exercise b) Methodology applied c) Result of the exercise, providing the declared capacity for each runway and ATC selected sector. d) Identification of problems found in the methodology applied. 	Carry out estimate capacity in an airport and its associated ATC sector	States shall put into practice the course dictated on this matter and shall obtain the necessary experience to evaluate capacity at a national level.	SAM/IG/4	States	RO/ATM	Valid Bolivia, Brazil, Colombia, Paraguay, Peru and Venezuela presented its preliminary exercise.

No.	Task to be developed	Specific tasks	Deliverables	Finalization date	Responsible	Supporting members to the task	Status of implementation
5-6	Guidance document for the application of a common methodology for the estimation of airport capacity and ATC sectors for the SAM Region	Prepare a guidance document for the application of a common methodology for the estimation of airport capacity and ATC sectors for the SAM Region	States will have a guide for the application of a common methodology for the estimation of airport capacity and ATC sectors for the SAM Region	SAM/IG/4	RLA/06/901 Expert	JF/AO	Completed (SAM/IG/4-WP/05)

APPENDIX B

FOLLOW-UP OF CONCLUSIONS AND PENDING TASKS OF THE SAM/IG MEETING

Conclusión/Tarea Conclusion/Task	ARG	BOL	BRA	CHI	COL	ECU	FGY	GUY	PAN	PAR	PER	SUR	URU	VEN	OBSERVACIONES REMARKS
1-1 SAM/IG/1-1 CAR/SAM PBN Roadmap That ICAO SAM States, in implementing RNAV/RNP, take the pertinent actions to follow guidelines contained in the CAR/SAM PBN Roadmap as shown in Appendix C to this part of the report.	YES	YES	YES	YES	YES	O/G	--	YES	O/G	YES	O/G	YES	YES	YES	
1-1 That States examine: a) Impact of RNAV routes implementation in t he airspace Aircraft fleet, Air traffic services, and b) Establish pertinent coordination so as to enable integrated, harmonious and timely implementation of more direct RNAV routes.	O/G	O/G	O/G	O/G	O/G	O/G	--	O/G	O/G	O/G	O/G	O/G	YES	O/G	COL: June ECU: Local coordination with corresponding area. PAR: SAMIG 5 PER: Dec 2009 VEN: Mar.2010
2-1 Implementation of RNAV routes	YES	YES	YES	YES	YES	YES	--	YES	YES	YES	O/G	YES	YES	O/G	ECU: Missing pronouncement of VEN in regard of the effective date for the implementation of the route Guayaquil / Madrid.

Conclusión/Tarea Conclusion/Task	ARG	BOL	BRA	CHI	COL	ECU	FGY	GUY	PAN	PAR	PER	SUR	URU	VEN	OBSERVACIONES REMARKS
<p>2-3 Conclusion SAM/IG/2-1 PBN implementation Programme for en-route operations That the ICAO SAM States take appropriate actions to follow the guidelines and comply with the targets established in the PBN implementation for en-route operations, which is shown in Appendix B to this part of the Report.</p>	YES	YES	YES	YES			--	YES	YES	YES	O/G	YES	YES	YES	
<p>2-10 Conclusion SAM/IG/2-2 Initial AIC That States of ICAO SAM Region using as model the AIC presented in Appendix C to this part of the Report: a) publish in the AIRAC date of 9 April 2009 an Aeronautical Information Circular (AIC) informing the aeronautical community on their intention to implement RNAV 5 on 18 November 2010; b) reflect in this AIC the specific YESituations within the airspace under their jurisdiction.</p>	YES	YES	YES	YES	YES	YES	--	O/G	O/G	YES	YES	O/G	YES	YES	GUY: Oct.22,2009 SUR: Will inform Nov.15,2009

Conclusión/Tarea Conclusion/Task	ARG	BOL	BRA	CHI	COL	ECU	FGY	GUY	PAN	PAR	PER	SUR	URU	VEN	OBSERVACIONES REMARKS
<p>2-12 Conclusion SAM/IG/2-3 Survey on the Fleet Navigation Capacity That States conduct a survey on the fleet navigation capacity, using, to that end, the form contained in Appendix D to this part of the Report, and send the information collected to the ICAO South American Regional Office, on the following dates:</p> <ul style="list-style-type: none"> a) Aircraft operating commercial flights, which have more than 5 700 kg. of MTOW – 15 February 2009; b) Aircraft operating commercial flights, which have less than 5 700 kg. of MTOW – 15 May 2009; c) Other aircraft registered in the Region – 15 August 2009. 	YES	YES	YES	YES	YES	YES	--	YES	O/G	NO	YES	O/G	YES	YES	
<p>2-13 1.2 1.2 Collect air traffic data to understand air traffic flows in a specific airspace</p>	YES	NO	YES	YES	YES	YES	--	YES	O/G	YES	YES	YES	YES	YES	

Conclusión/Tarea Conclusion/Task	ARG	BOL	BRA	CHI	COL	ECU	FGY	GUY	PAN	PAR	PER	SUR	URU	VEN	OBSERVACIONES REMARKS
2-14 Conclusion SAM/IG/2-4 PBN Implementation Model for TMA and Approach That States/Territories and International Organizations use the PBN Implementation Model for TMA and Approach in the preparation of their PBN implementation programmes for TMA and Approach, shown in Appendix E to this part of the Report	YES	O/G	O/G	YES	O/G	YES	--	YES	O/G	YES	O/G	O/G	YES	O/G	ECU: Developing PER: SAM/IG/4 SUR: Nov.15, 2009 VEN: March 2010
2-15 Flexibility in special use airspace.	O/G	O/G	O/G	OG	O/G	O/G	--	O/G	N/A	O/G	YES	O/G	YES	O/G	CHI: They have a committee responsible for these subjects ECU: Will require information at SAM/IG/3 PAN: Panama does not have army nor air force. VEN: Undetermined
2-16 Handling of air transport environmental problems	O/G	NO	O/G	YES	NO	NO	--	O/G	O/G	O/G	O/G	O/G	YES	NO	ECU: Example: Chile SAM/IG/5 PER: SAM/IG/5 BOL: SAMIG/6

Conclusión/Tarea Conclusion/Task	ARG	BOL	BRA	CHI	COL	ECU	FGY	GUY	PAN	PAR	PER	SUR	URU	VEN	OBSERVACIONES REMARKS
<p>3-1 Conclusion SAM/IG/2-5 Advisory Circular CA 91-002 and Job Aid for Aircraft and operators RNAV 5 operational approval That States of ICAO South American Region: a) Use as an acceptable compliance source in aircraft and operators RNAV 5 operational approval Advisory Circular CA 91-002 and Job Aid for Aircraft and operators RNAV 5 operational approval, presented in Appendices A and B, respectively, to this part of the Report. b) Publish respective national regulations up to April 2009.</p>	YES	NO	O/G	O/G	YES	O/G	--	O/G	O/G	NO	O/G	O/G	O/G	O/G	<p>ECU: Coord. with OPS PAR: Developing PER: Dec 2009</p>
<p>4-2 Conclusion SAM/IG/2-6 ATFM Roadmap That, a) the ATFM Roadmap in Appendix B to this part of the Report be adopted, with the aim of providing orientation to the ATFM community with regard to ATFM applications to be implemented in the short and medium term in the SAM Region;</p>	O/G	O/G	O/G	O/G	YES	O/G	--	O/G	O/G	YES	O/G	O/G	YES	O/G	<p>ECU: ATFM PER: Dec.2009 VEN: Jul.2010</p>

Conclusión/Tarea Conclusion/Task	ARG	BOL	BRA	CHI	COL	ECU	FGY	GUY	PAN	PAR	PER	SUR	URU	VEN	OBSERVACIONES REMARKS
and b) the ICAO Secretariat send the ATFM Roadmap to the GREPECAS ATFM Task Force for the analyses and actions deemed pertinent															
4-5 Manual ATFM AIC	YES	YES	N/A	O/G	YES	YES	--	YES	O/G	O/G	YES	O/G	YES	O/G	ECU: AIC published COL: June GUY: 22 Oct 2009 PAR: In Publishing process URU: AIC published 07 May 2009 VEN: Mar.2010

Instrucciones para el llenado del formulario - Instructions to fill in the form

- Cumplida: colocar **SÍ** en el casillero correspondiente. / Accomplished: place **YES** in the corresponding box
- En ejecución: colocar **O/G** (on going) e indicar en “observaciones” la fecha prevista de término./ In execution: place **O/G** (on going) and indicate under “remarks” the estimated deadline
- No cumplida: colocar **NO** en el casillero correspondiente y, de ser el caso, hacer comentarios en columna de observaciones/ Not complied: place **NO** in the corresponding box and if such were the case, make comments in the remarks column

APPENDIX C

FOLLOW-UP TO CONCLUSIONS ON CNS IMPROVEMENTS

Conc/Dec Strategic Objective	Title of Conclusion/ Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Status	Deliverable	Target date
SAM/IG 1-5 D	Adoption of Action Plan Models for the improvement of communications and surveillance systems for en-route and terminal area operations	When carrying out activities for the improvement of communications and surveillance systems for en-route and terminal area operations, the action plan models are to be taken into account for the improvement of ground-air, ground-ground communications and surveillance systems being presented as Appendices D, F and I to the report of this agenda item.	Implementation of action plan for improvement of ground-air communications.	SAM States/ Territories and ICAO SAM Regional Office	Valid	Improvement of the communications, navigation and surveillance systems	Mar 2011
			Implementation plan for improvement of ground-ground communications systems.		Valid		Dec 2012
			Implementation plan for improvement of surveillance systems.		Valid		Dec 2015
SAM/IG/4-7	Drafting of pending Action Plans for the Improvement of CNS Systems to meet Short- and Medium-Term Operational Requirements for En Route and Terminal Area Operations	That the aeronautical administrations of Colombia, French Guiana and Panama draft their respective action plans for the improvement of CNS systems, following the model action plan presented at the SAM/IG/3 meeting (Appendix A to agenda item 6) and send them to the ICAO SAM Regional Office no later than 30 November 2009 .	From the three States which have pending the preparation of the action plans for CNS improvements, only Colombia sent it to the ICAO South American Office. States which have not yet sent their action plans, have been reported, and therefore they should send their plans as soon as they complete them	SAM States/ Territories	Valid	National Action plan for CNS improvements	30 November 2009

Conc/Dec Strategic Objective	Title of Conclusion/ Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Status	Deliverable	Target date
SAM/IG/4-8	Updating of the Action Plans for the improvement of CNS Systems to meet Short- and Medium-Term Operational Requirements for En Route and Terminal Area Operations	That SAM States, with the aim of keeping updated the Action Plans for the improvement of CNS Systems to meet Short- and Medium-Term Operational Requirements for En Route and Terminal Area Operations, present their updated versions twice a year, if any, in the dates corresponding to the holding of SAM/IG meetings.	States have taken note of the need to update action plans. It is expected that during the SAM/IG/5 Meeting, the corresponding updating is presented.	SAM States/Territories ICAO SAM Regional Office	Valid	Action plans for SAM CNS national improvements updated	Continuou s
SAM/IG/4-9	Review of the guide for the interconnection of AMHS	That SAM States review the guide for the interconnection of AMHS in Appendix A to this part of the Report and, once reviewed, send their comments to the ICAO SAM Regional Office no later than 15 December 2009 .	Some States of the Region made comments on the guidance document. The guidance document for AMHS systems interconnection is considered approved	SAM States/Territories ICAO SAM Regional Office	Completed	Guidance material for AMHS systems interconnection	15 December 2009
SAM/IG/4-10	AMHS interconnection between Argentina-Chile, Argentina-Peru, Brazil-Colombia, Brazil-Peru, Chile-Peru and Colombia-Peru	The respective administrations are urged to operationally interconnect AMHS between Argentina-Chile, Argentina-Peru, Brazil-Colombia, Brazil-Peru, Chile-Peru and Colombia-Peru, and that, to that end, they:	SAM States involved have taken note of the preparation of the MoU for AMHS systems interconnection and it is expected to complete the preparation and approval of the same during the SAM/IG/5 Meeting	SAM States/Territories ICAO SAM Regional Office	Valid	MoU for the implementation of AMHS systems between Argentina-Chile, Argentina-Peru, Brazil-Colombia, Brazil-Peru, and Colombia-Peru	15 December 2009

Conc/Dec Strategic Objective	Title of Conclusion/ Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Status	Deliverable	Target date
		<p>a) Use the model Memorandum of Understanding (MoU) shown in Appendix B to this part of the report;</p> <p>b) Complete the information in the MoU, taking into account the action plan for AMHS interconnection in Appendix C to this part of the Report;</p> <p>c) Present the MoU to the ICAO SAM Regional Office by 15 December 2009; and</p> <p>d) Sign the model MoU at the SAM/IG/5 Meeting.</p>					

APPENDIX D

FOLLOW-UP TO CONCLUSIONS ON AUTOMATED SYSTEMS

Conc/Dec Strategic Objective	Title of Conclusion/ Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Status	Deliverable	Target date
SAM/IG 3-8 D	Preparation of specific implementation plans for the interconnection of automated systems	<p>That States of the SAM Region start the development of specific plans for the implementation of automated systems interconnection, considering the implementation dates indicated in Regional Interconnection Plan for Automated Systems in adjacent ACCs, specified in Appendix B of this part of the Report, and information contained in the following documentation:</p> <p>a) Memorandum of Understanding for the implementation of automated systems interconnection between two States having adjacent ACCs, Interface Control Document (ICD) for data communication between ATS dependencies in Caribbean and South American Regions (CAR/SAM ICD);</p> <p>b) Interface control document (ICD) for data communications between ATS units in the Caribbean and South American Regions</p>	To date, as follow-up to the action plan for the implementation of automated systems between SAM pairs of States, Argentina-Uruguay, Argentina-Brazil and Brazil-Uruguay have drafted and signed MoUs for the interconnection of their automated systems.	SAM States	Valid	Memorandum of Understanding (MoU) between SAM pairs of States for the interconnection of automated systems	2012

Conc/Dec Strategic Objective	Title of Conclusion/ Decision	Text of Conclusion/Decision	Follow-up Action	To be initiated by	Status	Deliverable	Target date
		(CAR/SAM ICD); c) System Interface Control Document (SICD); and d) Regional interconnection initial plan for ACC automated systems. e) Preliminary reference system/ subsystem specification for the air traffic control automation system (SSS).					
SAM/IG-4-11	Action plan for the implementation of Amendment 1 to Doc. 4444	That SAM States, taking into account the actions indicated in the strategy document for the implementation of Amendment 1 to ICAO PANS ATM, 15th Edition (Doc. 4444), contained in Appendix D to this part of the Report, draft their respective action plans for the implementation of the amendment, and send them to the ICAO SAM Regional Office by 30 March 2010, for their presentation at SAM/IG/5 Meeting.	States of the Region have been reported with regard to the action plans for the implementation of the amendment	SAM States	Valid	National Action plans for implementation of Amendment 1 to the 15 th Edition of the PANS ATM (Doc 4444).	30 March 2010