



**Agenda Item 1: Review of the South American ATS Route Network Optimization Programme and of PBN implementation improvements initiated at the SAMIG/21 meeting**

**SAM PBN PROJECT AND ATSRO ACTION PLAN**

(Presented by the Secretariat)

<b>SUMMARY</b>	
This working paper presents information on the initiative to update the GREPECAS SAM PBN Project, and also presents a revision of the ATS route network optimisation programme.	
<b>References:</b>	
<ul style="list-style-type: none"><li>• ATS/RO meeting reports</li><li>• SAM/IG meeting reports</li><li>• GREPECAS/18 report</li><li>• SAM PBN CONOPS - Period 2018-2020</li></ul>	
<b>ICAO strategic objectives:</b>	<i>A - Safety</i> <i>D – Economic development of air transport</i> <i>E – Environmental protection</i>

**1 Background**

1.1 The GREPECAS/18 meeting emphasised the need for better coordination of efforts and projects between the CAR and SAM Regions, and following the recommendation of the Secretariat, agreed that both groups (RASG-PA and GREPECAS) should adopt a common and mutually recognised project management approach.

1.2 Based on the guidance provided by GREPECAS/18, project management techniques shall be applied to all CAR and SAM projects. Accordingly, the SAMIG/21 meeting was presented with a proposal to update the SAM PBN project, aimed at applying such management techniques and incorporating performance indicators. This update proposal is being coordinated and refined through teleconferences with SAMIG PBN focal points.

1.3 The ATSRO/8 meeting reviewed the ATSRO Action Plan, which includes activities for the implementation of Version 4 and 5 of the optimised route network.



## APPENDIX A

## ATSRO ACTION PLAN

Activity	Start	End	Responsible party	Remarks
<b>1. SAM route network</b>				
<b>1.1. Version 4 of the Route Network – RNAV-5</b>				
<p>1.1.1. Perform detailed study of the SAM ATS Route Network, with a view to developing Version 04 of the Route Network (TMA - Arrival/Departure/RNAV-5 route segment interface), including:</p> <ul style="list-style-type: none"> <li>• Prepare work plan for the participation of hired/seconded experts from States/international organisations who would support the preparation of the preliminary draft.</li> <li>• Determine tools required to conduct the study (aeronautical charts, specific software).</li> <li>• Analyse traffic data in order to understand traffic flows.</li> <li>• Analyse fleet navigation capacity.</li> <li>• Prepare the preliminary draft of Version 04 of the SAM route network, including control sectors, TMA interface, etc.</li> <li>• Study the feasibility/need to assess the preliminary design using “<i>airspace modelling</i>” tools and fast-time ATC simulation.</li> <li>• Propose the initial draft of the Proposal of Amendment to the CAR/SAM ANP.</li> </ul>	SAM/IG/18 (October 2016)	June 2017	SAM/PBN/IG (Project RLA/06/901) States IATA IFALPA ATM RO	<ul style="list-style-type: none"> <li>• Hiring/“secondment” of 2 experts for 3 weeks in order to prepare a preliminary draft.</li> </ul> <p>NOTE: PBN implementation in SAM TMAs progressed during 2016 and 2017. Examples: Argentina (Baires in process), Brazil, Colombia and Paraguay.</p> <p style="text-align: center;"><b>FINALISED</b></p>

Activity	Start	End	Responsible party	Remarks
<ul style="list-style-type: none"> <li>• Prepare the Plan for the Optimisation of Restricted, Prohibited, Danger and Reserved Use Zones of the SAM Region.</li> <li>• Calculate fuel/CO<sub>2</sub> savings using IFSET to validate the preliminary design of the SAM airspace structure, covering routes/SIDs/STARs.</li> <li>• Prepare “SAM Route Network, Version 04” document.</li> <li>• Prepare working paper for the ATSRO/8 meeting.</li> </ul>				
<p>1.1.2. Hold the Eighth Workshop/Meeting on SAM ATS Routes Optimisation, with the purpose of reviewing Version 04 of the Route Network.</p> <p>Includes:</p> <ul style="list-style-type: none"> <li>• Review draft Version 04 of the ATS Route Network. Define implementation process.</li> </ul>	SAM/IG/18 (October 2016)	ATSRO/8 (September 2017)	Project RLA/06/901 States ATM RO	<b>FINALISED</b>
<p>1.1.3. Joint work with States for the conduction of the risk analysis of the SAM Route Network, Version 04.</p>	ATSRO/8 (September 2017)	ATSRO/9 (July 2018)	Project RLA/06/901 States ATM RO	<ul style="list-style-type: none"> <li>• Will be done through teleconferences and distribution of guidance documents, as required.</li> </ul>
<p>1.1.4. Analysis and incorporation in SAM implementation activities of route optimisation initiatives originated in the CAR Region and coordinated with NACC Office.</p>	III NACC PBN (September 2017)	ATSRO/9 (July 2018)	Project RLA/06/901 States ATM RO	<ul style="list-style-type: none"> <li>• Will be done through teleconferences. Will include coordination at the SAM/IG/21 meeting (May 2018).</li> </ul>

Activity	Start	End	Responsible party	Remarks
1.1.5. Conduct the Ninth Workshop/Meeting on SAM ATS Route Network Optimisation, with the purpose of monitoring the implementation of Version 04 of the Route Network and adjusting the publication and implementation programme. Initiatives coordinated with NACC Office will be included.	ATSRO/8 (September 2017)	ATSRO/9 (July 2018)	Project RLA/06/901 States ATM RO	
1.1.6. NAM-CAR-SAM inter-regional coordination to define implementation of exclusionary RNAV-5 airspace above FL245.	TBD	TBD	SAM Regional Office NACC Regional Office	
<b>1.2. Version 05 of Route Network</b> <ul style="list-style-type: none"> <li>○ RNAV-5 Regional and Inter-regional upper airspace</li> <li>○ RNAV-5 for airspace below FL245</li> <li>○ RNP2 for Continental and Oceanic airspaces</li> </ul>				
1.2.1. Perform study to develop Version 05 of Route Network, considering implementation of RNAV-5 and RNP2 navigation specifications in selected airspaces. It includes: <ul style="list-style-type: none"> <li>• Prepare work plan for the participation of hired/seconded experts and experts from the States/International Organisations to support the preparation of the preliminary draft.</li> <li>• Define the tools required to conduct the study (aeronautical charts, specific software).</li> <li>• Analyse traffic data. Study of regional and inter-regional upper airspace route network, optimisation and replacement of conventional routes.</li> </ul>	ATSRO/8 (September 2017)	SAMIG/22 (2018)	Project RLA/06/901	2 experts will be hired for 3 weeks.  Tentative date: September 2018

Activity	Start	End	Responsible party	Remarks
<ul style="list-style-type: none"> <li>• Analyse interfaces to TMAs or aerodromes involved. Select airspaces for RNAV-5 application in regional route.</li> <li>• Analyse traffic data for airspace involving regional routes below FL245. Analyse fleet navigation capacity, with emphasis on general aviation.</li> <li>• Analyse traffic data for RNP2 oceanic airspace. Analyse fleet navigation capacity.</li> <li>• Prepare the Plan for Optimisation of Restricted, Prohibited, Danger and Reserved Use Zones of the SAM Region.</li> <li>• Calculate fuel/CO<sub>2</sub> savings using IFSET to validate the preliminary design of the SAM airspace structure, covering routes/SIDs/STARs.</li> <li>• Develop deliverable “Version 05 of SAM Route Network”, including harmonised implementation plan.</li> <li>• Prepare working paper for SAM/IG/23.</li> </ul>				
1.2.2. Review preliminary deliverable of Version 05 of Route Network. Analyse and propose changes to harmonised implementation plan, as required.	SAM/IG/23 (2019)	SAM/IG/23 (2019)	Project RLA/06/901 States ATM RO	
<p>1.2.3. Hold the Tenth Workshop/Meeting on SAM ATS Routes Network Optimisation, to review Version 05 of the Route Network. It includes:</p> <ul style="list-style-type: none"> <li>• Review draft Version 05 of the ATS Route Network. Define process according to harmonised implementation plan for RNP2 and selected airspaces below FL245, respectively.</li> </ul>	SAM/IG/23 (2019)	ATSRO/10 (2019)	Project RLA/06/901 States ATM RO	

<b>Activity</b>	<b>Start</b>	<b>End</b>	<b>Responsible party</b>	<b>Remarks</b>
1.2.4. Perform risk analysis of Version 05 of the SAM ATS Route Network, coordinating such activities with the States involved.	ATSRO/10 (2019)	TBD	Project RLA/06/901 States ATM RO	1 expert will be hired for 2 weeks.
1.2.5. Hold the Eleventh Workshop/Meeting on SAM ATS Route Network Optimisation, with the purpose of monitoring implementation of Version 05 of the Route Network and adjusting the publication and implementation programme.	TBD	TBD	Project RLA/06/901 States ATM RO	

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