



**Agenda Item 2: Optimisation of the SAM airspace**

**FOLLOW-UP TO PBN IMPLEMENTATION**

(Presented by the Secretariat)

<b>SUMMARY</b>	
This working paper presents the evolution of PBN implementation activities and other implementations related to SAM airspace optimisation, so that States may identify those activities on which they need to focus their efforts in order to meet the defined goals.	
<b>References:</b>	
– SAM/IG meetings – ATS/RO meetings – PANS-OPS workshops – GREPECAS/18 meeting	
<b>ICAO strategic objectives:</b>	<i>A – Safety</i> <i>B.- Air navigation capacity and efficiency</i> <i>E – Environmental protection</i>

**1. Background**

1.1 Pursuant to GREPECAS Decisions 16/45 and 16/47, the “*Performance-based navigation (PBN)*” programme was structured with the following associated projects:

- a) Project A1 - PBN operational implementation; and
- b) Project A2 - Air navigation systems in support of PBN.

1.2 The GREPECAS/18 meeting (Dominican Republic, 9-14 April 2018) conducted a detailed analysis of PBN programme implementation in the CAR and SAM Regions, highlighting that a key to the success of projects was compliance with State commitments within the context of actions defined by the working groups, and the participation of decision-makers.

1.3 GREPECAS/18 noted that the commitments assumed under the Declarations of Bogota and Port-of-Spain had been an effective element of integration and commitment towards air navigation implementation in the two Regions, without forgetting that these Declaration had to be seen as a political guide agreed by States in consensus.

1.4 In this regard, GREPECAS/18 urged States to strengthen interregional coordination and to enhance State processes for publication and implementation of new routes or optimized routes within the agreed timelines, in line with the amendment to the regional e-ANP.

## 2. Discussion

2.1 By October 2019, the status of PBN operational implementation is as follows:

### *PBN en route*

2.2 In accordance with the activities scheduled at the RCC/12 Meeting of RLA/06/901, Version 5 of Route Network was developed. Based on this version, the ATSRO/10 meeting held in Bogota in June 2019 approved a number of initiatives for the optimisation and implementation of RNAV-5 Routes. The **working paper WP/2.2** analyses the progress of coordination for the implementation of the optimized route version, at regional and interregional level (CAR /SAM).

### *PBN in TMAs*

2.3 SAM States continue to work to meet the PBN-based TMA redesign implementation dates. The status of planning is shown **in the Appendix A**, to be commented upon and updated by the States concerned.

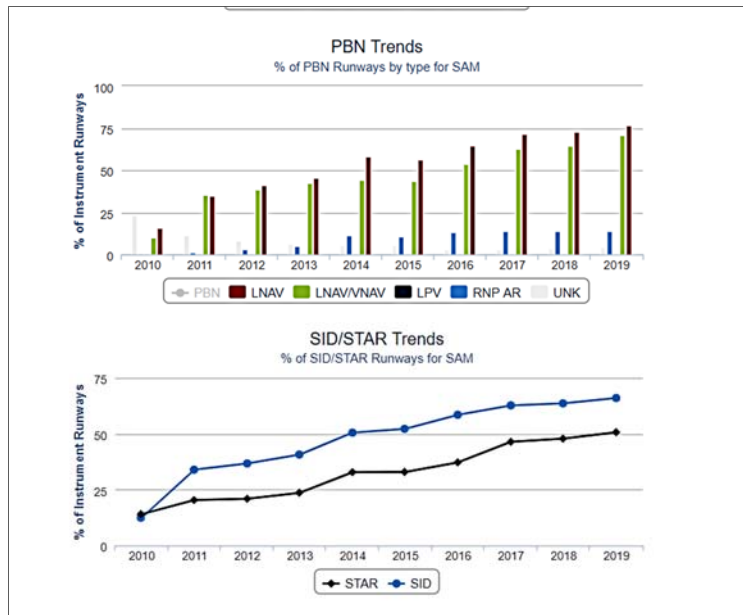
### *Implementation of SIDs, STARs, and PBN approach procedures*

2.4 The ICAO iSTARS 3.0 website shows the status of implementation in 13 SAM States. Out of a total of 215 runway thresholds (in May 2019, iSTARS registered just 213 thresholds) in the Region, PBN SID implementation reaches 66%, and PBN STAR implementation reaches 50.7%.

2.5 Regarding the implementation of PBN approaches pursuant to Resolution A37-11, out of a total of 215 runway thresholds (international airports), approach procedures with APV vertical guidance and/or LNAV minima only have been implemented in 185, reaching 87.9%, **accounting for 4.2% progress** with respect to 83.7% recorded in November 2018.

2.6 See details of the growing trend (2010-2019) of PBN regional implementation in Graph 1, in the ICAO portal:

<https://portal.icao.int/space/Pages/PBN-Status.aspx>



Graph 1.- PBN implementation trends

### Details on PBN Implementation by State for SAM

Show 25 entries Search:

State	PBN Runways	Instrument Runways	PBN Runways (%)
Argentina	31	35	88.6
Bolivia (Plurinational State of)	4	6	66.7
Brazil	67	69	97.1
Chile	19	20	95
Colombia	19	23	82.6
Ecuador	4	6	66.7
Guyana	2	2	100
Panama	8	9	88.9
Paraguay	4	4	100
Peru	6	12	50
Suriname	2	2	100
Uruguay	7	11	63.6
Venezuela (Bolivarian Republic of)	16	16	100

Graph 2.- PBN implementation for 13 states, according A37-11

#### PANS OPS/4 workshop results

2.7 The PANS OPS/4 workshop was held from 21 to 25 de October 2019. The summary of the workshop is presented in the following link;

[http://www.icao.int/SAM/Pages/ES/MeetingsDocumentation\\_ES.aspx?m=2019-06901-PANSOP4](http://www.icao.int/SAM/Pages/ES/MeetingsDocumentation_ES.aspx?m=2019-06901-PANSOP4)

*Actions to optimise longitudinal separation between aircraft en route*

2.8 Brazil has started standard implementation of the 20NM separation for aircraft entering its FIRs. This is achieved through coordination with the adjoining ACC by transferring aircraft inbound the FIRs of Brazil.

2.9 In this regard, each State must report the status of implementation of longitudinal separation minima between ACCs, with a view to updating the implementation follow-up table and revising the respective 2018-2019 action plan shown in **Appendix B** to this paper.

*Project A2 - Air navigation systems in support of PBN*

2.10 No progress has been made in the implementation of GBAS technology under study by Brazil. It was noted that the SLS-4000 station could be configured for use in Brazil for precision approaches only between 6 a.m. and 6 p.m. (local time), using the CONUS (Continental United States) risk model, with possible discontinuities during operation due to satellite layout. It was noted that Brazil was considering this activity for the long term.

2.11 Argentina reported in SAMIG/23 the progress made by ANAC and INVAP S.E. on development of GBAS technology, placed in Bariloche.

**Activities and resources required for the implementation of the SAM Airspace Optimisation Action Plan, with the support of Project RLA/06/901***Activities and resources approved for 2019 with the support of Project RLA/06/901*

2.12 The Twelfth meeting of the Coordination Committee of Project RLA/06/901 (RCC/12) approved the activities to be carried out in 2019 in support of SAM airspace optimisation, which have been scheduled/executed as follows:

- **(Completed)** Development of draft Version 05 of the SAM Route Network – Deliverable: SAM Route Network Version 05 document. (February 2019)
- **(Completed)** Seminar on the organisation of flight procedure design services (IFPD). – to address the implementation of the IFPD service in accordance with ICAO Annex 11 and LAR 211. Aimed at strengthening the capacity of the Region to sustain PBN implementation over time. (April 2019)
- **(Completed)** Development of a catalogue for planning and monitoring the implementation of regional ATS routes and flight procedures. Support for the first updating phase of the ICARD database. (April 2019)
- **(Completed)** ATSR0/10 - Follow-up to the implementation of Version 05 of the SAM Route Network. (Bogota, June 2019)
- **(Completed)** Fourth workshop on PANS-OPS implementation. - Continue harmonising and coordinating PBN instrument procedures in the SAM Region, improving the PANS OPS design capacity of States. (October 2019)
- **(Completed)** SAM/IG/24 - All air navigation implementation priorities in order to continue with implementation activities and the execution of action plans. (November 2019)

**Strategy for PBN implementation through GESEA**

2.13 SAM/IG meetings promote a strategy for PBN implementation in TMA airspace and en-route, through the approval of various activities. Other activities, such as aircraft separation workshops, the ATS/RO group, and the PANS-OPS workshop, are included in the airspace optimisation action plan.

2.14 Notwithstanding the above, the SAMIG/22 meeting agreed to establish the GESEA group, which seeks to increase the efficiency of the work promoted by the SAM/IG, without generating bureaucratic burden or additional costs.

2.15 GESEA will report the progress of its activities to SAMIG/24, through presentations and papers.

**Activities and resources approved for 2020 with the support of Project RLA/06/901**

2.16 The following Tables shows the activities approved for 2020:

TABLE 1

Tasks	Deliverables	Places and dates of execution
Workshop / Meeting of SG1 GESEA /PLAN/AIR SPACE Ref. CAP.SAM. 5 Requested by SAMIG/23	<ul style="list-style-type: none"> <li>• Elaboration and consolidation of the GESEA Work Plan</li> <li>• Update of the operational concept document (CONOPS) for SAM airspace</li> <li>• Regulations for the planning of South American airspace and formulation of an instruction program for Air Space Planners.</li> <li>• Studies and coordination to improve the ATS Contingency Plans of the States.</li> <li>• Support for the formulation of the regional Plan e-ANP, Vol. III and adoption of new elements of the GANP 6th Ed.</li> </ul>	Lima, 30 March to 03 April
Workshop / Meeting of SG2 GESEA /PANS-OPS Ref. CAP.SAM. 5 Requested by SAMIG/23	<ul style="list-style-type: none"> <li>• Elaboration of an action plan to implement ICAO Circular 353 in SAM Region, on transition from the RNAV nomenclature to RNP in PBN letters.</li> <li>• Develop Guidelines to promote the implementation of quality management in the IFP design services of States.</li> <li>• Study for the implementation of Visual RNAV procedures.</li> </ul>	Lima, 06-10 July

TABLE 2

Tasks	Deliverables	Places and dates of execution
SAMIG/25 Ref. CAP.SAM.4 Air navigation implementation priorities considered in GREPECAS programs and Regional initiatives.	Continue with the activities of implementation and execution of the Action Plans developed by the Project in the Areas of AGA, AIM, ATM, CNS and MET	Lima, 25-29 May
1st Workshop / Meeting on optimizing ATS coordination and Contingency Plans SAM/ATS/ATFM - SAM NORTH. Ref. CAP.SAM.4 Requested by SAMIG/23	<ul style="list-style-type: none"> <li>Promote the implementation of the minimum separation of 20 NM in the continental area.</li> <li>Update operational agreement letters between States, including ATS Contingency Plans and including the ATFM.</li> </ul>	Lima, 13-17 April
2nd Workshop / Meeting on optimizing ATS coordination and Contingency Plans SAM/ATS/ATFM - SAM SOUTH. Ref. CAP.SAM.4 Requested by SAMIG/23	<ul style="list-style-type: none"> <li>Promote the implementation of the minimum separation of 20 NM in the continental area.</li> <li>Update operational agreement letters between States, including ATS Contingency Plans and including the ATFM.</li> </ul>	Lima, 14 – 18 July
SAMIG/26 Ref. CAP.SAM.4 Air navigation implementation priorities considered in GREPECAS programs and Regional initiatives.	Continue with the activities of Implementation and execution of the Action Plans developed by the Project in the Areas of AGA, AIM, ATM, CNS and MET.	Lima, 2 – 6 November
Review of the project document for the implementation of the regional air navigation plan for SAM	Proposal of a project document aligned to Vol. II and III of the CAR / SAM e-ANP for the SAM Region.	TBD

### 3. Conclusion

3.1 Under the sponsorship of Project RLA/06/901, direct assistance continued to be provided to SAM States for PBN implementation in selected airspaces. The tools used for this purpose by the SAM Regional Office have been the PBN workshops and the implementation meetings (SAM/IG). GESEA supplements the work of SAM/IG and allows for a flexible organisation of the work of State experts, taking into account the complexity of some implementation issues.

3.2 Furthermore, the factors that hinder the attainment of objectives in the SAM Region have been identified, namely:

- a) scarce training offered to PANS OPS design and ATM/CNS planning personnel, and difficulty to retain such personnel;
- b) lack of specialised PANS OPS design software in 40% of the States; and
- c) overlap of ATS and airspace improvement activities, new mapping requirements that affect PBN implementation within the foreseen timeframe in some States.

4. **Suggested action**

4.1 The Meeting is invited to:

- a) Take note of the information provided in this working paper;
- b) update the tentative dates for PBN-based redesign implementation in selected TMA airspaces, presented in **Appendix A**;
- c) update information in **Appendix B** on the status of implementation of longitudinal separation optimisation in the SAM Region;
- d) review the information provided in **Appendix C** regarding PBN implementation focal points; and
- e) coordinate with the Secretariat in case the States need to update or sign longitudinal separation LOAs or MOUs.

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## APPENDIX A

Redesign of selected TMA airspaces based on PBN plans				
State		Implementation		
Argentina	BAIRES INTERMEDIATE		Apr 2020	
	BAIRES FUTURE		2022	
	Cordoba		Feb 2019	
	Comodoro Rivadavia		Implemented	
	Bahía Blanca		Implemented	
	Salta/Jujuy		Oct 2019	
	La Rioja		Oct 2019	
	Paraná Sauce Viejo		Dec 2019	
	Esquel		Apr 2020	
	Resistencia Corrientes		Jul 2019	
	Ushuaia/Rio Grande		Apr 2020	
	Mendoza		Implemented	
	Tucumán		Implemented	
	Rosario		Implemented	
	Bariloche		Implemented	
Posadas		2020		
Bolivia	Cochabamba		Phase 1.- November 2019. LA PAZ FIR PBN TMAs. Phase 2.- TBD. Definitive PBN designs in the LA PAZ FIR with ATS surveillance	
	La Paz			
	Santa Cruz			
Brazil	Brasília		Implemented	
	Belo Horizonte			
	São Paulo (partial changes)			
	Salvador			
	Manaus			
	(PBN SUL)	Curitiba		Implemented
		Florianopolis		
Joinville				
Navegantes				

	Porto Alegre		
	São Paulo (partial changes)		
	Routes network FIR CW		
	São Paulo (TMA-SP Neo)		Set 2020
	Fortaleza, Natal, João Pessoa, Recife		Nov 2021
	Belem, Campo Grande e São Luis	Oct 2022	
	Cuiabá, Boa Vista, Porto Velho e Rio Branco	Oct 2023	
<b>Chile</b>	Santiago (South)	Implemented	
	Routes network FIR Santiago		
<b>Colombia</b>	Bogotá	Implemented	
	Medellin	Dec 2019	
	Pereira	Sep 2019	
	Cucuta	Dec 2010	
	Bucaramanga	Mar 2021	
	San Andres	Mar 2021	
<b>Ecuador</b>	Guayaquil	Implemented	
	Manta	Oct 2019	
	Quito	Implemented	
	Galapagos	Implemented	
<b>Guyana</b>	Georgetown	Feb 2019	
<b>Panama</b>	Panama	Second semester 2020	
<b>Paraguay</b>	Asunción	Implemented	
<b>Peru</b>	Arequipa	First semester 2019	
	Cusco	Implemented	
	Juliaca	Second semester 2019	
	Puerto Maldonado	Second semester 2019	
<b>Suriname</b>	Paramaribo	Implemented	
<b>Uruguay</b>	Carrasco y Laguna del Sauce	Second semester 2020	
<b>Venezuela</b>	Maiquetia	Implemented	
	Isla Margarita	Sep 2019	

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## APPENDIX B

## STATUS OF IMPLEMENTATION OF OPTIMISED LONGITUDINAL SEPARATION

ARGENTINA						
*Updated by SAM/IG/22 Nov.2018						
ACC	ACC ADJ	Longitudinal Separation				Comments
		40 NM GNSS/DME	Date of implementation	20 NM GNSS/DME	Date of implementation	
CORDOBA	IQUIQUE	YES	03/12/18			
	LA PAZ	YES	01/01/17			
	EZEIZA			YES	13/10/2016	
	MENDOZA			YES	13/10/2016	
	RESISTENCIA			YES	13/10/2016	There are some problems with VHF Com.
RESISTENCIA	ASUNCION		01/01/17			
	LA PAZ	YES	01/01/17			
	CORDOBA			YES	13/10/2016	
	CURITIBA	YES	01/01/17			
	EZEIZA			YES	13/10/2016	
	MONTEVIDEO	YES	01/01/17			
EZEIZA	COMODORO RIVADAVIA			YES	13/10/2016	
	MENDOZA			YES	13/10/2016	
	PUERTO MONTT	YES	03/12/18			
	CORDOBA			YES	13/10/2016	
	RESISTENCIA			YES	13/10/2016	
	MONTEVIDEO	YES	01/01/17	YES	2010	PAPIX, KUKEN and DORBO 20 NM
MENDOZA	EZEIZA			YES	13/10/2016	
	SANTIAGO			YES	03/12/2018	
	CORDOBA			YES	13/10/2016	
COMODORO RIVADAVIA	EZEIZA			YES	13/10/2016	
	PUNTA ARENAS	YES	03/12/18			
	PUERTO MONTT	YES	03/12/18			

BOLIVIA						
*Updated by SAM/IG/23						
ACC	ACC ADJ	Longitudinal Separation				Comments
		40 NM GNSS/DME	Date of implementation	20 NM GNSS/DME	Date of implementation	
LA PAZ	AMAZONICO	YES	01/01/17			Not being applied.
	ASUNCION	YES	01/01/17			Not being applied.
	CURITIBA	YES	01/01/17			Not being applied.
	CORDOBA	YES	01/01/17			Not being applied.
	LIMA	OG				Without agreement.
	IQUIQUE	OG				Agreements being handled.
	RESISTENCIA	YES	01/01/17			Not being applied.

BRAZIL						
*Updated by SAM/IG/23						
ACC	ACC ADJ	Longitudinal Separation				Comments
		40 NM GNSS/DME	Date of implementation	20 NM GNSS/DME	Date of implementation	
AMAZÓNICO	BRASILIA	---	---	---	---	10 NM
	BOGOTÁ	YES	13/10/16	YES	01/12/17	20 NM for Amazonico and 40 NM for Bogota
	CAYENNE	---	---	---	---	10 minutes
	CURITIBA	---	---	---	---	10 NM
	GEORGETOWN	YES	07/01/16			
	LA PAZ	YES	01/01/17			
	LIMA	YES	31/03/16	YES	01/12/2017	
	MAIQUETIA	YES	23/10/16			
	PARAMARIBO	YES	13/10/16			
	RECIFE	---	---	---	---	10 NM
BRASILIA	ATLANTICO	---	---	---	---	10 minutes
	AMAZÓNICO	---	---	---	---	10 NM
	CURITIBA	---	---	---	---	5 NM
CURITIBA	RECIFE	---	---	---	---	5 NM
	ASUNCION	YES	Mar/2016	YES	29/03/2018	20 NM for Curitiba and 40 NM for Asuncion
	AMAZONICO	---	---	---	---	10 NM
	BRASILIA	---	---	---	---	5 NM
	LA PAZ	YES	01/01/17			
	MONTEVIDEO	YES	01/01/17	YES	15/11/2018	10 NM under coordination
	RECIFE	---	---	---	---	5 NM
RECIFE	RESISTENCIA	YES	01/01/17			
	ATLANTICO	---	---	---	---	10 minutes
	AMAZONICO	---	---	---	---	10 NM
	BRASILIA	---	---	---	---	5 NM
	CURITIBA	---	---	---	---	5 NM
ATLANTICO	ATLANTICO	---	---	---	---	10 minutes
	AMAZÓNICO	---	---	---	---	10 minutes
	CURITIBA	---	---	---	---	Problems Com. VHF
	RECIFE	---	---	---	---	
	CAYENNE	---	---	---	---	

NOTE.- Before SAM/IG/21, 20 NM will be applied to receive traffic, entering the FIR of Brazil.

CHILE						
*Updated by SAM/IG/23						
ACC	ACC ADJ	Longitudinal Separation				Comments
		40 NM GNSS/DME	Date of implementation	20 NM GNSS/DME	Date of implementation	
SANTIAGO	IQUIQUE	NA	---	----	-----	5 NM
	MENDOZA	YES	3/12/2018			
	PUERTO MONTT	NA	----	----	----	5 NM
IQUIQUE	CORDOBA	YES	3/12/2018			
	LA PAZ	OG				Managing agreements
	LIMA	OG				Managing agreements
PUERTO MONTT	SANTIAGO	NA	---	----	----	5 NM
	PUNTA ARENAS	NA	----	----	---	5 NM
	EZEIZA	YES	3/12/2018			
	COMODORO RIVADAVIA	YES	3/12/2018			
PUNTA ARENAS	PUERTO MONTT	NA	----	----	----	5 NM
	COMODORO RIVADAVIA	YES	3/12/2018			

COLOMBIA						
*Updated by SAM/IG/22 Nov. 2018						
ACC	ACC ADJ	Longitudinal Separation				Comments
		40 NM GNSS / DME	Date of implementation	20 NM GNSS/DME	Date of implementation	
BOGOTA	AMAZONICO	YES	30/09/16			
	CENAMER	NO				MoU was not elaborated, for not guaranteeing efficient communications in the border area.
	GUAYAQUIL	YES	13/10/16			
	LIMA	YES	10/11/16			
	MAIQUETIA	YES	21/03/17			
	PANAMÁ	YES	13/10/16			
	BARRANQUILLA	YES	05/10/16			

COLOMBIA						
*Updated by SAM/IG/22 Nov. 2018						
ACC	ACC ADJ	Longitudinal Separation				Comments
		40 NM GNSS / DME	Date of implementation	20 NM GNSS/ DME	Date of implementation	
BARRANQUILLA	MAIQUETIA	YES	21/03/17			
	PANAMÁ	YES	13/10/16			
	BOGOTÁ	YES	05/10/16			
	KINGSTON	YES	15/06/13			
	CURAZAO	NO				MoU was not elaborated, for not guaranteeing efficient communications in the border area.

ECUADOR						
*Updated by SAM/IG/22 Nov. 2018						
ACC	ACC ADJ	Longitudinal Separation				Comments
		40 NM GNSS/ DME	Date of implementation	20 NM GNSS/ DME	Date of implementation	
GUAYAQUIL	BOGOTÁ	YES	13/10/16	O/G		The reduced separation of 40 NM is applied. Memorandum of Understanding between ATC service providers, signed.
	LIMA	YES	10/11/16	O/G		Implemented..
	CENAMER	NA	---	---	---	Oceanic separation.

FRENCH GUYANA						
*Updated by SAM/IG/20 Oct.2017						
ACC	ACC ADJ	Longitudinal Separation				Comments
		40 NM GNSS/ DME	Date of implementation	20 NM GNSS/ DME	Date of implementation	
CAYENNE	AMAZONICO	---	---	---	---	10 minutes
	PARAMARIBO	---	---	---	---	10 minutes
	PIARCO					No information available.

GUYANA						
*Updated by SAM/IG/22 Nov. 2018						
ACC	ACC ADJ	Longitudinal Separation				Comments
		40 NM GNSS/ DME	Date of implementation	20 NM GNSS / DME	Date of implementation	
GEORGETOWN	AMAZONICO	YES				Georgetown will propose 20nm tests.
	PIARCO	YES	17/08/2017			Georgetown will propose 20nm tests.
	MAIQUETIA	YES	19/03/2018			Georgetown will propose 20nm tests.
	PARAMARIBO	YES				Georgetown will propose 20nm tests.

PANAMÁ						
*Updated by SAM/IG/23						
ACC	ACC ADJ	Longitudinal Separation				Comments
		40 NM GNSS/ DME	Date of implementation	20 NM GNSS/ DME	Date of implementation	
PANAMÁ	BOGOTÁ	YES	Oct/16	NO	TBD	In conversations. Estimated by September 2019
	BARRANQUILLA	YES	Oct/16	NO	TBD	In conversations. Estimated by September 2019
	CENAMER	YES	15/11/16	YES	April 2019	
	KINGSTON	YES	10/12/16	NO	TBD	Start conversations January 2019

PARAGUAY						
*Updated by SAM/IG/23						
ACC	ACC ADJ	Longitudinal Separation				Comments
		40 NM GNSS/ DME	Date of implementation	20 NM GNSS / DME	Date of implementation	
ASUNCION	CURITIBA	YES	Mar/16 date of SAMIG 16		28/03/ 2018	Traffic from Asuncion to Curitiba.
	LA PAZ	YES	01/01/17			
	RESISTENCIA	YES	01/01/17			Not being applied. Coordination with Argentina is required.

PERU						
*Updated by SAM/IG/22 Nov. 2018						
ACC	ACC ADJ	Longitudinal Separation				Comments
		40 NM GNSS/DME	Date of implementation	20 NM GNSS/DME	Date of implementation	
LIMA	AMAZONICO	YES	31/03/16			Pending revisión in LoA ACC Lima – ACC Amazonico. It is expected to apply from June 2019. In OSL Workshop full implementation was agreed
	BOGOTÁ	YES	31/03/16			Implemented
	OCEANICO	NA	---	---	---	Oceanic Separation
	IQUIQUE	OG				Managing agreements
	GUAYAQUIL	YES	10/11/16			Implemented
	LA PAZ	OG				There are limitations in the scope of air-ground communications. Without agreement.

SURINAME						
*Updated by SAM/IG/22 Nov. 2018						
E	ACC ADJ	Longitudinal Separation				Comments
		40 NM GNSS/DME	Date of implementation	20 NM GNSS/DME	Date of implementation	
PARAMARIBO	AMAZONICO	YES	13/10/16			Signed.
	GEORGETOWN	YES	29/03/16			Signed.
	PIARCO	N/A	---	---	---	Oceanic Separation.
	CAYENNE	N/A	---	---	---	10 minutes.

URUGUAY						
*Updated by SAM/IG/22 Nov. 2018						
ACC	ACC ADJ	Longitudinal Separation				Comments
		40 NM GNSS/DME	Date of implementation	20 NM GNSS/DME	Date of implementation	
MONTEVIDEO	CURITIBA	YES	01/01/17	YES	15/11/18	Coordinated with CAM and effective surveillance, can be 10 nm.
	EZEIZA	YES	01/01/17	YES	01/08/2017	
	RESISTENCIA	YES	01/01/17	YES	15/03/2018	

VENEZUELA						
*Updated by SAM/IG/22 Nov. 2018						
ACC	ACC ADJ	Longitudinal Separation				Comments
		40 NM GNSS/DME	Date of implementation	20 NM GNSS/DME	Date of implementation	
MAIQUETIA	AMAZONICO	YES	12/12/15			
	BOGOTA	YES	21/03/17			
	BARRANQUILLA	YES	21/03/17			
	PIARCO	OG				Negotiating. Coordination required through ICAO NACC Mexico.
	CURAZAO	YES	31/01/19			Close to the signing of the LOA
	SAN JUAN	NO				San Juan does not have conditions to implement. Coordination required through ICAO NACC Mexico.
	GEORGETOWN	YES		19/03/18		

**ACTION PLAN 2018 – 2019****"IMPROVEMENT AND NORMALIZATION OF MINIMUM LONGITUDINAL SEPARATIONS EN ROUTE"**

## Phase 1; Consolidation of SLM 40 NM and initial actions to apply SLM 20 NM

- Define agreements to apply SLM 40 NM with CAR States (April 2018)
- Define application of SLM 40 NM in FIR La Paz (SAM/IG/21)
- Feedback from Brazil on SLM 20 NM application (SAM/IG/21)
- Feedback from COL, PER, ECU, VEN, PAN on SLM 20 NM application (SAM/IG/21)
- Complete implementation of SLM 40 NM in the SAM continental space (SAM/IG/21)

## Phase 2; Implementation of SLM 20 NM

- Post-implantation analysis SLM 40NM (SAM/IG/21)
- Analysis of 20 NM unilateral application results in Brazil (SAM/IG/21)
- Analysis of the results of SLM 20 NM States tests (SAM/IG/21)
- Analysis of limitations and shortages (SAM/IG/21)
  - a. ATS sectorization, ATS capacity measurement
  - b. Flow Management, appropriate application of initiatives.
  - c. Direct communications in VHF
  - d. ATS route network
  - e. Application of the AIDC, management of the FPL.
- Risk evaluation
- Define agreements to apply SLM 20 NM with CAR States (SAM/IG/22)
  - a. Stage 1, aircrafts that land in the FIR
  - b. Stage 2, all aircrafts that enter the FIR
- Define agreements and application date of SLM 20 NM among SAM States (SAM/IG/22)
  - a. Stage 1, aircrafts that land in the FIR
  - b. Stage 2, all aircraft that enter the FIR
- Complete implementation of SLM 20 NM in the SAM continental space (SAM/IG/23 - 2019)
- SLM 20 NM post-implantation analysis (SAM/IG/23 - 2019)

## Phase 3; Implementation to apply SLM 10 NM, with ATS surveillance

(TBD)

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## APPENDIX C / APÉNDICE C

## LIST OF CONTACTS FOR OPERATIONAL PBN FOCAL POINTS

## LISTA DE CONTACTOS PARA PUNTOS FOCALES PBN

*Updated during SAM/IG/22 / Actualizados en la SAM/IG/22*

State / Estado	PBN FOCAL POINTS / PUNTOS FOCALES PBN
<b>ARGENTINA</b>	<p>Mariana Fernandez Administración Nacional de Aeronáutica Civil (ANAC) A/C Departamento Programación Técnica Tel: +54 11 5941 3000 Ext. 69193 E-mail: <a href="mailto:mafernandez@anac.gov.ar">mafernandez@anac.gov.ar</a></p> <p>Rodrigo Devesa Diseño de Espacio Aereo Empresa Argentina de Navegación Aérea (EANA) Tel: +54 11 4320 2010 Cel: +54911 4088 6542 E-mail: <a href="mailto:rdevesa@eana.com.ar">rdevesa@eana.com.ar</a></p> <p>Diego Alberto Gamboa Jefe Departamento Diseño de Espacio Aéreo Empresa Argentina de Navegación Aérea (EANA) Tel: +5411 3092 7597 E-mail: <a href="mailto:dgamboa@eana.com.ar">dgamboa@eana.com.ar</a></p> <p>Maria Estela Leban Directora de Regulaciones Normas y Procedimientos Tel: 541159413000 int 69728 E-mail: <a href="mailto:meleban@anac.gob.ar">meleban@anac.gob.ar</a></p>
<b>BOLIVIA</b> <b>(Plurinational State of) /</b>  <b>BOLIVIA</b> <b>(Estado Plurinacional de)</b>	<p>Luis Benjamín Rojas Santa Cruz Dirección General de Aeronáutica Civil (DGAC) Especialista Planificación de Espacios Aéreos y Procedimientos de Vuelo Tel.: +591 4 422 1696 Cel.: +591 7203 5429 E-mail: <a href="mailto:lrojas@dgac.gob.bo">lrojas@dgac.gob.bo</a> <a href="mailto:lbrsc@hotmail.com">lbrsc@hotmail.com</a></p>

State / Estado	PBN FOCAL POINTS / PUNTOS FOCALES PBN
<b>BRAZIL / BRASIL</b>	<p>Hugo Dominato Rossi Jefe ATM Departamento de Control del Espacio Aéreo (DECEA) Av. General Justo, 160 – Centro Rio de Janeiro 20.021-130, Brasil Tel: +55 21 2101 6278 E-mail: <a href="mailto:rossihr@decea.gov.br">rossihr@decea.gov.br</a></p> <p>Rochelly de Miranda Corrêa Auxiliar ATM Departamento de Control del Espacio Aéreo (DECEA) Av. General Justo, 160 – Centro Rio de Janeiro 20.021-130, Brasil Tel: +55 21 2101 6197 E-mail: <a href="mailto:rochellyrhc@decea.gov.br">rochellyrhc@decea.gov.br</a></p>
<b>CHILE</b>	<p>Alfonso de la Vega Encargado Sección Navegación Aérea Dirección General Aeronáutica Civil (DGAC) Miguel Claro 1314 Providencia, Santiago, Chile Tel: +56 2 2439 2952 E-mail: <a href="mailto:adelavega@dgac.gob.cl">adelavega@dgac.gob.cl</a>; <a href="mailto:adelavega@vtr.net">adelavega@vtr.net</a></p> <p>Hector Ibarra Martínez ATC Planificador ATM Dirección General Aeronáutica Civil (DGAC) Miguel Claro 1314 Providencia, Santiago, Chile Tel: +56 2 2836 4020 E-mail: <a href="mailto:hibarra@dgac.gob.cl">hibarra@dgac.gob.cl</a></p> <p>Marco Abarca Daza ATC Diseñador de Procedimientos Dirección General Aeronáutica Civil (DGAC) Miguel Claro 1314 Providencia, Santiago, Chile Tel: +56 2 2290 4718 E-mail: <a href="mailto:mabarca@dgac.gob.cl">mabarca@dgac.gob.cl</a></p>

State / Estado	PBN FOCAL POINTS / PUNTOS FOCALES PBN
<b>COLOMBIA</b>	<p>Medardo Arcesio Figueroa Guerrero            Coordinador Grupo Gestión y Organización del Espacio Aéreo (ASM)            Aeropuerto El Dorado – Centro de Gestión Aeronáutica de Colombia            Bogotá, Colombia            Tel: +57 1 4251000 ext 1461            E-mail: <a href="mailto:medardo.figueroa@aerocivil.gov.co">medardo.figueroa@aerocivil.gov.co</a></p>
<b>ECUADOR</b>	<p>Christian Alexis Ramos Tapia            Dirección General de Aviación Civil (DGAC)            Tel: +593 2294 7400 ext. 4515            E-mail: <a href="mailto:christian.ramos@aviacioncivil.gob.ec">christian.ramos@aviacioncivil.gob.ec</a>; <a href="mailto:chris278rams@gmail.com">chris278rams@gmail.com</a></p>
<b>FRENCH GUIANA / GUYANA FRANCESA</b>	<p>Philippe Rondel            E-mail: <a href="mailto:philippe.rondel@aviation-civile.gouv.fr">philippe.rondel@aviation-civile.gouv.fr</a></p>
<b>GUYANA</b>	<p>Rickford Samaroo            Director ANS            E-mail: <a href="mailto:rsamaroo@gcaa.gy.org">rsamaroo@gcaa.gy.org</a></p> <p>Trevor Daly            Tel: +592 2612564            E-mail: <a href="mailto:tdaly@gcaa.gy.org">tdaly@gcaa.gy.org</a></p>
<b>PANAMÁ</b>	<p>Ana Teresa Montenegro            Inspectora ANS/PANS-OPS; Oficina de Vigilancia de la Seguridad Operacional para los Servicios de Navegación Aérea; Autoridad Aeronáutica Civil.            Edif. N° 646 Ave. Demetrio Korsi, calle Héctor Conte Bermúdez, Albrook, Panamá.            Tel: +507 315 9031            E-mail: <a href="mailto:amontenegro@aeronautica.gob.pa">amontenegro@aeronautica.gob.pa</a>; <a href="mailto:anadeleón@aeronautica.gob.pa">anadeleón@aeronautica.gob.pa</a></p> <p>Alberto De Icaza            Jefe de Diseño de Procedimiento de vuelo y Espacio Aéreo; Dirección de Navegación Aerea; Autoridad Aeronáutica Civil; Edif. N° 646 Ave. Demetrio Korsi,            calle Héctor Conte Bermúdez, Albrook, Panamá.            Tel: +507 315 9834            E-mail: <a href="mailto:adeicaza@aeronautica.gob.pa">adeicaza@aeronautica.gob.pa</a></p>

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<b>PARAGUAY</b>	<p>José Luis Chávez Subdirector Gerente Servicios Aeronáuticos Dirección Nacional de Aeronáutica Civil Edif. Centro de Control de Área Unificado – Mariano Roque Alonso Av. Mompox c/ José Félix Bogado Tel: +59521 758 5022 Cel: +595 99 1 249 969 E-mail: <a href="mailto:josech@gmail.com">josech@gmail.com</a></p> <p>Tomas Alfredo Yentzch Irala Subdirector de Navegación Aérea Dirección Nacional de Aeronáutica Civil Mariscal López e/ 22 de setiembre – Edif. Ministerio de Defensa Nacional Tel: +59521 211978 Cel: +595 981 535886 E-mail: <a href="mailto:tyi68@gmail.com">tyi68@gmail.com</a>; <a href="mailto:tyentzch@dinac.gov.py">tyentzch@dinac.gov.py</a></p>
<b>PERÚ</b>	<p>Sady Orlando Beaumont Valdez Inspector Navegación Aérea Dirección General de Aeronáutica Civil (DGAC) Ministerio de Transportes y Comunicaciones Jirón Zorritos 1203 Lima, Perú Tel: +51 1 615 7880 E-mail: <a href="mailto:sbeaumont@mtc.gob.pe">sbeaumont@mtc.gob.pe</a></p> <p>Tomás Ben-Hur Macedo Cisneros Experto PANS-OPS en el Área de Normas y Procedimientos Controlador de Tránsito Aéreo CORPAC S.A. Av. Elmer Faucett 3400 Callao, Perú Tel: +511 414 1364 E-mail: <a href="mailto:tmacedo@corpac.gob.pe">tmacedo@corpac.gob.pe</a></p>

State / Estado	PBN FOCAL POINTS / PUNTOS FOCALES PBN
SURINAM / SURINAME	<p>Kalawatie Radha Atwaroe Air Traffic Controller / Controlador de Tráfico Aéreo (ATM) Suriname Civil Aviation Department Tel: +597 855 5025 Email: <a href="mailto:radha_atwaroe@hotmail.com">radha_atwaroe@hotmail.com</a></p> <p>Quincy Cyrus Air Traffic Controller / Controlador de Tráfico Aéreo Suriname Civil Aviation Department Tel: +597 857 0648 Email: <a href="mailto:qcyrus83@gmail.com">qcyrus83@gmail.com</a></p>
URUGUAY	<p>PUNTOS FOCALES PBN DEL ESTADO</p> <p>DINACIA / DGAC Tte Cnel. (Av.) Pedro Cardeillac Director de Navegación Aérea Tel: +598 2 604 0408 Ext 4001 E-mail: <a href="mailto:pcardeillac@dinacia.gub.uy">pcardeillac@dinacia.gub.uy</a></p> <p>DINACIA / DGAC Rosanna Barú Inspectora Navegación Aérea Tel: +598 2 604 0408 Ext 4461 E-mail: <a href="mailto:rbaru@dinacia.gub.uy">rbaru@dinacia.gub.uy</a></p> <p>PUNTOS FOCALES PBN ANSP OPERACIONALES</p> <p>DINACIA / DGIA Tte Cnel. (Nav.) Gabriel Falco Director de Circulación Aérea Tel: +598 2 604 0408 Ext 5101 Cel: +598 9 804 6848 E-mail: <a href="mailto:gfalco@dinacia.gub.uy">gfalco@dinacia.gub.uy</a></p> <p>DINACIA / DGIA Director de Tránsito Aéreo Gustavo Turcatti Tel: +598 2 604 0408 Ext 5105 E-mail: <a href="mailto:dta@dinacia.gub.uy">dta@dinacia.gub.uy</a></p> <p>DINACIA / DGIA Miguel Miraballes Tel: +598 2 604 0408 ext 5105 E-mail: <a href="mailto:miguel.miraballes@dinacia.gub.uy">miguel.miraballes@dinacia.gub.uy</a></p>

<b>State / Estado</b>	<b>PBN FOCAL POINTS / PUNTOS FOCALES PBN</b>
<b>VENEZUELA(Bolivarian Republic of) /  VENEZUELA (República Bolivariana de)</b>	Omar Enrique Linares Coordinador Nacional ATS Jefe de Área de Planificación de Espacios Aéreos Instituto Nacional de Aviación Civil - INAC Aeropuerto Internacional Simón Bolívar Edificio ATC, piso 1, Oficina AIS Maiquetía, Vargas República Bolivariana de Venezuela Tel: +58 212 3034513; +58 424 4318754 E-mail: <a href="mailto:o.linares@inac.gob.ve">o.linares@inac.gob.ve</a> ; <a href="mailto:ollinaresomar2@gmail.com">ollinaresomar2@gmail.com</a>

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