International Civil Aviation Organization
CAR/SAM Regional Planning and Implementation Group (GREPECAS)

Fifth Meeting of the Programmes and Projects Review Committee

(PPRC/5)

Final Report

Mexico City, Mexico, 16 to 18 July 2019

Prepared by the Secretariat

July 2019

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HISTORICAL

ii.1 Place and Date of the Meeting

The Fifth Meeting of the GREPECAS Programmes and Projects Review Committee (PPRC/5) was held at the ICAO North American, Central American and Caribbean (NACC) Regional Office, in Mexico City, Mexico, from 16 to 18 July 2019.

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ii.2 Opening Ceremony

Mr. Santiago Rosa (Dominican Republic), Chairperson of GREPECAS, highlighted the importance of the PPRC/5 meeting with the proposed improvements to GREPECAS and the challenge to make the group more attractive and beneficial to States and the regions, recalling the previous coordination carried out with States and the Secretariat. Mr. Fabio Rabbani, Regional Director of the ICAO SAM Regional Office provided an overall briefing of the goals worked out to enhance synergies between GREPECAS and RASG-PA, of the importance of working together between the ICAO Regional Offices, the States and the industry and pointed out the challenges of the implementation. Mr. Melvin Cintron, Regional Director of the North American, Central American and Caribbean (NACC) Regional Office of ICAO and Secretary of GREPECAS, seconded the words provided by the Chairperson of GREPECAS and Mr. Rabbani on the continuous work conducted between the ICAO Regional Offices to enhance the coordination and the effectiveness of the GREPECAS and RASG-PA, the performance-based approach for the GREPECAS mechanism, the challenges faced in the regions, where the lack of implementation of some States can be alleviated with the support from other States, and the CAR/SAM level of effective implementation. Finally, he welcomed the participants and opened the meeting.

Adoption of the Agenda and Schedule

The Secretariat presented WP/01 Rev. inviting the Meeting to approve the provisional agenda and schedule and referred to IP/01 with the list of associated documentation. The Meeting approved the agenda and schedule.

ii.3 Officers of the Meeting

Mr. Rosa, Chairman of GREPECAS, presided over the Meeting. Mr. Cintron, Regional Director, ICAO NACC Regional Office, acted as Secretary of the Meeting and was assisted by the following Officers from the ICAO NACC and SAM Regional Offices:

Fabio Rabbani	Regional Director, SAM Regional Office
Oscar Quesada	Deputy Regional Director, SAM Regional Office
Julio Siu	Deputy Regional Director, NACC Regional Office
Jaime Calderon	Regional Officer, Aerodromes and Ground Aids, NACC Regional Office
Raúl Martínez	Regional Officer, Aeronautical Information Management, NACC Regional Office
Jorge Armoa	Regional Officer, Meteorology and Aeronautical Information Management, SAM Regional Office

Luis Sanchez	Regional Officer, Aeronautical Meteorology, NACC Regional Office
Fabio Salvatierra	Regional Officer, Aerodromes and Ground Aids, SAM Regional Office
Mayda Avila	Regional Officer, Communications, Navigation and Surveillance, NACC Regional Office
Eddian Méndez	Regional Officer, Air Traffic Management/Search and Rescue, NACC Regional Office

In view of the absence of the Chairperson of GREPECAS during the last hours of the last day, the Meeting was chaired by the Vice-Chairperson of GREPECAS, Mr. Ari Rodrigues Bertolino (Brazil).

ii.4 Working Languages

The working languages of the Meeting were English and Spanish. The working papers, information papers and report of the meeting were available to participants in both languages.

ii.5 Schedule and Working Arrangements

It was agreed that the working hours for the sessions of the meeting would be from 09:00 to 15:30 hours daily with adequate breaks.

ii.6 Agenda

Agenda Item 1: Follow-up to the Valid Status of GREPECAS Conclusions and Decisions and of Air Navigation Deficiencies in the CAR/SAM Regions
- 1.1 Review of the status of implementation of GREPECAS valid conclusions and decisions
- 1.2 Status of air navigation deficiencies in the CAR/SAM Regions

Agenda Item 2: Proposal of Improvements to GREPECAS

Agenda Item 3: Global, Intra- and Inter-Regional Air Navigation Activities
- 3.1 Analysis of the recommendations of the ICAO 13th Air Navigation Conference (AN/Conf-13)
- 3.2 Preparation for the 40th Session of the ICAO Assembly
- 3.3 Follow-up to the implementation of inter- and intra-regional activities

Agenda Item 4: GREPECAS-RASG-PA Coordination Matters

Agenda Item 5: Review of GREPECAS Programmes and Projects and Subsidiary Groups
- 5.1 Projects under the PBN Programme (B0-APTA, B0-FRTO, B0-CDO and B0-CCO)
- 5.2 Projects under the ATFM Programme (B0-SEQ, B0-FRTO, B0-NOPS and B0 ACDM)
- 5.3 Projects under the Automation and ATM Situational Awareness Programme (BO-RSEQ, B0-FICE, B0-SNET, B0-ASUR and B0-SURF)
- 5.4 Projects under the Ground-ground and Air-ground Telecommunication Infrastructure Programme (B0-FICE and B0-TBO)
- 5.5 Projects under the Aerodromes Programme (B0-SURF and B0-ACDM)
- 5.6 Projects under the AIM Programme (B0-DATM)
- 5.7 Projects under the Aeronautical Meteorology Programme (B0-AMET)
- 5.8 Progress report of the Scrutiny Group (GTE)
- 5.9 Progress report of the CAR/SAM Regional Bird/Wildlife Hazard Prevention Committee (CARSAMPAF)
- 5.10 Progress report of the Latin American and Caribbean Association of Airfield Pavements (ALACPA)

Agenda Item 6: Monitoring and Reporting of the Implementation of Air Navigation in the CAR/SAM Regions
- 6.1 Development and implementation of National Air Navigation Plans
- 6.2 Other relevant air navigation implementation

Agenda Item 7: Analysis of the Emerging Threats to Air Navigation
- 7.1 ICAO's perspective on cyber-security and cyber-resilience
- 7.2 Other emerging threats to air navigation

Agenda Item 8: Organisation of GREPECAS and Preparation of GREPECAS Plenary

Agenda Item 9: Other Business

ii.7 Attendance

The Meeting was attended by 9 States/Territories from the NAM/CAR/SAM Regions and 3 International Organizations, totalling 23 delegates as indicated in the list of participants.

ii.8 Draft Conclusions and Draft Decisions

The PPRC records its activities in the form of Draft Conclusions, Draft Decisions, and Decisions as follows:

Draft Conclusions: Conclusions that require approval by GREPECAS prior to implementation.

Draft Decisions: Decisions that require approval by GREPECAS prior to implementation.

Decision: Decisions that deal with internal matters of the PPRC

ii.8.1 List of Draft Conclusions

ii.8.2 List of Decisions

ii.9 List of Working and Information Papers and Presentations

Refer to the Meeting web page:
https://www.icao.int/NACC/Pages/meetings-2019-pprc5.aspx

WORKING PAPERS

Number	Agenda Item	Title	Date	Prepared and Presented by
WP/01 Rev.	---	Draft Agenda and Schedule	09/07/19	Secretariat
WP/02	1.1	Progress in the Implementation of Outstanding Conclusions and Decision of GREPECAS	27/05/19	Secretariat
WP/03	1.2	Current Situation of Deficiencies in the CAR/SAM Regions	11/07/19	Secretariat
WP/04	2	Proposal of Improvements to GREPECAS	11/07/19	GREPECAS Chairperson
WP/05	3.1	Analysis of the Recommendations of the ICAO Thirteenth Air Navigation Conference (AN-CONF/13)	03/07/19	Secretariat
WP/06	5.5	New Projects under the Aerodrome Programme for the SAM Region	05/07/19	Secretariat
WP/07 REV	3.3	CAR/SAM Inter-Regional Activities	15/07/19	Secretariat
WP/08	4	RASG-PA/GREPECAS Communication	04/07/19	Secretariat
WP/09	3.1	Analysis of the Project of the Global Air Navigation Plan - Sixth Edition	25/06/19	Secretariat
WP/10	5.1	Follow Up to the Activities Carried Out by the PBN Programme	08/07/19	Secretariat
WP/11	5.2	Follow-Up on the Activities of the ATFM Programme Projects	28/06/19	Secretariat
WP/12	5.10	Follow-Up of the Activities of the Latin American and Caribbean Association of Airfield Pavements (ALACPA) as Support for the ICAO NACC and SAM Offices	03/07/19	ALACPA
WP/13	5.4	Description and Follow-Up to the Implementation of Project Activities under the Ground-Ground and Ground-Air Communication Infrastructure Programme for the CAR and SAM Regions	09/07/19	Secretariat
WP/14	5.5	Follow-Up of Aerodrome Project Activities	04/07/19	Secretariat
WP/15	5.6	Projects under the AIM Programme (B0-DAIM)		Secretariat
WP/16	5.7	Projects under the Aeronautical Meteorology Programme (B0-AMET) for the SAM Region	15/07/19	Secretariat
WP/17	5.8	Follow-Up of the Activities of the GREPECAS Scrutiny Group	24/06/19	Secretariat
WP/18	5.9	Report of Activities And Projects Of The Regional Committee CAR/SAM for the Prevention of Birds/Wildlife (CARSAMPAF)	08/07/19	CARSAMPAF
WP/19	7.2	PBCS Implementation in SAM Region	10/07/19	Chile

WORKING PAPERS

Number	Agenda Item	Title	Date	Prepared and Presented by
WP/20	3.2	Areas of interest for the United States at the 40th session of the international Civil Aviation Organization (ICAO) Assembly	05/07/19	United States
WP/21	8	Review of the GREPECAS Organization, Terms of Reference and Work Programme and Preparation for 2020 GREPECAS Plenary Meeting	09/07/19	Secretariat
WP/22	5.1	Free Route Airspace	11/07/19	IATA
WP/23	6.1	Development and implementation of National Air Navigation Plans	25/06/19	Secretariat
WP/24	6.2	Planning for the Implementation of the GANP Sixth Edition	15/07/19	Secretariat
WP/25		CANCELLED		
WP/26	7.1	ICAO's perspective on cyber-security and cyber-resilience	11/07/19	Secretariat
WP/27		CANCELLED		
WP/28	5.7	Projects under the Aeronautical Meteorology Programme (B0-AMET) for the CAR Region	16/07/19	Secretariat
WP/29		CANCELLED		
WP/30		CANCELLED		
WP/31		CANCELLED		
WP/32 **Rev.**	9	Determination of an Aeronautical Requirement for Tropical Cyclone Advisory Information in the Western South Atlantic	17/07/19	Secretariat

INFORMATION PAPERS

Number	Agenda Item	Title	Date	Prepared and Presented by
IP/01 **Rev. 2**	---	List of Working, Information Papers and Presentations	17/07/19	Secretariat
IP/02 Rev.	3.3	Plan for the Optimization of Routes in Chile	10/07/19	Chile
IP/03	9	New Global Reporting Format for Runway Conditions	05/07/19	Secretariat
IP/04	5.1	Transition Plan of the New Nomenclature from RNAV Cartography to RNP for SAM and CAR Regions	04/07/19	Secretariat

INFORMATION PAPERS

Number	Agenda Item	Title	Date	Prepared and Presented by
IP/05 Rev.	3.3	Progress Made in the ATFM Implementation in Chile	10/07/19	Chile
IP/06	3.2	Proposed U.S. Working and Information Papers for the 40th ICAO Assembly	05/07/19	United States
IP/07	6.2	Automatic Dependent Surveillance – Broadcast Out: Ensuring Preparedness For The 2020 Equipage Mandate	16/07/19	United States
IP/08	3.3	Preparation for the 40th Session of the ICAO Assembly	02/07/19	Secretariat
IP/09	3.3	Contingency Plan of the Air Traffic Services of Chile	10/07/19	Chile
IP/10	7.2	Emerging Issues Identified in 13TH Air Navigation Conference	17/06/19	Secretariat

PRESENTATIONS

Number	Agenda Item	Title	Presented by
1	2	*Implementation eTod+GIS in CAR and SAM States*	Dominican Republic
2	3.3, 5.3, 5.4, 6.1	Follow-Up to Implementation Intra and Inter-Regional Activities GREPECAS C and D Projects	Secretariat
3	2	GREPECAS Organization Programs and Project	Dominican Republic
4	5.5	New Projects on SAM AGA/AOP Programme	Secretariat
5	5.5	Aerodrome Safety and Certification Assistance Project – Phase 1	Secretariat
6	4	RASG-PA Improvements and Coordination with GREPECAS	Secretariat

LIST OF PARTICIPANTS

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Agenda Item 1 Follow-up to the Valid Status of GREPECAS Conclusions and Decisions and of Air Navigation Deficiencies in the CAR/SAM Regions

1.1 Review of the status of implementation of GREPECAS valid conclusions and decisions

1.1.1 Under WP/02, the Meeting analysed the outstanding conclusions of the Eighteenth Meeting of the CAR/SAM Planning and Implementation Regional Group (GREPECAS/18), where 4 decisions and 14 conclusions were formulated, which together with the recoded PPRC conclusions totalized 22 decisions/conclusions.

1.1.2 The Meeting noted that the GREPECAS/18 Report and its conclusions were reviewed the ICAO Air Navigation Council (ANC) at their 208 session on 12 June 2018, highlighting the following:

- The identification of the key challenges faced in the region as detailed in WP/02
- On the subject of implementation of SID/STAR/PBN, the WG-SRP commented on the high level of implementation achieved by the Region. However, a question was raised whether in some instances, there could have been pressure to achieve the ICAO PBN targets and this might lead to States to rush the design of PBN/SID/STARs. This may result in inadequately designed and/or incorrect implementation of the procedure published in the AIP appropriate for the fleet.
- With regards to procedure design, many States hire consultants to take on the task without verifying the qualifications. While a risk assessment and post-implementation analysis is undertaken for every procedure, there have been cases where a procedure was published but not tested in collaboration with the airlines. The issue has been recognized and is being addressed.
- It noted that one of the key issues highlighted by GREPECAS in 2017 was the high rate of missing operational messages, including flight plans encountered in some FIRs and States. The ANC was invited to request the PIRG/RASG Secretariat to bring to the attention of the GREPECAS the issue of missing flight plans in CAR/SAM Regions and take action if necessary."

1.1.3 After the review of these valid GREPECAS/18 conclusions and decisions, **Appendix A** presents the status of these conclusions and decisions. The following is a summary of their status:

Conclusion/Decision	Status
Conclusion 17/8	Superseded by new Draft Conclusion PPRC/05/10
Conclusion 17/12	Valid and its follow-up made under Draft Conclusion PPRC/05/01
Conclusion 18/1	Valid
Decision 18/2	Valid
Conclusion 18/3	Valid
Conclusion 18/4	Superseded by new Draft Conclusions PPRC/05/10
Conclusion 18/5	Valid
Conclusion 18/6	Valid
Decision 18/7	Superseded by new Draft Conclusion PPRC/05/10
Conclusion 18/8	Completed
Conclusion 18/9	Completed

Conclusion/Decision	Status
Conclusion 18/10	Completed
Decision 18/11	Valid
Conclusion 18/12	Valid
Conclusion 18/13	Completed
Conclusion 18/14	Completed
Conclusion 18/15 A and B	Completed
Conclusion 18/16	Valid
Conclusion 18/17	Valid
Conclusion 18/18	Completed
Conclusion 18/19	Completed
Conclusion 18/20	Completed
Conclusion 18/21	Valid
Conclusion 18/22	Completed

1.2 Status of air navigation deficiencies in the CAR/SAM Regions

1.2.1 Under WP/03 the Secretariat presented information about the Air Navigation Deficiencies including the reduction of "U Priority" and the real situation of low activity from States on the correction of the valid Deficiencies particularly on deficiencies originated since more than 10 years ago. The Secretariat mentioned that the main responsibility for the update of the deficiencies status is of the NACC and SAM ICAO Regional Offices in terms of monitoring and actions in coordination with the States

1.2.2 Considering the update of date information in the GANDD and that the ICAO USOAP information is supporting the tracking of the implementation, the Meeting questioned the effectiveness and added value of the GANDD, also taking into account that the majority of the deficiencies are very old - first years of 2000. In this regard, the Meeting proposed a complete review of the GANDD by the Regional Officers on each Air Navigation Area in close coordination with each CAR and SAM State.

1.2.3 In this respect, the Chairperson of GREPECAS requested the support of three States to the Regional Offices, and Brazil, Cuba and Dominican Republic indicated their support on this issue.

1.2.4 Additionally the Secretariat recalled the GREPECAS Conclusion 17/12 (attached for ease of reference) regarding the proposed revised procedure for deficiencies (HIRA), which was reviewed by the ANC. The Conclusion looks to adjust or change the current Deficiency Methodology and Procedures. The Secretariat committed to follow up this proposal preparing an IOM to the ICAO Secretary General and the ANC. Additionally the Secretariat recalled GREPECAS Conclusion 17/12 that mentioned that the Air Navigation Commission (ANC) review the Regional Office Manual (ROM) in order to adequate and change the methodology and procedures.

1.2.5 Based on the above, the Meeting formulated the following Draft Conclusion:

<table>
<tr><td colspan="3">DRAFT CONCLUSION
PPRC/05/01 FOLLOW-UP TO AIR NAVIGATION DEFICIENCIES PROCEDURE AND EFFECTIVENESS OF THE GANDD</td></tr>
<tr><td colspan="2">What:
That, in order to have a better use and effectiveness of the Air Navigation (AN) deficiency procedure and mechanism in the CAR/SAM Regions:

a) ICAO follow-up on the proposed revised AN deficiency procedure as proposed in Conclusion GREPECAS 17/12 by 30 November 2019;

b) the ICAO NACC and SAM Regional Offices coordinate with the respective States to immediately update their deficiency status in the GANDD by 30 November 2019; and

c) States inform the NACC and SAM Regional Offices of their concern on the effectiveness of the current AN deficiency procedure and the GANDD by 30 November 2019.</td><td>Expected impact:
☐ Political / Global
☒ Inter-regional
☒ Economic
☒ Environmental
☒ Operational/Technical</td></tr>
<tr><td colspan="3">Why: To ensure effectiveness of Air Navigation Deficiency Management and State resolution</td></tr>
<tr><td>When: 30 November 2019</td><td colspan="2">Status: ☒ Valid / ☐ Superseded / ☐ Completed</td></tr>
<tr><td>Who: ☒ States ☒ ICAO ☐ Other:</td><td colspan="2"></td></tr>
</table>

Agenda Item 2 Proposal of Improvements to GREPECAS

2.1 Through WP/04 the Meeting was reminded of the "GREPECAS Improvement Proposal" sent to the States through the ICAO NACC and SAM Regional Offices since April 2019, which describes the improvements that the Presidency previously shared with all States, seeking to promote among the members an exchange of ideas and seek improvements for the benefit of the CAR and SAM Regions according to the purpose, goals and objectives of GREPECAS. **Appendix B** detailing the proposed improvements. To accompany the Note P/01 and P/03 were presented to the Meeting, in addition to the reference document called "*Draft of the GREPECAS Automated Management System*".

2.2 The proposal for improvements includes a Strategic Plan for GREPECAS, with the deliverable of an Automated Management System, donated by the Dominican Republic that would not have higher costs for the Regional Offices or the States; to be implemented between the year 2019 and the year 2022, which would facilitate the management of the coordinators and rapporteurs of the monitoring and measurement of the programs and projects of Air Navigation

2.3 The proposal was approved, leaving as evidence the draft document signed by the Chairman of GREPECAS and the Secretariat, representing CRPP States; which formalizes the beginning of the remaining tasks for the development of automated system.

2.4 For this purpose, the following draft Conclusion was formulated

<table>
<tr><td colspan="3">DRAFT CONCLUSION
PPRC/05/02 PROPOSAL FOR IMPROVEMENTS TO GREPECAS</td></tr>
<tr><td colspan="2">What:
That, in order to increase the efficiency and effectiveness of GREPECAS for the benefit of the States and the CAR and SAM Regions,

a) the Member States of GREPECAS approve in principle the proposal for improvements proposed by the GREPECAS Chairpersonship included in Appendix B to this report;

b) the Regional Offices and the CAR and SAM States implement the improvements in the period 2019-2022 (Action Plan) by 30 November 2019; and

c) the proposal on GREPECAS improvement management be formalized with the signature of the Chairperson of GREPECAS and ICAO on behalf of the GREPECAS States by 30 November 2019.</td><td>Expected impact:
☒ Political / Global
☒ Inter-regional
☐ Economic
☐ Environmental
☒ Operational/Technical</td></tr>
<tr><td colspan="3">Why: To implement improvements to increase efficiency and effectiveness of GREPECAS</td></tr>
<tr><td colspan="2">When: by 30 November 2019</td><td>Status: ☒ Valid / ☐ Superseded / ☐ Completed</td></tr>
<tr><td colspan="2">Who: ☒ States ☒ ICAO ☒ Other:</td><td></td></tr>
</table>

Agenda Item 3 Global, Intra- and Inter-Regional Air Navigation Activities

3.1 Analysis of the recommendations of the ICAO 13th Air Navigation Conference (AN/Conf-13)

3.1.1 WP/05 provided the Meeting information on the outcome of the Thirteenth Air Navigation Conference (AN-Conf/13) held in Montreal from 9 to 19 October 2018.

3.1.2 The Conference issued 52 recommendations included in Appendix A to the Working Paper. Moreover, the paper showed details of the actions that should be implemented by States, as well as by ICAO, and indicated the actions that have already been taken by both the NAM/CAR (Conclusions NACC/DCA/8/1 and NACC/DCA/8/5) and SAM (Conclusion RAAC 16/03) Regions. The Secretariat indicated that both Regional Offices have followed up on the valid conclusions concerning these matters.

3.1.3 WP/09 presented an analysis of the sixth edition of the Global Air Navigation Plan (GANP), ICAO Doc 9750, explaining details of the structure of several levels (global-regional-national), the vision of the GANP, the "efficiency ambitions" ("performance ambitions"), the restructure of the ASBU framework nd the Basic Constituent Elements (BBBs). The Secre4tariat also performed an on-line presentation of the GANP portal explaining its different components: https://www4.icao.int/ganpportal/

3.1.4 During the deliberations, the Secretariat proposed that the Meeting urge States to become familiarized with the GANP portal. Moreover, it suggested that an Ad hoc Group be created to analyse the gap that may exist between the new GANP and the Regional Air Navigation Plan with a view to update the latter. Likewise, it urged States to analyse and work to compile data for the definition of the KPIs proposed by the sixth edition of the GANP. In this regard, the following draft conclusion was adopted:

<table>
<tr><td colspan="3">DRAFT CONCLUSION
PPRC/05/03 USE OF NEW ICAO GANP PORTAL</td></tr>
<tr><td colspan="2">What:
That, in order to benefit from the interactive application of the new GANP (https://www4.icao.int/ganpportal/), States:
a) use the new GANP portal; and
b) review the use and information of the GANP portal to provide the ICAO NACC and SAM Regional Offices any feedback for improving or enhancing the portal by 30 December 2019.</td><td>Expected impact:
☐ Political / Global
☒ Inter-regional
☐ Economic
☐ Environmental
☒ Operational/Technical</td></tr>
<tr><td colspan="3">Why: To benefit from the new ICAO GANP Portal as a tool for implementation</td></tr>
<tr><td>When: 30 December 2019</td><td colspan="2">Status: ☒ Valid / ☐ Superseded / ☐ Completed</td></tr>
<tr><td>Who: ☒ States ☐ ICAO ☐ Other:</td><td colspan="2">ICAO NACC/SAM Regional Offices; United States,</td></tr>
</table>

3.1.6 It was noted that for both regions, the ANI/WG and SAMIG implementation groups are working on these tasks, although in an independent but coordinated manner. The Meeting emphasized the importance of identifying the level of compliance with the GANP by the current GREPECAS mechanism, in particular with the sixth edition of the GANP. It was noted that in the NAM/CAR Regions, the ASBU Task Force may work on this assessment. United States, through the ANI/WG ASBU-TF volunteered to work in this matter. In this regard, the following draft conclusion was formulated:

<table>
<tr><td colspan="4">DRAFT CONCLUSION
PPRC/05/04 GAP ANALYSIS FOR COMPLIANCE WITH THE 6TH EDITION OF THE GANP</td></tr>
<tr><td colspan="3">What:
That, in order to ensure GREPECAS continues its work for full compliance with the 6th edition of the GANP, identifying the needs that CAR and SAM States to evaluate their air navigation system implementation; by 31 December 2019, the Secretariat, Brazil and United States

a) define a gap analysis/ cross reference compliance table considering existing GREPECAS mechanism;
b) identify the necessary adjustments/ update of the existing CAR/SAM e-ANP Volume I and II in compliance to the GANP; and
c) propose the most appropriate GANP key performance indicators to evaluate the implementation.</td><td>Expected impact:
☐ Political / Global
☒ Inter-regional
☒ Economic
☒ Environmental
☒ Operational/Technical</td></tr>
<tr><td colspan="4">Why: Ensure compliance with 6th edition of GANP</td></tr>
<tr><td>When:</td><td>31 December 2019</td><td colspan="2">Status: ☒ Valid / ☐ Superseded / ☐ Completed</td></tr>
<tr><td>Who:</td><td>☐ States ☒ ICAO ☒ Other:</td><td colspan="2">Brazil and United States</td></tr>
</table>

3.2 Preparation for the 40th Session of the ICAO Assembly

3.2.1 Through IP/08, the Secretariat presents information on the preparation of States for the 40th session of the ICAO Assembly, which includes the development of Working Papers in the air navigation area.

3.2.2 Through WP/20, the United States presented a general description of its areas of interest of the 40th session of the ICAO Assembly. The Meeting took note of the information presented.

3.2.3 IP/06 presented by United States supplemented by the information presented in WP/20.

3.3 Follow-up to the implementation of inter- and intra-regional activities

3.3.1 The Meeting noted information contained under WP/07 on interregional air navigation activities among the CAR and SAM Regions carried out since the PPRC/4 Meeting to date, as described below:

- with respect to the Aeronautical Message Handling System (AMHS) Interconnection (Decision GREPECAS/18D/2A), United States has completed the tests with Brazil and the AMHS interconnection between the COM Centres of Atlanta and Brasilia. The Technical Letter between CORPAC (Peru) and FAA (United States) has already been signed for the establishment of the AMHS interconnection between the COM Centres of Atlanta and Lima, with the start of the tests scheduled for August 2019
- regarding the interregional aspects of AIDC implementation, the efforts focused on the establishment of communications between CENAMER - ACC Bogotá and CENAMER - ACC Guayaquil
- information was presented to the Meeting on the proposal of support for the MEVA III - REDDIG II interconnection, through "additional nodes" of the ground network (MPLS) of REDDIG II, notifying that United States has expressed the interest to implement this proposal. The SAM Regional Office has convened the Coordination Committee of REDDIG to deliberate on the matter, through a teleconference, which will be held on 21 August 2019
- interregional activities related to the implementation of ADS-B, PBN implementation andsSpace meteorology

3.3.2 P/02 continued the description of intra and interregional activities that were an initiative of the CAR Region and that covered activities in AIDC, ADS-B, and AMHS implementation and the status of improvement activities in the fields of AIM, ATFM and MET.

3.3.3 IP/02 reported that Chile terminates the implementation of RNAV 5 in continental airspace and RNAV 10 (RNP 10) in oceanic airspace, within the ATS routes optimization plan of the SAM Region.

3.3.4 IP/05 presented to the Meeting the status of the implementation of ATFM in Chile, the processes have been carried out and planned tasks to implement an effective establishment of this service in the airspace of its jurisdiction.

3.3.5 IP/09 presented the Meeting the Contingency Plan of the Air Traffic Services of Chile. The geographical position and the physical-natural characteristics make the territory of Chile highly vulnerable to extreme natural events. Earthquakes, volcanic eruptions, droughts and intense and concentrated precipitations that trigger floods and landslides have defined both the relief and the character of the people who inhabit it. The objective of the ATS Contingency Plan is to guarantee the safe, effective, continued and sustainable provision of air traffic service to civil aviation in the airspace under Chilean jurisdiction in the Flight Information Regions (FIR) of Antofagasta, Santiago, Puerto Montt, Punta Arenas and Easter Island in case of a temporary and unexpected situation that produces a degradation or a significant discontinuity in the services provided. Two levels of ATS contingencies are considered: Moderate ATS Contingency and Severe ATS Contingency.

Agenda Item 4 GREPECAS-RASG-PA Coordination Matters

4.1 Through P/06, a brief description of the improvements carried out by RASG-PA and the joint activities and tasks performed by RASG-PA and GREPECAS was provided. Among the relevant discussion of the last RASG-PA plenary meeting concerning coordination among both groups, the following was highlighted:

RASG-PA Activity	GREPECAS Activity	Status of implementation
Not-up-to-date Obstacle chart information Type A *	Consulted referred States for status and update	Ongoing- target date July 2019
Hot spot – Unstable approaches in Aruba*	Runway safety team implemented- Runway Safety Team implementation included in SAM/NACC Regional Office status list	Completed
Mid-Air Collision Group (MAC) - coordination	Large Height Deviation (LHD) by GTE- coordination	Ongoing coordination to enhance identification of causes
Risk assessment accomplished	Duplication/error of FPLs *	No Safety concern identified
Air Traffic Controller English Proficiency*	Future activity	To be implemented
Airport runway pavement improvement- enhancement of guidance*	Coordination for Guidance update	Ongoing
Sharing of Safety hot spots information	Provided to SAM IG to ANI/WG	Ongoing

Conclusion/Decision	Deliverable	Responsible	Follow-up	Status
RASG-PA ESC/31/C3 –RASG-PA GUIDANCE IN MAINTAINING RUNWAYS IN ACCORDANCE TO ICAO ANNEX 14 VOL. I ALACPA to keep the Guidance for maintaining runways of RASG-PA updated according to ICAO's Annex 14 in	Updated guidance for maintaining runways of RASG-PA	ALACPA	ALACPA to keep the Guidance for maintaining runways of RASG-PA updated, according to ICAO's Annex 14 in the three available languages (English, Spanish and Portuguese)	Valid

Conclusion/Decision	Deliverable	Responsible	Follow-up	Status
the three available languages (English, Spanish and Portuguese).				
RASG-PA ESC/31/D7 – TURNING VFR APPROACHES INTO IFR USING PBN ATR In coordination with RASG-PA Secretariat and GREPECAS to develop a Safety Case regarding turning VFR approaches into IFR using PBN.	Study Case regarding turning VFR approach into IFR using PBN.	ATR	Safety Case regarding turning VFR approach into IFR using PBN.	Valid

4.2 Under WP/08 the Meeting was informed on how a greater application of project management procedures in GREPECAS and RASG-PA would benefit coordination among both groups, as a complement of the improvements that the GREPECAS Chairpersonship suggests to the Meeting.

4.3 It was recognised that the communication activities among GREPECAS and RASG-PA are very important in view that their projects and processes have common points, i.e. capacity and efficiency of the global civil aviation system concerning its impact on safety. The benefits of a suitable identification by the stakeholders of a project and a strategy that includes the mechanisms and frequency of communications aimed at facilitating the process allowing to know the status of converging projects was also recognised.

4.4 Moreover, the Meeting noted and agreed with RASG-PA proposal derived from the RASG-PA/10 plenary meeting held in Quito, Ecuador from 20 to 21 June 2019 for GREPECAS and RASG-PA to establish an MoU allowing to share sensible security information among both groups and its protection from a use different from improving safety.

Agenda Item 5 Review of GREPECAS Programmes and Projects and Subsidiary Groups

5.1 Projects under the PBN Programme (B0-APTA, B0-FRTO, B0-CDO and B0-CCO)

5.1.1 WP/10 presented a report on the evolution of the implementation activities related to the projects of Performance Based Navigation (PBN) Programme for the CAR and SAM Regions. Regarding Project A1 - PBN operational implementation, it was indicated that in order to help the CAR Region to comply with PBN implementation, the NACC Regional Office used the resources of Project RLA/09/801 — Multi-Regional Civil Aviation Assistance Programme (MCAAP) to carry out a Sub-project to develop and implement a Performance-Based Navigation (PBN) Airspace Concept Document for the CAR Region with the requirements of a model structure for airspace and Terminal Areas (TMAs) that allows continuous flow in the upper and lower airspace of contiguous Flight Information Regions (FIRs) and TMAs, proposing a possible solution to the complex structure of the FIRs in the CAR Region.

5.1.2 It was pointed out that Phase 1 of the project was completed, with the support of Cuba, Dominican Republic, Trinidad and Tobago and COCESNA, and the remaining phases are expected to be completed by the end of 2019, with the assessment of the different airspace and the implementation of TMAs.

5.1.3 With regard to PBN en route, it was informed that the Third ICAO/IATA/CANSO Performance-Based Navigation (PBN) Harmonization, Modernization and Implementation Meeting for the North American, Caribbean and South American (NAM/CAR/SAM) Regions reached 34 agreements for new routes and realignment or extension of Area Navigation (RNAV) 5 routes.

5.1.4 Moreover, it was informed that with the participation of SAM and CAR States at the ATSRO/10 meeting the regional/interregional route implementation plan was consolidated and the coordination for the effective implementation in both regions was adjusted. 57 proposals were declared accepted with dates of publication/effectiveness or feasible to complete coordination. At the same time, the meeting facilitated bilateral agreements, to address common interests concerning the flow of aircraft and ATS coordination.

5.1.5 Additionally, para la PBN on TMA, it was indicated that SAM States continue working on implementation and re-design of TMA based on PBN, concerning 57 spaces of TMAs in the region and that in May 2019, additional 26 had been implemented, which is 45%. Moreover, it was reported that there are PBN designs in progress in a set of 12 TMAs of Argentina, Bolivia, Colombia, Ecuador, Peru and Venezuela, which are foreseen to be completed by 2019.

5.1.6 The Meeting commented the Implementation of PBN SIDs and STARs, that in the ICAO iSTARS 3.0 website shows the status of implementation in 13 SAM States, out of a total of 213 runway thresholds reached in May 2019 with a PBN SID implementation of 66.7%, and PBN STAR of 51.2%.

5.1.7 It was further discussed that regarding the implementation of PBN approaches procedures implementation, to date there are 185 approach procedures with APV vertical guidance and/or LNAV minima only, out of a total of 213 runway thresholds (international airports), accounting for 3.2% progress with respect to 83.7% recorded in November 2018.

5.1.8 Finally, with regard to Project A2: *Air navigation systems in support of PBN*, of the SAM Region no progress has been made concerning the implementation of Ground Based Augmentation System (GBAS) technology in Brazil. It was noted that the SLS-4000 station is configured for use in Brazil for precision approaches only using the CONUS (Continental United States) risk model. In Argentina, ANAC and INVAP S.E. technology company developed an experimental precision approach GBAS system, which has been implemented for trials at the San Carlos de Bariloche International Airport. Considering that Project A2 SAM has already issued a guideline for GBAS, implementation, CAR Programme A was recommended to review its GBAS Project in order to adopt that guide for its implementation.

5.1.9 After this review, the valid version of Projects A (CAR and SAM) is presented in **Appendix C.**

5.1.10 WP /22 of IATA presented a proposal to harmonize the optimization of the CAR/SAM airspace, through the application of the Free Route Airspace (FRTO-B1 / 1 Free Route Airspace - FRA), as a transition strategy to the implementation of Direct Routes (FRTO-B0 - Direct routing (DCT), as it has been done by Colombia, Dominican Republic, Curacao and CENAMER.

5.1.11 Performance Improvement Area (PIA) 3 of the ASBU on the optimization of capacity and flexible flights through global collaborative ATM (Block B1-FRTO (Free-Route Operations): Free Route Airspace provides an unmatched performance in terms of flight trajectory efficiency through cooperative air traffic management.

5.1.12 The following are among the Expected benefits:

a) Improved predictability through the “File it – Fly it” concept.
b) Elimination of constrains caused by the fixed ATS-route network structure; congestion points will disappear.
c) No change shall be required to existing ATC procedures
d) Using the entire airspace as a ‘resource’ – traditional ‘unused airspace’ is made available to either civil or military users (through flexible and optimal use)
e) Enhanced planning flexibility for operators
f) Reduction in CO2

5.1.13 The SAMIG/23, ATSRO/10 and ANIWG/5 meetings decided to begin the analysis of the implementation of the Free Route Airspace through the development of a concept of operations, changing the current strategy of implementation of fixed routes, applying PBN It is important to bear in mind that the current Concepts of PBN Operations for the Airspace of the CAR and SAM Regions require to implement the Free Route Airspace. However, it still addresses the use of fixed routes based on PBN as the main strategy for the optimization of the en-route phase. A complete modification of the PBN Concept of Operations (CONOPS) of both Regions should be made.

5.1.14 The implementation of airspace for en-route operations is carried out by the Performance Based Navigation (PBN) Task Force of the ANI/WG and by the "new" Subgroup 1 of the SAM Airspace Study and Implementation Group, and both groups establish a harmonization strategy for their work to reflect a new method of implementation of en-route optimizations based on different strategies, being one of them Fee Route Airspace, taking into account that free routes must cross CAR and SAM FIR interface.

5.1.15 With a view to an optimization of the airspace of the CAR and SAM Regions and establishing a PBN framework, it would be convenient to change the name of the PBN Programme (B0-

APTA, B0-FRTO, B0-CDO and B0-CCO) to Airspace Optimization Programme (B0-APTA, B0-FRTO, B0-CDO and B0-CCO). Said suggestion shall be evaluated by the Coordinators of Programme A

5.1.16 Since 2018, Direct Routing (DCT) is being applied in Colombia, based on use of the published waypoints in the flight plans and operations in Bogotá and Barranquilla FIRs and it could be used as a transition to the Free Route Airspace implementation. Just for airline KLM between Guayaquil and Amsterdam, the use of DCT in Colombia resulted in a 269 ton of fuel savings and 851 tons of reduction in greenhouse gas emissions.

5.1.17 The Meeting was informed on IP/04 on planning activities for transition of nomenclature RNAV to RNP in the SAM Region. Additionally, it was informed of the actions that the CAR Region will take in this regard.

5.1.18 The Meeting was informed that ICAO has published Circular 353 in order to have a coherent naming convention that reflects the navigation application used on the approach, either RNP APCH or RNP AR APCH. Since the GREPECAS/18 meeting, high-level information was provided on the transition plan developed by ICAO. ICAO Regions were requested to apply the transition from RNAV to RNP in the regional plans and to ensure that sufficient time is assinged for this task. The following is the progress achieved:

FIRs	IAC	BLOCK	MONTH (4 WEEK)	PERIOD
FIR AMAZÔNICA	49	01	6.0	JAN/JUN 2020
FIR RECIFE	49	02	6.2	JUL 2020 / JAN 2021
FIR BRASÍLIA	49	03	5.4	FEB/JUL 2021
SRPV-SP	59	04	5.6	AUG 2021 JAN 2022
FIR CURITIBA (1)	63	05	5.9	FEB/JUL 2022
FIR CURITIBA (2)	47	06	3.9	AUG/NOV 2022
TOTAL	**316**		**33**	**2.9 YEAR**

State	Total PBN APTs	PBN APTs using the new name	% total PBN APTs	Total PBN Approaches	RNP (APCH)	RNP (AR)
Costa Rica	1	1	100.00%	3		2
Cuba	14	6	42.86%	27	11	
Mexico	63	20	31.7%	408	120	1

5.2 Projects under the ATFM Programme (B0-SEQ, B0-FRTO, B0-NOPS and B0 ACDM)

5.2.1 WP/11 presented the evolution of the a report on the implementation activities of the ATFM Programme projects. The deliverables of the programme of the ATFM Task Force of the ANI/WG for the CAR Region were indicated, The composition of the ATFM TF and the CANSO Air Traffic Flow Management Data Exchange Network for the Americas (CADENA) is the same for the CAR Region, and it was decided to work collaboratively and to develop a common work agenda, recognizing the different nature and approaches of each group, avoiding duplication of activities and pursuing the objectives of each Organization.

5.2.2 The Secretariat informed that a Workshop on A-CDM in the NACC Regional Office from the airport and Air Traffic Management (ATM) perspectives, and its use in ATFM to be held in Mexico (9 to 12 September 2019). The event's purpose is to exchange ideas on the regional initiatives required for the implementation of the ATFM in the CAR Region, taking as reference the CAR/SAM ATFM CONOPS. It is expected to reorient the regional plan for the implementation of the ATFM and identify the main obstacles and opportunities.

5.2.3 It was informed that the ATFM Task Force sent a survey to the States/Territories and International Organizations of the CAR Region to assess their capabilities with respect to the ATFM and the processes for managing the use of airspace. The results will be used to rethink the strategy related to the flexible use of airspace, through the update of the corresponding RPO of the RPBANIP.

5.2.4 Likewise, the paper indicated that the SAM States continue driving efforts to optimize and activate flow units/posts in Area Control Centres (ACCs), as a priority in the States that are affected by imbalances in demand/capacity at main Terminal Areas (TMAs).

5.2.5 The Meeting was informed that between 2017 and 2018, misuse of "flow control" NOTAMs as pseudo-ATFM measure not related with user impact assessments and not designed for temporary application, had dropped. During the first quarter of 2019, this practice was reinstated mostly due to contingencies or CNS systems limitations, which in turn significantly degraded ATS capacity. The SAMIG analysed this situation and guided States on the suitable application of the processes described under ICAO Doc 9971 OACI.

5.2.6 From the review of this paper, the Meeting deemed that the valid version of the projects of the Programmes B (CAR and SAM) are those shown in **Appendix D**.

5.2.7 Moreover, it was mentioned that horizontal cooperation between Brazil and Paraguay is being developed to activate ATFM operation in the Asunción FIR. Colombia, together with Ecuador and Peru, is also planning operating link ATFM initiatives. The NACC and SAM Regional Office jointly worked to update the CAR/SAM ATFM CONOPS. The Meeting formulated the following Decision:

<table>
<tr><td colspan="3">DECISION
PPRC/05/05 APPROVAL OF THE CONOPS ATFM CAR/SAM AMENDMENT</td></tr>
<tr><td colspan="2">What:
That, considering the need to update the interregional approach of ATFM implementation, based on experiences obtained in the CAR/SAM Regions States/Territories and International Organizations,
a) the Meeting approve the new version of the CAR/SAM CONOPS ATFM presented by the Secretariat (Appendix to WP/11); and
b) the Coordinators of the Programme take the relevant actions to review the respective work programmes as well as the regional handbooks and guidelines, based on the approved update of the CAR/SAM CONOPS ATFM by the GREPECAS/19.</td><td>Expected impact:
☐ Political / Global
☒ Inter-regional
☒ Economic
☒ Environmental
☒ Operational/Technical</td></tr>
<tr><td colspan="3">Why: To support the set of activities necessary to design and implement the ATFM systems of the CAR/SAM Regions</td></tr>
<tr><td>When: GREPECAS/19</td><td colspan="2">Status: ☒ Valid / ☐ Superseded / ☐ Completed</td></tr>
<tr><td>Who: ☐ States ☐ ICAO ☒ Other:</td><td colspan="2">Project Coordinators</td></tr>
</table>

5.3 Projects under the Automation and ATM Situational Awareness Programme (BO-RSEQ, B0-FICE, B0-SNET, B0-ASUR and B0-SURF)

5.3.1 Under P/02, the Secretariat presented the status of implementation of Programme C projects. The Meeting was informed on the progress of AIDC, ADS-B and ADSC/CPDLC implementation, emphasizing the radar data exchange among States and the new air-ground ground-ground communications field activities such as the Development of a new telecommunications network for the CAR Region and the development of a project to manage aeronautical frequencies to be used in the region for the current and future air navigation services.

5.3.2 **Appendix E** includes the valid versions of the work programmes of the CAR/SAM Projects of Programme C.

5.4 Projects under the Ground-ground and Air-ground Telecommunication Infrastructure Programme (B0-FICE and B0-TBO)

5.4.1 Under P/02, the Secretariat presented the status of implementation of projects D, describing deliverables corresponding to the documentation areas in support of AIDC implementation, proposals of mechanisms to minimize errors in the Flight Plans (FPL), documents to support ADS-B implementation and to share radar data among States, as well as for the use of the MEVA network by third parties to provide air navigation services. The Secretariat informed that projects C and D in the CAR Region are kept for a longer period and that new deliverables will be produced, as well as their

implementation plan that will be updated by November 2019, in line with the update plans for the CAR Region.

5.4.2 Under WP/13, the SAM Region presented information on the follow-up to the implementation of project activities under the ground-ground and ground-air communication infrastructure programme.

5.4.3 In this regard, the Region reported the following progress:

1. the SAM Region Digital Network is completely deployed
2. new firewall equipment will be implemented for all the nodes of the REDDIG network in order to strengthen its security
3. 18 new AMHS circuits were implemented, remaining only 10 AFTN circuits to be replaced to an AMHS interconnection
4. 12 AIDC connections were established
5. initiatives have been taken to manage flight plan errors
6. Existence of several States using ADS-B data or carrying out tests
7. A report on the study on the feasibility of satellite ADS-B use was presented

5.4.4 **Appendix F** includes the valid versions of the CAR/SAM Programme D projects.

5.5 Projects under the Aerodromes Programme (B0-SURF and B0-ACDM)

5.5.1 Under WP/14, progress on the *Aerodrome Safety and Certification Implementation Project* and the status of implementation of its activities and tasks were presented, proposing new tasks and activities in NAM CAR (Appendix A to WP/14) and in SAM (Appendices B and C of WP/14).

CAR Region

5.5.2 The NACC Regional Office has worked on its tasks and activities in order to assist the States to increase their number of certified aerodromes and solve the deficiencies to improve safety.

5.5.3 From 151 aerodromes with international operations in the Air Navigation Plan, 84 aerodromes have been certified to date. The figure increased from 43 aerodromes certified in March 2014 (28%) to 84 to date.

5.5.4 Common deficiencies in the States were identified in order to provide specific assistance in these fields and improve the certification process. These deficiencies are related to:

- Some States have not established a certification process
- Lack of human resources including an appropriate mix of technical disciplines given the size and scope of aerodrome operations in the State
- A process to review the validity of using an aeronautical study or risk assessment to justify an application for an exemption or exception has not been established
- Lack of SMS implementation

RST implementation in the CAR Region

5.5.5 As a follow-up to the Runway Safety Programme mandate on the establishment of coordinated, collaborative, and multidisciplinary efforts within ICAO, and between ICAO and its Runway Safety Programme Partners to promote the implementation of strategies aimed at reducing the number and severity of runway safety-related accidents and incidents on an on-going basis, in 2019 there are 73 aerodromes that have implemented a RST.

5.5.6 The NACC Regional Office initiated GoTeams in several States/airports in Central America and the Caribbean before 2014. Some States took the GoTeam as a pilot Project and replicated it in its State, as is the case of Mexico.

5.5.7 According to the Aerodrome Safety and Certification Implementation Project, the NACC Regional Office will continue to assist States in increasing the level of effective implementation focusing on those aspects that need support for creating a robust system.

SAM Region

5.5.8 Progress and challenges of the SAM Region were also exposed. Nowadays, there are 38 certified international aerodromes, representing 36.5% of the total (104). Although the certification growth rate is an average of 5%, in order to increase the pace, Appendix C to WP/14 included the proposal of an Assistance Project (part of SAM F Project activities) that would be available for States to benefit from which horizontal collaboration of other States (through assistance missions on the certification process) and at the same time provide On the Job Training (OJT) for national inspectors.

5.5.9 With regard to this proposal, United States mentioned the possibility of support through the use of aerodromes experts to train inspectors of both regions in United States or in the State. In this regard, the Secretariat also suggested the possibility that States may provide experts to accompany the assistance missions. In principle United States indicated their feastibility, considering that inspectors from United States cannot “certify” an aerodrome outside its county. The Secretariar clarified that this situation has been considered, in view that it applies to all the States and that the scope will be solely based on consulting and recommendations, and not on actions in the name of the receiving State.

RST implementation in the SAM Region

5.5.10 Regarding local Runway Safety Teams, currently the SAM Region has reported 37 implemented RSTs, and in 2018 the first Runway Safety Go Team was implemented in Panama City,and lessons learnt were noted from this mission for future Go-Teams.

5.5.11 The Meeting noted the progress presented under WP/14 and the support offered by United States.

5.5.12 **Appendix G** includes valid versions of the work programmes of the CAR/SAM Projects of the AGA Programme.

New proposals of ACDM Projects and aerodrome planning

5.5.13 WP/06, P/03 and P/04 presented the Meeting the proposal of two new projects within the SAM Region aerodrome programme. One of it is aimed at supporting the harmonized and scalable

implementation of Airport Collaborative Decision Making (A-CDM) (in support of the ATM Operational Concept) and the other Project on Aerodrome Planning is aimed to support States to plan the future aerodromes capacity to face the increasing demand.

5.5.14 During the deliberations, the Meeting discussed the convenience that said A-CDM Project be applied not only for the SAM but also for the CAR Region. In this regard, the Secretariat commented that there are benefits to carry out these projects jointly, but considering their applicability adjusted to the different realities, in view that A-CDM is not mandatory and it would bring greater benefits to aerodromes with capacity and saturation problems. This is a situation that, as opposed to the SAM Region, in the CAR Region many aerodromes do not have high traffic or have limited geographical conditions or visibility.

5.5.15 The Meeting reviewed the proposal of the Secretariat and adopgted the following decision:

<table>
<tr><td colspan="3">DECISION
PPRC/05/06 NEW PROJECTS UNDER THE AERODROME F PROGRAMME FOR THE CAR AND SAM REGIONS</td></tr>
<tr><td colspan="2">What:
That in order to ensure the provision essential services in order to obtain a seamless air navigation services in the area of aerodromes,
a) the Meeting approve two new projects under the aerodrome programme:
Project F2: Aerodrome Planning; and
Project F3: Airport CDM; and
b) the Coordinators of Programme F prepare document projects using as a reference those presented by the SAM Regional Office by GREPECAS/19, and projects be carried out in close coordination among both regions.</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☐ Operational/Technical</td></tr>
<tr><td colspan="3">Why: According to Doc 9854, the main challenge to aerodrome operators will be to provide sufficient aerodrome capacity, while the challenge for the ATM system will be to ensure that all available capacity is fully and efficiently utilized. In order to provide aerodrome capacity, the Project will support States to ensure future capacity (planning) and fully and efficient use of current capacity (A-CDM).</td></tr>
<tr><td colspan="2">When: GREPECAS/19</td><td>Status: ☒ Valid / ☐ Superseded / ☐ Completed</td></tr>
<tr><td>Who: ☐ States ☒ ICAO ☐ Other:</td><td colspan="2">Coordinators of Programme F</td></tr>
</table>

5.6 Projects under the AIM Programme (B0-DATM)

5.6.1 The Meeting reviewed WP/15 that presented the developments of activities carried out under Programme G on AIM. In this regard, it examined the following points.

SAM Region

5.6.2 Concerning project G1 – *e-TOD Implementation*, the Meeting observed a slow progress, highlighting the progress by Argentina, Brazil and Chile. The current status of implementation is shown in **Appendix H** to the report. The description of the Project is presented in **Appendix I** to the report.

5.6.3 With regard to Project G2 –*AIXM Implementation*, the Meeting was informed on the progress. It was reported that the AIXM Implementation Guides as well as the e-AIP Guide have been delivered by the Coordinator of the Project. Likewise, it was informed that Brazil has implemented a high percentage of the e-AIP, as well as Panama. Moreover, Argentina, Chile, Colombia and Venezuela have made important progress. Guyana, Suriname and Uruguay have planned the feasibility of implementing the e-AIP through technical cooperation with COCESNA. Paraguay has issued a bid for acquiring software to implement the e-AIP, while Ecuador has not progress in this regard. The description of project G2 is shown in **Appendix J** to the report.

5.6.4 Concerning Project G3 –*QMS/AIM Implementation*, the Meeting was informed that Brazil, Chile, Panama, Paraguay, Peru and Uruguay have implemented and certified QMS/AIM. Argentina, Bolivia, Colombia, Ecuador, Guyana, Suriname and Venezuela have not yet finalized the QMS/AIM implementation process. **Appendix K** shows the description of this Project G3 as well as of the current status of the implementation of States that have not yet finalized the process.

5.6.5 With regard to Decision GREPECAS 18/11, the SAM Region has established an implementation strategy, communicated to States of the SAM Region through State Letter ref. LT 2/8-SA259 Lima, dated 3 July 2019.

5.6.6 Additionally, the Secretariat urged the Meeting to establish an implementation strategy of Phase 2 of the Roadmap from AIS to AIM, an effective strategy for the continuous planning and the progress of the digitalization work. The main point of this strategy must be sensibilisation of civil aviation authorities and ANSP on implications of delays of implementation of the AIM and its impact on global priorities such as Performance-Based Navigation (PBN), Airport Collaborative Decision Making (A-CDM), Air Traffic Flow Management (AFTM), and SWIM among others.

CAR Region

5.6.7 Regarding the QMS and eTOD Projects of the AIM Programme, the Meeting was requested that they be considered as finalized, in view that they have complied with the requested developments, that for the specific case of the e TOD, it would be posed as work in terms of a Project with a greater scope to be perhaps defined in collaboration with ICAO Headquarters with involvement of its Technical Cooperation Bureau.

5.6.8 The Meeting was informed that a website is being developed in the NACC Regional Office, that will be enabled in 2020 and will be called "AIM TRACKING", which will present the updated status of each State in the Region regarding the different documentary elements, assistance programmes, etc.

5.6.9 Moreover, information was provided on the Collaborative Plan for the Transition to the AIM (draft), developed by the ICAO APAC Region and presented under Appendix C to WP/15.

5.6.10 For the CAR Region, the creation of a new Project for the Transition to AIM with the Terms of Reference (ToRs) and Work Programme presented in Appendix D to WP/15 for progress of the various 21 Steps of the Phases of the Roadmap for the Transition from AIS to AIM of ICAO.

Conclusions of AIM Projects

5.6.11 The Meeting, after analysing the reports of the G Projects pointed out the following:

a) e-TOD implementation is still a challenge. It would be necessary to request Headquarters the revision of this Standard;
b) the Regional Offices should review all the aspects of the G Projects and present an assessment to the Group by November 2019, identifying improvement opportunities and implementation strategies; and
c) more efforts should be made to initiate Phase 2 of the Roadmap.

5.6.12 Analizando las actividades y metas de los Proyectos del Programa de AIM, se comentó que varias actividades corresponden a las Oficinas regionales dentro de su programa regular de trabajo y que en vista de las actualizaciones y mejoras introducidas por el nuevo GANP, se adoptó la siguiente decisión:

<table>
<tr><td colspan="3">DECISION PPRC/05/07 REVIEW OF THE AIM PROGRAMME AND ITS PROJECTS</td></tr>
<tr><td colspan="2">What:
That the Coordinators of the Programme G (AIM) evaluate the status of the Programme and send the results to the PPRC by 30 November 2019, identifying opportunities of improvement and additional implementation strategies.</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Operational/Technical</td></tr>
<tr><td colspan="3">Why: Seek further efficiency and effectiveness when updating Projects G -AIM</td></tr>
<tr><td>When: 30 November 2019</td><td colspan="2">Status: ☒ Valid / ☐ Superseded / ☐ Completed</td></tr>
<tr><td>Who: ☐ States ☐ ICAO ☒ Other:</td><td colspan="2">Coordinators of the projects of Programme G</td></tr>
</table>

5.7 Projects under the Aeronautical Meteorology Programme (B0-AMET)

5.7.1 Under WP/16 and WP/28, the Secretariat informed the Meeting on the progress of the Projects of the MET field, noting the following:

5.7.2 The Second MET Project Meeting in 2017 reviewed the GREPECAS MET Projects considering the requirements introduced by Amendment 78 to ICAO Annex 3 and issued Conclusion CAR/SAM/MP1/2 - *MET Projects Update*, through which MET projects were harmonized in the Regions. GREPECAS/18 Meeting analysed the activities of MET Projects and noted the conclusions and challenges related to the execution of said projects.

Project H2 - implementation of meteorological watch for the monitoring of en-route severe phenomena, volcanic ash, tropical cyclones and the release of radioactive material

5.7.3 The description of the Project and the status of its activities was presented in Appendices A of WP/16 and WP/28. The Meeting was informed that in the context of the Project, the SIGMET exercise on Volcanic Ash carried out in the SAM Region in June of this year with the outcome shown in Appendix C to WP/16. In the CAR Region, the project has had limited development and the targets have been partially achieved, despite efforts to coordinate the activities. From 9 proposed activities, 4 have been implemented as scheduled, 3 have been started with delay, and 2 require mitigation measures.

5.7.4 Likewise, the Meeting was informed on the actions related to liberation of radioactive material. In this regard, it was reported that Argentina and Chile have a Contingency Plan. Additionally, Argentina presented the results of the drill carried out in 2018 by its State. Likewise, because this plan involves the ATM and CNS fields, the matter was taken to the SAM Implementation Group, that, when analysing the point, issued Conclusion SAM/IG/23-04.

5.7.5 Moreover, the Secretariat informed on the objective of improving the consistency, continuity and quality of the SIGMET information content in the SAM Region, when a phenomenon affects more than one FIR at the same time. In this regard, different existing options and the feasibility of delineating implementation agreements among the States of the Region for communication coordination among adjacent MWOs have been analysed, in the development of coherent and quality SIGMETs. Likewise, the Meeting was informed on a project carried out in coordination with the Regional Aviation Safety Group–Pan America (RASG-PA) to provide mitigation measures on the adverse effects to air navigation of severe weather phenomena. In the CAR Region, the approval of a 5-day regional Workshop was processed, in order to promote the procedures and templates standardization and harmonization for the preparation and dissemination of SIGMET information, increasing their availability and quality; the Workshop is scheduled for March 2020 and the Meeting was requested to participate with experts from the following entities: Tropical Cyclone Advisory Centres (TCACs), the Volcanic Ash Advisory Centre (VAAC), and the World Area Forecast Centre (WAFC).

H3-implementation of the quality management system for the provision of the meteorological service for international air navigation (QMS/MET)

5.7.6 **Appendix L** to this report includes the current status of QMS/MET implementation in the SAM Region. In the CAR Region, the project has been very active but the targets have been partially achieved despite the coordination efforts. From 9 proposed activities, 2 have been implemented as

scheduled, 4 have started with delay, and 3 require mitigation measures. Appendices B of WP/16 and WP/28 show a detailed description of the project.

5.7.7 The Meeting urged the States to comply with what was agreed under GREPECAS Conclusion 18/3 a and b and to participate more actively in the activities of the project.

Project H4-Optimization of OPMET exchange, including SIGMETs (WS, WV, WC, AND WR), warnings and meteorological alerts

5.7.8 The Secretariat informed that during the quarterly reports performed by the Brasilia International OPMET Data Bank (IODB), low efficiency was detected in some of the CAR/SAM States. In order detect the cause of this situation, it was agreed to perform tests of reception of OPMET messages to the IODB to verify if they have reached the server. Additionally, it has been observed that the OPMET Control Tables contain Aeronautical Meteorological Offices and Meteorological Surveillance Offices that are no longer active in the States. The Meeting noted Conclusion SAM/MP/04-01: OPMET Exchange Controls, requiring review and update of OPMET Exchange Tables.

5.7.9 The Meeting observed that the OPMET exchange in IWXXM format will become a standard on 5 November 2020. Therefore, States have been urged to adapt the AMHS terminals of aeronautical meteorology users in order to endow them with the ability to transmit and receive OPMET messages in the IWXXM GML format and to accelerate the interconnection in AMHS among the States to enable the exchange of OPMET messages in IWXXM GML format and thus comply with the standard.

Project H5 – Improvement to MET Services in Accordance with New Operational Requirements in Support to ATM

5.7.10 Regarding Project H5, active only in the Sam Regions, the Meeting noted that some States have implemented tasks related to MET support for a CDM, A-CDM and ATFM environment, such as Argentina, Brazil and Colombia. In this regard, Colombia provides "now casting" services for the TMA of Bogota and other support for the air navigation services. Brazil commented that, in the Air Navigation Management Centre, the aeronautical meteorology service has a coordinating position to support airflow management decisions.

Status of the amendments to Annex 3

5.7.11 The Meeting noted that in the last four years, Annex 3 to the Chicago Convention has been updated through amendments 77A, 77B and 78, consolidated in the nineteenth and twentieth editions. It was also informed of the main topics introduced and noted the new proposal for amendment circulated for State’s comments on 9 July 2019, which contains at least 13 relevant matters, such as the re-suspension of volcanic ash, the QMS/MET for meteorological services provision, the harmonization of SIGMET, among others.

5.7.12 The Meeting was informed about the Statistics recorded by the Online Framework (OLF) of the Universal Safety Oversight Audit Programme (USOAP) for the Compliance Checklist (CC) in the Electronic Filling of Differences (EFOD). With respect to Annex 3 for the States of the NAM/CAR Regions, they only reached 64.36% as of June 2019, indicating that some States do not successfully complete the SARPs amendment process and possible deficiencies of the meteorological service provision in the CAR Region.

5.7.13 La Meeting was also informed on the report of the Fourth Meeting of the ICAO Meteorological Panel (METP/4) reviewed by the ANC, which included the following recommendations for consideration of the PIRGS:

- METP/4 Recommendation 5/5: Plan and Roadmap for Meteorology in System Wide Information Management (SWIM)
- METP/4 Recommendation 5/10: Guidelines for the Implementation of OPMET Data Exchange Using IWXXM
- METP/4 Recommendation 6/2: Regional SIGMET guide (Updates)

5.7.14 The Meeting reviewed the guides and deemed it important to share the documents through the GREPECAS website.

Programme MET under the new edition of the GANP

5.7.15 La Meeting noted the sixth edition of the Global Air Navigation Plan (GANP) (ICAO Doc 9750) and of the METP experts analysis, that would implement a restructure of the Advanced Meteorological Information Thread AMET Blocks 0 and 1, including a different organization and distribution of elements to highlight the foreseen transition from a product-centric environment to an information-centric environment, as well as the migration to include MET in the future system-wide information management (SWIM).

5.7.16 Upgrades in the GANP will request a detailed revision of the MET Tables of CAR/ e-ANP Volumes I and II, as well as the start of the development of MET Tables for Volume III. In addition, a verification of the effective implementation of the essential MET national and regional services will be needed. Therefore, the following draft conclusion was formulated:

<table>
<tr><td colspan="3">DRAFT CONCLUSION
PPRC/05/08 REVIEW OF MET PROGRAMME AND ITS PROJECTS</td></tr>
<tr><td colspan="2">What:
That, Coordinators of the Programme H Projects assess the status of the Programme and send the results to the PPRC by 30 November 2019, identifying improvement opportunities and additional implementation strategies.</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Operational/Technical</td></tr>
<tr><td colspan="3">Why: To seek more efficiency and effectiveness with updates of the Programme MET and its projects.</td></tr>
<tr><td>When: 30 November 2019</td><td colspan="2">Status: ☒ Valid / ☐ Superseded / ☐ Completed</td></tr>
<tr><td>Who: ☐ States ☐ ICAO ☒ Other:</td><td colspan="2">Coordinators of the Programme H Projects</td></tr>
</table>

5.8 Progress report of the Scrutiny Group (GTE)

5.8.1 WP/17 presented a summary of the activities developed by the Scrutiny Group (GTE) since the of the GREPECAS/18 meeting, held in Dominican Republic in April 2018.

5.8.2 The GTE/18 meeting was held in Mexico in October 2018. This meeting This meeting reviewed the results on 2017 safety assessment (CRM) in RVSM airspace, statistics on LHD events in CAR/SAM Regions, and the identification of points with highest occurrences of LHD events in CAR/SAM Regions. The Meeting took note of the following issues to be reported to GREPECAS:

a) The lack of information from several States, regarding compliance with the information required by CARSAMMA to perform its duties. It was mentioned that, due to the impact to the safe provision of air traffic services, the lack of compliance with CARSAMMA information request may be considered a deficiency under the GANDD

b) Many of the required processes for LHD identification could not be performed due to the lack of registration of aircraft in the flight plan.

c) The Meeting considered appropriate to raise to GREPECAS the concern about the reporting by some States on the non-occurrence of LHD events (0 LHD), even when the adjacent FIRs present a considerable number of events induced by FIRs that have reported 0 events.

5.8.3 Moreover, the ICAO NACC and SAM Regional Offices, as a follow up on Conclusion GTE/18/2 on reduction of Code E LHD events related with human error, have developed bilateral and multilateral activities with States of both regions in order to reduce LHDs in FIRs identified with high LHDs. Moreover, combined coordination activities have been held with States and Territories in order to directly address significant event trends occurring in the boundaries of both regions (CAR/SAM), the target being achieving a significant reduction of LHDs in all the FIRs of both regions.

5.8.4 The SAM Regional Office has held meetings between the FIRs Cordova in Argentina and Antofagasta in Chile, and a meeting between the FIR Antofagasta and the FIR Lima. These meetings have helped to identify and implement specific actions that have had a positive impact in the LHDs reduction. A concrete example is the FIR Cordova – Antofagasta, which was one of the areas that presented more large height deviations in the South American Region, since the implementation of the automated transfer messages in March 2019, LHDs were completely eliminated.

5.8.5 Additional to the implementation of the automatized transfer messages between the ACCs, work is being done to improve training on ATS Inter-facility Data Communication (AIDC) utilization, the coordination with operators in the utilization of Automatic Dependent Surveillance - Contract (ADS-C), and the communications and surveillance infrastructure reinforcement, among other activities.

5.8.6 Also, the NACC Regional Office has prioritized the interaction between the FIRs of Curaçao and Santo Domingo. In this sense, the air navigation service providers of these FIRs took outstanding actions to be able to address the identified trends and generally improve the levels of safety and efficiency in the provision of their services, such as:

a) the RADAR data sharing between the two air traffic control systems was completed, which guarantees the total surveillance coverage at the transfer of control points of both FIRs;
b) the installation and operation of the rapid response communication line (known as "shout line"); and
c) operational letters of agreement were reviewed to improve the interaction between both FIRs, including procedures for the revision of safety deviations among them.

5.8.7 Additionally, the NACC and SAM Regional Offices are carrying out joint coordination activities with States/Territories of their respective regions, to directly address significant trends of events that occur within the boundaries of both Regions. In this sense, coordination teleconferences have been carried out between Colombia (Barranquilla FIR) and Curaçao, to agree on mitigation actions at the control transfer points between both airspaces. As part of these initiatives to address the occurrence of the LHDs taken by the NACC and SAM Regional Offices, the root causes of these events are identified and analysed and mitigation actions are proposed.

5.8.8 The NACC and SAM Regional Offices have identified the possibilities of the GTE of becoming a mechanism to measure safety performance in the upper airspace of the CAR/SAM Regions and being an intelligence information generator that supports safety, efficiency and implementation tasks carried out by States and ICAO. Along with this initiative, the ICAO Integrated Aviation Analysis (IAA) Section has been working on the development of a pilot project to use the ICAO Safety Information Monitoring System (SIMS) for the automation of RVSM airspace movement data gathering and for availability of information that support CAR/SAM States with the safety, efficiency and implementation related initiatives. Taking into account Conclusion GREPCAS/18/21, the Meeting formulated the following Draft Conclusion:

DRAFT CONCLUSION PPRC/05/09	**SUPPORT TO THE ACTIVITIES OF THE GTE AND OF ICAO TO IMPROVE SAFETY IN THE RVSM AIRSPACE OF THE CAR/SAM REGIONS**
What: That, considering the importance of the activities of the GTE and its work potential: a) CAR/SAM Region States support and participate in the GTE's activities in coordination with the ICAO Regional Offices for the reduction of Large Height Deviations (LHDs) of the CAR/SAM Regions; b) CAR/SAM Regions States/Territories and International Organizations support the activities developed by the GTE and ICAO to improve automation of RVSM airspace movement data gathering and for availability of information and the generation of information that support the safety, efficiency and implementation related tasks; c) the GTE assess and present GREPECAS/19 a proposal of expanded terms of reference to become a regional mechanism to measure safety performance in the upper airspace of the CAR/SAM Regions; and	**Expected impact:** ☐ Political / Global ☒ Inter-regional ☐ Economic ☐ Environmental ☒ Operational/Technical

d) GREPECAS and the GTE take the necessary measures to ensure that the safety related data received, analysed and reported by the GTE be maintained and used so as to promote safety enhancement without negative impact to the participating operator and/or air navigation service providers by the GREPECAS/19 meeting.	
Why: to improve safety level in the RVSM airspace of the CAR/SAM Regions, to support the safety, efficiency and implementation initiatives.	
When: GREPECAS/19	**Status:** ☒ Valid / ☐ Superseded / ☐ Completed
Who: ☒ States ☒ ICAO ☒ Other:	GTE

5.8.9 Similarly, the GTE discussed the coordination work currently carried out with the RASG-PA MAC Group. In this regard, the Meeting suggested that the GTE may analyse the MoU proposal presented by RASG-PA to share data among both groups.

5.9 Progress report of the CAR/SAM Regional Bird/Wildlife Hazard Prevention Committee (CARSAMPAF)

5.9.1 WP/18 presented the progress of the work of CARSAMPAF, Committee that organizes annual bird/wildlife hazard prevention events. It also works in an independent manner on training and migration notification system initiatives

5.9.2 The Secretariat highlighted the importance of working with States as well as the industry and with aerodrome operators on subjects aimed at mitigating the risk which is relatively high in some States, especially with bird's North-South migration, as well as reinforcing the implementation of wildlife Committees in States and international aerodromes.

5.9.3 However, the Secretariat expressed concern in view that during the last events, lack of coordination between the group's Chairpersonship and ICAO has been noted, as well as the fact that the group is carrying out independent activities that are not supported by ICAO. Bearing in mind the origin of the group, this situation leads to confusion by some States of such activities with ICAO initiatives, As such, the Secretariat stressed that such interpretation does not justify the inappropriate use of the name and logo of ICAO.

5.9.4 In order to address this situation and keep the support brought from ICAO to CARSAMPAF, the Secretariat indicated that said Committee should have a formal agreement with ICAO, which should be adjusted to the working principles of the organization, as per the document *ICAO Policy on Interactions with External Parties*.

5.10 Progress report of the Latin American and Caribbean Association of Airfield Pavements (ALACPA)

5.10.1 WP/12 presented the Meeting the progress of the work of ALACPA, the result of their annual events (in which ICAO participates), their input to RASG-PA (through the update of the Runway Maintenance Guide of ACI LAC) and other inputs to the process such as:

- Comparative analysis or design guidance for the use of asphalt concrete dense mix with grooving versus PFC versus SMS
- Comparative analysis of software for Pavement Management Systems
- Position paper on the inconvenience of the IRI (International Roughness Index) for runway requirements and a proposal on how to evaluate runway roughness
- Translation of technical documents for helping ALACPA´s members

5.10.2 The Secretariat stressed out the importance of the work with States and industry with regard to the improvements to the runway conditions that make a positive impact to safety, capacity and efficiency of air navigation. The Secretariat also highlighted that despite the fact that the group has a high level agreement with ICAO, it is necessary to review it so as to adjust it to the principles of the *ICAO Policy on Interactions with External Parties.*

5.10.3 In this regard, the Secretariat already contacted the group and expects to receive proposals in the following months.

Agenda Item 6 Monitoring and Reporting of the Implementation of Air Navigation in the CAR/SAM Regions

6.1 Development and implementation of National Air Navigation Plans

6.1.1 Under WP/23, the Meeting recalled that GREPECAS Conclusion 15/1 that urged States of the CAR/SAM Regions to prepare their National Air Navigation Plans (NANPs) and reference was made to GREPECAS Conclusion 18/4.

6.1.2 Likewise, the Meeting highlighted that the regional and national planning process should be aligned and used in order to identify those elements that best provide solutions to the operational needs identified and build a seamless system. Planning at a regional and national level, aligned to the Global Plan should attain the objective set forth in Doc 9854: “Achieve an interoperable global air traffic management system, for all users during all phases of flight, which meets agreed levels of safety, provides for optimum economic operations, is environmentally sustainable and meets national security requirements".

6.1.3 The Meeting highlighted the results obtained under the approaches adopted by the Regional Offices through the ANI/WG/ASBU/TF and the SAM/IGSAM with regional and State workshops respectively. In the CAR Region, the current implementation status is shown in **Appendix M**. Additionally, in the SAM Region, the Secretariat provided technical support to Bolivia, Guyana and Suriname to prepare their NANPs. The implementation status is shown in **Appendix N**.

6.2 Other relevant air navigation implementation

6.2.1 Under WP/24 the Secretariat informed the Meeting that the sixth edition of the GANP has been prepared and circulated to States for review and comments. After this process and the analysis of the inputs by the States, the Air Navigation Commission recently agreed to present the draft GANP sixth edition for approval by the ICAO Council. Additionally, it was informed that the 40th ICAO Assembly will back up the new GANP version.

6.2.2 The Meeting was also informed that ICAO Headquarters, in order to standardize, is currently working on a template of Vol. III of the Regional Air Navigation Plans. In this sense, after the approval by Headquarters of this template, it will be necessary to harmonize the regional and intra-regional requirements in order to set the basis for the future Vol. III of the CAR/SAM Regional Air Navigation Plan, that will later serve as a basis for the States’ NANPs. Moreover, the Meeting was recalled that in accordance with AN/Conf-13 Recommendation 1.1/1 item h), the NANP template is being prepared, and it was recommended that once it is finalized, it be used in order to standardize the NANPs.

6.2.3 The Secretariat informed the Meeting that the draft 6th edition of the GANP has been analysed in different fora of the CAR and SAM Regions such as the NACC/DCA/9, ANI/WG/5 (NAM/CAR Regions) and ANFS/6, SAM/IG/23, MP/3 and SAM/AIM/12 (SAM Region) meetings. The Meeting noted that the Secretariat plans to work with the sixth edition of the GANP. In this context, from 5 to 9 August 2019, a workshop on indicators will be held; in the beginning of 2020 a workshop on GANP implementation and work sessions with each one of the implementation groups will also be held to ensure diffusion and appropriation of the sixth edition of the GANP.

6.2.4 After analysing the information, the Meeting deemed appropriate to formulate the following draft Conclusion:

<table>
<tr><td colspan="2">DRAFT CONCLUSION
PPRC/5/10 DEVELOPMENT OF VOLUME III OF THE CAR/SAM GANP IN PREPARATION OF NATIONAL AIR NAVIGATION PLANS</td></tr>
<tr><td>What:
That, in Coordination with the NACC and SAM Regional Offices,

a) the States support the Secretariat in the preparation of Vol. III of the CAR/SAM e-ANP and the revision of Vols. I and II of the aforementioned document to align it to the GANP - Sixth Edition, considering the catalogue of KPI contained in the GANP;

b) the States, in coordination with the NACC and SAM Regional Offices, after completing the preparation and revision of the three CAR/SAM e-ANP Volumes, elaborate or, if applicable, update their NANP, in order to align them to the GANP initiatives, including the requirements of all the areas that involve air navigation services;

c) the States forward the developed or updated NANP to the ICAO NACC and SAM Regional Offices by the second semester of 2021;

d) ICAO process the approval of Vol. III of the CAR/SAM e-ANP by the third quarter of 2020;

e) ICAO, once Vol. III is approved, replace the Regional Air Navigation Plans based on performance by Vol. III of the CAR/SAM e-ANP, and present it to the PPRC/6; and

f) ICAO provide technical support to the States that request it for the development of their NANP and supervise the delivery of said plans to the ICAO NACC and SAM Regional Offices.</td><td>Expected impact:
☐ Political / Global
☒ Inter-regional
☐ Economic
☐ Environmental
☒ Operational/Technical</td></tr>
<tr><td colspan="2">Why: In order to align the Regional Air Navigation Plan (e-ANP CAR/SAM) to the GANP and support the preparation and updating of the National Air Navigation Plans.</td></tr>
<tr><td>When: By 2021</td><td>Status: ☒ Valid / ☐ Superseded / ☐ Completed</td></tr>
<tr><td>Who: ☒ States ☒ ICAO ☐ Other:</td><td></td></tr>
</table>

6.2.5 Additionally, the Meeting considered that this draft conclusion supersedes GREPECAS conclusions C/17-8, C/18-4 and C/18-7.

6.2.6 Under IP/07, United States emphasized the regulatory requirement for all aircraft operating within its domestic airspace to be equipped with Automatic Dependent Surveillance – Broadcast (ADS-B) Out equipment by 1 January 2020, in accordance with U.S. Code of Federal Regulations (14 CFR). This requirement would affect all flights in the designated airspace, and therefore it is important to to prepare the aviation community and prevent any operational disruptions

6.2.6 Finally, the Secretariat, through P/02, indicated that in the CAR Region there is an important progress in the implementation of the CNS area and it was informed that this was discussed at the ANI/WG 05 meeting of this year, indicating that important operational benefits for the region were obtained, benefitting from this implementation level. In this regard, the Meeting discussed the definition procedure of the new projects based on previous valid information that correctly reflects the reality and the needs of the States and also the operational objectives of the region, as well as the attainment of operational benefits of reduction of longitudinal separations among aircraft, the implementation of agreements and valid procedures to share information and aeronautical data and an important impact on the reduction of $CO_{2.}$ emissions.

Agenda Item 7 Analysis of the Emerging Threats to Air Navigation

7.1 ICAO's perspective on cyber-security and cyber-resilience

7.1.1 The Meeting was informed by the Secretariat under WP/26, considering the different actions to be implemented, that they will be reviewed and discussed within the Secretariat in order to define actions and coordination deemed relevant among the stakeholders of ICAO and other identified parties.

7.2 Other emerging threats to air navigation

7.2.1 Under WP/19, Chile presented the advantages and benefits of the implementation of Performance-Based Communication and Surveillance (PBCS) in the SAM Region.

7.2.2 Chile also provided information on the PBCS concept, that provides a framework for the management of performance of communications and surveillance in accordance with internationally accepted specifications; together with the PBN concept, that allow raising levels of safety and maximize the operational benefits of the emerging technology that supports ATM operations.

7.2.3 Considering that in 2008 the Easter Island FIR was still assigned to the APAC Region, Chile began its participation in the Informal Coordinating Group of the ATS of the Pacific South (ISPACG). Consistently, starting from 2013, the Oceanic Area Control Centre of Chile incorporated the use of Data Link to its Controller Pilot Data Link Communications (CPDLC) and Automatic Dependent Surveillance - Contract (ADS-C). From 2016, ISPACG working plan began to be called *Pacific FIRs Seamless PBCS Planning Chart* , which objective is to collaborate with the development of the concept and operational implementation of PBCS inside the Asia Pacific Region.

7.2.4 It was discussed that the application PBCS in the Oceanic airspace is conceptually considered in the SAM PBIP 1.5, under the attachment CONOPS PBN SAM. Nonetheless, it must be emphasized that the efficiency in aircraft separation is a priority when there is a significant flight density as is the case of the NAT Region.

7.2.5 In this regard, the Meeting agreed that the subject of implementation and optimization of the South Pacific Oceanic airspace be incorporated in Vol. III of the eANP, and recalling IATA's proposal on free routes FRTO (WP/24) the following Decision was adopted in order to review the current GREPECAS projects for the inclusion of PBCS and FRTO concepts::

DECISION **PPRC/05/11**	**REFORMULATION OF GREPECAS PROGRAMMES AND PROJECTS**
What: That, considering the forthcoming approval of the sixth edition of the Global Air Navigation Plan (GANP) that will present a new configuration of modules, conductors, elements and enablers and KPI under the ASBU methodology, the Secretariat; a) study the reformulation of the current GREPECAS programmes and/or projects in order to assess the incorporation of the implementation activities of module FRTO of the 6th edition of the GANP, as well as the implementation of PBCS and Free Route Airspace (FRA) concepts; b) study the harmonisation of proposed implementation concerning the development of the CAR/SAM eANP, Vol. III, and the work programmes of the ANI/WG and SAM/IG; and c) present the results of these activities to GREPECAS/19.	**Expected impact:** ☐ Political / Global ☒ Inter-regional ☒ Economic ☒ Environmental ☒ Operational/Technical
Why: To address the need to examine the implementation of FRTO and PBCS concepts.	
When: By GREPECAS/19	**Status:** ☐ Valid / ☐ Superseded / ☐ Completed
Who: ☐ States ☒ ICAO ☐ Other:	

7.2.7 The Meeting was informed under IP/10 recommendations/results on the emerging subjects identified and discussed during the 13th Air Navigation Conference, specifically.

- Operations above Flight Level 600
- Operations below 1000 feet
- Remotely piloted aircraft system (RPAS)
- Cyber resilience
- Other emerging issues impacting the global air navigation system including unmanned aircraft systems

Agenda Item 8 Organisation of GREPECAS and Preparation of GREPECAS Plenary

8.1 The Secretariat presented WP/21 with some adjustment proposals to the organization of GREPECAS and coordination with RASG-PA based on the terms of reference of GREPECAS.

8.2 The Secretariat mentioned that the aforementioned ToRs may serve as a basis for the operations of the PIRG and that they may expanded in order to maintain flexibility and efficiency, taking into account that the adopted ToRs shall be approved by the President of the Council and may be included in the relevant PIRG handbook in support to the implementation of the *Global Air Navigation* Plan (GANP) (Doc 9750) taking into account aspects of the *Global Aviation Safety Plan* (GASP) (Doc 10004) and the *Global Aviation Security Plan* (GASeP) by ensuring effective coordination and cooperation between States and stakeholders.

8.3 The ICAO Council requested all PIRGs and Regional Aviation Safety Groups (RASGs) to optimize and better coordinate their work to ensure the best use of resource and enhance State's participation in benefit of the planning and implementation to support States' compliance with ICAO Standards and Recommended Practices (SARPs) and Regional/Global Plans. In this sense, it was proposed to convene a joint PIRG-RASG Meeting, and a proposal was made to reorganize GREPECAS and RASG-PA meetings including several improvements to current GREPECAS handbook in particular on the participation at the meetings, the ToRs (adjustments, additional terms), GREPECAS-RASG-PA coordination and reporting, among others.

8.4 The Secretariat recalled that in 2020, the GREPECAS plenary is to be hold in accordance with GREPECAS Procedural Handbook. In this regard, and in view of the need to coordinate the adjustment proposals with RASG-PA, as well as to evaluate such proposals by the Chairpersonship and GREPECAS Member States, the Meeting adopted the following draft conclusion:

DRAFT CONCLUSION **PPRC/05/12**	**EXTRAORDINARY TELECONFERENCE FOR THE REVIEW OF THE ADJUSTMENT PROPOSAL OF GREPECAS AND COORDINATION WITH RASG-PA**
What: That, to allow a joint evaluation of the adjustments proposed under WP/21 among the GREPECAS members, the Secretariat and the Chairpersonship of GREPECAS, and to allow the timely coordination with RASG-PA, the Secretariat: a) organize and prepare an extraordinary follow-up teleconference by mid-November 2019 to discuss such adjustments; b) coordinate with RASG-PA Secretariat the aforementioned adjustment proposal;	**Expected impact:** ☐ Political / Global ☒ Inter-regional ☐ Economic ☒ Environmental ☒ Operational/Technical

c) inform the GREPECAS members of the results for their approval by **20 December 2019**; and d) prepare the results of this discussion for GREPECAS/19.	
Why: To seek greater efficiency and effectiveness of GREPECAS by updating several organization aspects of the Group and its coordination with RASG-PA.	
When: 20 December 2019	**Status:** ☒ Valid / ☐ Superseded / ☐ Completed
Who: ☒ States ☒ ICAO ☐ Other:	

Agenda Item 9 Other Business

Tropical cyclones developed in the Western South Atlantic

9.1 The Meeting was informed under WP/32 on tropical cyclones developed in the last decades in the Western South Atlantic. The Secretariat indicated that the World Meteorological Organization (WMO) informed the SAM/MP/3 meeting that the ICAO METP WG-MOG/9 analysed the development of the Tropical Storm "Iba" off the east coast of Brazil some weeks before (in March 2019). The Working Group was notified that, since the South Atlantic was not currently under the area of responsibility of any TCAC, there was uncertainty within the WAFCs as to whether to include TC-related information on the WAFS SIGWX forecasts, if TS "Iba" had developed into TC "Iba". Moreover, the WMO requested the SAM/MP/3 to analyse the existence or not of an aeronautical requirement for tropical cyclone advisory information in the Western South Atlantic to be provided by designated Tropical Cyclone Advisory Centres (TCAC).

9.2 The Secretariat informed that the establishment of the aeronautical requirement is done through a Regional Air Navigation (RAN) agreement. Additionally, when observing the currently existing distribution of the TCAC areas of coverage, it is clear that the Western South Atlantic region is not under the new area of responsibility of any TCAC. Moreover, the Meeting was informed that the existing TCACs are Regional specialized meteorological centre (RSMC) of WMO, and therefore, expanding the coverage areas of one of them should be managed in coordination with the WMO.

9.3 The Secretariat informed the Meeting that in case of absence of tropical cyclone advisory information issued by a TCAC, the possibility of not counting with tropical cyclone SIGMET information is highly probable, since SIGMET for TC should be based on TC advisory information, in accordance with ICAO Annex 3, Chapter 7, paragraph 7.1.4.

9.4 The Secretariat informed that the SAM MP/3 meeting, when analysing this information and the history of Tropical cyclones developed in the Atlantic coast of Brazil provided by the WMO, recommended that a request be forwarded to the PPRC and through it to GREPECAS to support an aeronautical requirement to establish tropical cyclone advisory services for the Western South Atlantic. Brazil, during the SAM/MP/3 meeting, as the main affected State, requested the approval of the aeronautical requirement of tropical cyclone advisory for the Western South Atlantic and additionally asked that a TCAC currently providing service expand its responsibility area in order to cover the area in view of the experience that they have in this task.

9.5 The Meeting observed that the designation of a TCAC is included in Volume I of the e-ANP, and therefore the expansion of the coverage area of an existing TCAC or the designation of a new TCAC will imply the amendment to Volume I of the CAR/SAM e-ANP.

9.6 Bearing in mind all the aforementioned points, the Meeting decided to adopt the following draft conclusion:

<table>
<tr><td colspan="3">DRAFT CONCLUSION
PPRC/05/13 INCLUSION OF THE AERONAUTICAL REQUIREMENT OF TROPICAL CYCLONE ADVISORY INFORMATION FOR THE WESTERN SOUTH ATLANTIC</td></tr>
<tr><td colspan="2">What:
That, considering the occurrence of tropical cyclones in the Western South Atlantic, and given the absence of SIGMET by tropical cyclones for this event due to the lack of advisory information on tropical cyclones, ICAO,

a) in coordination with the World Meteorological Organization, take the necessary actions for the designation of a Tropical Cyclone Advisory Centre (TCAC) to cover the area between Equator and the 30° South parallel, limited by the continental blocks of Africa and South America by GREPECAS/19; and

b) once the designation of the new Tropical Cyclone Advisory Centre has been approved, proceed with the amendment of the CAR/SAM e-ANP, Vol. I.</td><td>Expected impact:
☒ Political / Global
☒ Inter-regional
☐ Economic
☐ Environmental
☒ Operational/Technical</td></tr>
<tr><td colspan="3">Why: To provide advisory overage on tropical cyclones for the Western South Atlantic</td></tr>
<tr><td colspan="2">When: GREPECAS/19</td><td>Status: ☒ Valid / ☐ Superseded / ☐ Completed</td></tr>
<tr><td colspan="2">Who: ☐ States ☒ ICAO ☐ Other:</td><td></td></tr>
</table>

Global Reporting Format for Runway Conditions

9.7 The Secretariat also presented IP/03 with information on the new provisions of the Global Reporting Format (GRF) provisions, which is a requirement for the implementation by States by November 2020.

9.8 Moreover, IP/03 showed a summary of the new provisions and responsibilities of stakeholders (that include aerodrome operators, air traffic services, the AIM, air operators and aircraft manufacturers), of the methodology, the strategy of ICAO to support States as well as an appendix with some available resources. Likewise, it was indicated that a forthcoming event related to this subject will be held in the SAM Regional Office in August of 2019 and an event is planned for the CAR Region in 2020.

Next Meeting of GREPECAS

9.9 As a final topic, the Secretariat mentioned that the next GREPECAS meeting, in order to retake its normal cycle as a plenary after the Assembly of ICAO, will convene a plenary meeting of GREPECAS/19 in 2020, approximately scheduled for July. In this regard, Paraguay expressed its interest of hosting the GREPECAS/19. The Meeting thanked Paraguay for hosting this event and the Secretariat will coordinate the plenary of 2020.

FOLLOW-UP TO OUTSTANDING CONCLUSIONS AND DECISIONS – FORMULATED BY PREVIOUS GREPECAS MEETINGS CONSIDERED VALID BY GREPECAS/18

Conc/Dec and Strategic Objective[1]	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up and Remarks	Responsibility	Deliverable	Action by the ANC	Status and Reporting/ Completion Date
C 17/8 A, B and E	Inclusion of regional performance-based implementation plans in the new air navigation plan (eANP)	That, taking into account the individual regional performance-based implementation plans, the ICAO NACC and SAM Regional Offices include the corresponding sections of those plans in the new electronic CAR/SAM Air Navigation Plan (eANP), Volume III.	The drafting of CAR/SAM Air Navigation Plan (eANP), Volume III is underway and is expected to be completed by mid-2018, since the PPRC/4 meeting postponed the publication of Vol. III until the sixth edition of the GANP is published, and formulated Decision 4/3 in this regard.	ICAO	CAR/SAM electronic Air Navigation Plan (eANP), Volume III with the inclusion of ICAO NACC and SAM regional performance-based implementation plans.	Noted	Superseded by Conclusion PPRC/05/10
C 17/12 A and B	Revision of the ICAO uniform methodology for the identification, assessment and reporting of air navigation deficiencies.	That ICAO consider conducting a comprehensive revision of the uniform methodology for the identification, assessment and reporting of air navigation deficiencies, identifying opportunities for improving both the database as well as the process itself, in order to generate a more efficient and effective process, with greater participation of the users, and taking into account the existing imitations of the Secretariat for the identification of deficiencies through State missions.	The plan for the revision of the ICAO uniform methodology for the identification, assessment and reporting of air navigation deficiencies is being reviewed by the Air Navigation Bureau (ANB). Taking into account that ICAO had not yet conducted the revision,	ICAO	The plan for the revision of the ICAO uniform methodology for the identification, assessment and reporting of air navigation deficiencies is being reviewed by the Air Navigation Bureau (ANB)	It was noted that this request was in line with the plan of the Secretariat to review the uniform methodology for the identification, assessment and reporting of air	Valid Follow-up by conclusion PPRC/05/01

[1] Strategic Objectives: *A – Safety; B – Air navigation capacity and efficiency and E- Environmental protection*

Conc/Dec and Strategic Objective[1]	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up and Remarks	Responsibility	Deliverable	Action by the ANC	Status and Reporting/ Completion Date
			the PPRC/4 meeting deemed it important for ICAO to complete the task as soon as possible so that States, Territories, International Organisations and ICAO may expedite the treatment of these deficiencies.			navigation deficiencies during 2015. No progress reported by ICAO in this regard.	
GREPECAS/18 C-18/1 A & B	Actions for ATFM Implementation in the CAR Region	That, States and Territories of the CAR Region, in their ATFM implementation projects: a) implement as soon as possible, ATFM Positions (FMP) or ATFM units (FMU) in order to avoid an imbalance between capacity and demand, either by scheduled or by unforeseen events; and b) ICAO NACC Regional Office take the corresponding actions to develop a proposal for amendment to Doc 7030 concerning ATFM procedures and ATC minimum separation for aircraft transfer between adjacent Control Centres (ACC) counting with overlying radar coverage, as applicable, informing PPRC/4 meeting on the progress of such actions.	- Through ANI/WG ATFM Task Force work is being performed to support ATS service suppliers in the CAR Region, with the identification of their capacity needs and development for the ATFM implementation. - ICAO NACC Regional Office developed an amendment proposal to the ATFM Operational	a) States and Territories of the CAR Region b) ICAO NACC Regional Office	a) ATFM Positions or ATFM units b) PfA pending	Note was taken.	Valid

Conc/Dec and Strategic Objective[1]	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up and Remarks	Responsibility	Deliverable	Action by the ANC	Status and Reporting/ Completion Date
			Concept for the CAR/SAM Regions. CONOPS had been approved				
GREPECAS/18 D/2 A	Establishment of a Working Group to obtain better AMHS operational use	That, in order to exploit AMHS potentialities and take advantage of its operational use: a) a working group is formed by Brazil, Dominican Republic, United States and D Programme coordinators in the CAR and SAM Regions for ground- ground and air-ground communications infrastructure; and b) the working group will work through virtual meetings and will prepare a strategy to ensure AMHS operational use, providing it to the Region disposal as soon as practicable	NAM/CAR concluded the AMHS systems implementation in the entire region. Currently, the AMHS connection in SAM States has been agreed. No joint work has yet been done between the two regions. All SAM States have implemented their AMHS COM centres. The establishment of P1 connections (AMHS) between the COM centres in the region is in process. Currently (19 June 2019), 18 of 28 planned AMHS connections have been established. Two connections were concluded between regions: Brasilia	Secretariat	Working Group-strategy to ensure AMHS operational use	Note was taken.	Valid

Conc/Dec and Strategic Objective[1]	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up and Remarks	Responsibility	Deliverable	Action by the ANC	Status and Reporting/ Completion Date
			– Madrid, Atlanta (FAA) – Brasilia and Atlanta (SITA) – Brasilia/Ezeiza.				
GREPECAS/18 C/3 A y B	Revision of the MET Programme and its tasks	That, a) QMS/MET implementation be measured by certification, through a QMS certifying firm on aeronautical meteorology services; b) States that have obtained QMS/MET system certification, submit a copy of their certificates to the Secretariat;	States in the CAR Region are invited to comply with the agreed actions by GREPECAS/18 numeral b).	States	a) Measurement of QMS/MET implementation b) copy of certificates	Note was taken.	Valid
GREPECAS/18 C/4 A,B & E	Development of air navigation plans aligned with the GANP and the regional performance-based air navigation plans	That, the CAR/SAM Regions States that have not yet amended or developed their National Plans aligned with the Global Air Navigation Plan (GANP) (4th edition) and the RPBANIP and SAM PBIP, complete them shortly in order to harmonize the implementation and facilitate the interoperability of systems and inter and intra-regional air navigation systems and services.	NAM/CAR region has elaborated 16 air navigation plans; in 2019 is planned the elaboration of six pending air navigation plans. SAM Region has elaborated 6 air navigation plans and 7 are in the elaboration process.	States	Completed National Plans aligned with GANP	Note was taken.	Superseded by Conclusion PPRC/05/10
GREPECAS/18 D/5 A & B	Improved data collection process for the treatment of deficiencies reported by IFALPA and IATA	In order to improve the data collection process for the treatment of deficiencies reported by IFALPA and IATA, the NACC and SAM Regional Offices: a) starting on the second half of 2016, will hold teleconferences with IATA and IFALPA to share and validate the information on the deficiencies identified by these organisations; and b) will inform their accredited States, via teleconferences, about the deficiencies identified in order to seek their resolution and/or the adoption of the corresponding action.	During the ANI/WG/05 Meeting, IATA was requested to provide their information contributions to ICAO more frequently.	NACC and SAM Regional Offices:	a) teleconference b) report on deficiencies	Note was taken.	Valid

Conc/Dec and Strategic Objective[1]	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up and Remarks	Responsibility	Deliverable	Action by the ANC	Status and Reporting/ Completion Date
GREPECAS / 18 C/6 A & B	Resolution of aeronautical meteorology deficiencies	That, in order to resolve aeronautical meteorology deficiencies associated to its personnel, and in order to have in their staff aeronautical meteorologists that meet the training requirements of the World Meteorological Organization, CAR/SAM States and Territories that present this deficiency: a) develop and conduct professional training courses for aeronautical meteorologists, aligned with the BIP-M contained in WMO Publication No. 1083, in partnership with universities, CATCs or tertiary non-university training institutions that meet education quality standards; b) create cooperation links with the permanent representatives of their States to the WMO in order to have access to WMO-approved personnel remote training courses offered by universities and international institutes; c) develop and implement a programme to link university meteorological staff or technical personnel with the aeronautical meteorology units of air navigation services in the short and medium term; and d) inform the respective ICAO Regional Offices at GREPECAS/18 about their plans to develop and conduct aeronautical meteorology training courses aligned with the BIP-M contained in WMO Publication No. 1083.	a) Honduras coordination with Cuba for the development of the PIB-TM; b) Mexico prepares a homologation plan in coordination with the WMO, which will show results in the medium term. c) That States and Territories of the CAR Region comply with the agreed actions by GREPECAS/18, numeral d).	States and Territories	Training courses, cooperation links, programme, report to Regional Offices	Note was taken.	Valid
GREPECAS/18 D/7 A, B & E	Postponement of the approval of VOL. III of CAR/SAM eANP	That, taking into account that ICAO is preparing the updated version of the GANP for 2019 and the importance of aligning Volume III to the requirements thereof, a) The Secretariat defers the distribution of Vol. III of the CAR/SAM e-ANP until completing its alignment with the sixth version of the GANP; and b) Since the GANP will address the performance-based implementation issue in more detail in its sixth edition, the States are urged to continue using the Regional Performance-Based Implementation Plans (SAM-PBIP and RPBANIP) for drafting their national air navigation plans.	The CAR Regional Performance-Based Air Navigation Implementation Plan (RPBANIP ver 4.0) was reviewed and updated as a basis for Vol. III of the ANP. Coordination will be initiated with the SAM	a) Secretariat b) States	a) Deferred distribution of Vol. III eANP b) Use of RPB implementation plans	Note was taken.	Superseded by Conclusion PPRC/05/10

Conc/Dec and Strategic Objective[1]	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up and Remarks	Responsibility	Deliverable	Action by the ANC	Status and Reporting/ Completion Date
			Office.				
GREPECAS/18 C/8 A & B	Greater support from States to AGA issues and projects	That States show a stronger commitment and take more effective action in support of GREPECAS AGA Projects, and designate AGA experts as focal points by 30 November 2016 in order to support the implementation of Aerodrome Certification activities.	Few States responded to the conclusion: Costa Rica, Cuba, and El Salvador. New approach on AGA Programme approved to enhance State participation	States	Designated AGA Experts	Note was taken.	Completed
GREPECAS/18 D/9	AD HOC GROUP TO ANALYSE GREPECAS - RASG-PA COORDINATION IMPROVEMENTS	That, in order to identify possible improvements in GREPECAS – RASG-PA coordination, the establishment of an ad hoc group, formed by Bolivia, Brazil, Chile, Dominican Republic, Trinidad and Tobago and United States, led by ICAO, is agreed, with the purpose of: a) studying opportunities for improving coordination between GREPECAS and RASG-PA; b) performing its tasks through electronic media; and c) submitting its recommendations to the ICAO Secretariat by 31 August 2018.	Proposals by the Ad hoc group members provided under WP. The joint work with the GREPECAS Chairman for the provision and execution of the group improvements continues.	Secretariat	Opportunities for improvement coordination and recommendations.	Note was taken.	Completed
GREPECAS/18C/10	FOLLOW-UP TO THE IMPLEMENTATION OF A39 RESOLUTIONS RELATED TO AIR NAVIGATION	That CAR/SAM States, a) resort to regional organisations for the establishment of the required mechanisms to address legal or institutional issues that might hinder CNS/ATM implementation; b) amend their ANPs, taking into account the GANP 2015 and the regional performance-based implementation plans, and aligned with ASBU; c) inform air navigation service providers and aerodrome operators of the need to fulfil the commitments derived from Article 28 of the Chicago Convention, and of the importance of quality in the aforementioned services; d) include policies and action plans to address	d) It has not been included in the Regional or Individual contingency plans.	States	a) Establishment of mechanism to address legal/ institutional issues b) Amended ANPs c) ANSP and aerodromes operators informed d) policies and action plans	Note was taken.	Completed

Conc/Dec and Strategic Objective[1]	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up and Remarks	Responsibility	Deliverable	Action by the ANC	Status and Reporting/ Completion Date
		cases of unlawful interference in their area of responsibility, in their air navigation and aerodrome contingency plans, if not done yet, and inform the Regional Office thereof no later than the PPRC/5 meeting; e) partner with aviation providers, operators, and stakeholders at national and regional level for the establishment of procedures to mitigate cyber threats to the aviation system; and f) publish differences in their aeronautical information publications (AIPs) and use the electronic filing of differences (EFOD) to report them to ICAO.			included e) procedures to mitigate cyber threats f) differences published in AIPs		
GREPECAS/18 D/11	CHARTING DEFICIENCY STRATEGY	That the task forces in charge of GREPECAS Programme G, in coordination with ICAO, address deficiencies in aeronautical charting should phase 2 of a regional implementation strategy be needed.	A State Letter has been sent to the CAR States for the review and update of Aeronautical Charts.	Task Forces	Addressed deficiencies.	Note was taken.	Valid
GREPECAS/18 D/12	RNAV TO RNP CHARTING TRANSITION	That the task forces in charge of GREPECAS Programme A develop a Regional implementation strategy for the transition of RNAV to RNP approach chart as a matter of priority.		Task Forces	Developed strategy.		Valid
GREPECAS/18 C/13	SAFETY MANAGEMENT IMPLEMENTATION	That, in order to support the implementation of safety management, CAR/SAM States, international and regional organisations share tools and examples that support effective safety management implementation, to be posted on the Safety Management Implementation (SMI) website.	State promotion has been made and States had taken actions under the SSP matters	States, international and regional organisations	Tools shared.	Note was taken.	Completed
GREPECAS/18 C/14	ENHANCEMENT OF SOUTH ATLANTIC (SAT) GROUP STRUCTURE	That a study be promoted on formalising the SAT group structure and the possibilities of a better coordination with the NAT Region.	Special meeting NAT/SAT done in Jan 2019 and actions and collaboration had been agreed to enhance SAT	International and regional organizations	Study.	Note was taken.	Completed

Conc/Dec and Strategic Objective[1]	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up and Remarks	Responsibility	Deliverable	Action by the ANC	Status and Reporting/ Completion Date
GREPECAS/18 C/15	INTERFACE CONTROL DOCUMENTS FOR AIDC IMPLEMENTATION	That: for the implementation of the AIDC service between adjacent automated centers, it shall be adopted: a) AIDC/ASIA PAC Protocol Version 3.0 as the base document for the AIDC interconnections between the adjacent Control Centers between the CAR and SAM Regions. In the same way that it is the basis for interconnections in the SAM States; and b) that the CAR Region and the States adjacent to the United States use the NAM/ICD Protocol Version E or higher as the basis for its implementation.	The NAM/CAR region has implemented 39 operational interphases; 12 are being proven and 14 more are planned; three more are in implementation status and two more are planned. In the SAM Region 76 AIDC communications are planned: 58 regional and 18 inter-regional. Currently (19 June 2019), 12 are operational and 10 are pre-operational (all in SAM Region).	a) States b) CAR Region and the States adjacent to the United States	a) Adopted AIDC/ASIA PAC Protocol Version 3.0 b) use of the NAM/ICD Protocol Version E or higher	Note was taken.	Completed
GREPECAS/18 C/16	SHORT-TERM IMPLEMENTATION BY THE STATES OF AIDC FUNCTIONALITY	That: Radar data are shared between the FIRs of Curacao, Venezuela, the Dominican Republic, Ecuador and Central America. The States that possess the automation capacity installed in their ATC systems will promote the interconnection and start-up of their AIDC connections in the short term. It is invited to lead this initiative to the States of Guatemala, El Salvador, Nicaragua, Costa Rica, Panama, Ecuador, Brazil, Argentina and Colombia. In the ATC systems update projects, the integration requirements with their adjacent FIRs are integrated within the technical/operational requirements.	Currently, Curacao and Dominican Republic are sharing radar data. Cuba and the United States are in the implementation process of the NAM/ICD Phase II. Belize and	States	Shared radar data	Note was taken.	Valid

Conc/Dec and Strategic Objective[1]	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up and Remarks	Responsibility	Deliverable	Action by the ANC	Status and Reporting/ Completion Date
			Costa Rica are in implementation process of the AIDC/PAC with COCESNA. COCESNA and Ecuador have signed a technical cooperation agreement for radar data sharing and facilities for the installation of VHF communications. Nine SAM States (Argentina, Brazil, Chile, Colombia, Ecuador, French Guyana, Panama, Peru and Uruguay) have already implemented their automated systems with enabled AIDC. Three States (Bolivia, Guyana and Surinam) do not count with AIDC enabled functionality.				

Conc/Dec and Strategic Objective[1]	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up and Remarks	Responsibility	Deliverable	Action by the ANC	Status and Reporting/ Completion Date
GREPECAS/18 C/17	MEASURES TO REDUCE FLIGHT PLAN ERRORS	That: Considering the discussions regarding the problems to solve errors in flight plans and their negative impact in automated coordinations, and taking note that the correct presentation and processing of flight plans is essential for ADS-B, AIDC, ATFM implementation, among other concepts and functionalities, and considering that the errors in flight plans among the different FIRs generate LHDs that should be treated as a short term regional problem, the Meeting urged: a) NAM/CAR/SAM States and IATA to extensively discuss the problems in the AIDC Implementation Meeting of all the regions, to be carried out in Lima, Peru, from 16 to 29 April 2018; b) States to instruct their representatives assisting to the Lima meeting, to integrate local and regional solutions that could permit to solve these problems in a short term in the region; and c) States and IATA to commit themselves to implement mechanisms to solve errors in flight plans that may result of the meeting in Lima, before the end of December 2018.	NAM/CAR Region through de development of measurements and statistics of the flight plans errors has found that the adopted measures in the last two years has considerably reduced the errors produced in the Region and has taken the decision to adopt specific measures to determine the cause of the rest of the errors. Central America, Cuba and United States have already enabled a system to reject flight plans in operation and are working on the standardizatio n of the rejecting messages so that all users	a) NAM/CAR/SAM States and IATA b) States c) States and IATA	a) Extensive discussion b) Integrated solutions c) Implemented mechanisms to solve errors	It was mentioned that this subject has been addressed in a collaborativ e manner among States, industry and ANSPS. RASG-PA will follow-up proactively to this subject and the GREPECA S results.	Valid

Conc/Dec and Strategic Objective[1]	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up and Remarks	Responsibility	Deliverable	Action by the ANC	Status and Reporting/ Completion Date
			receive the same rejecting message indicating the same error. The main initiatives that have been adopted in SAM Region are centralization of the received flight plans, with manually or automatized error treatment, the establishment of agreements with operators (airlines) to file directly their flight plans in order to avoid duplicity, and the implementation of feedback messages to the flight plans originators through ACK and REJ messages. During the SAM/IG/23 Meeting (Lima, 20 to 24 May 2019), Conclusion SAM/IG/23-02, Syntax				

Conc/Dec and Strategic Objective[1]	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up and Remarks	Responsibility	Deliverable	Action by the ANC	Status and Reporting/ Completion Date
			Standardization and ACK and REJ format messages for the FPL, was agreed to create a working group for the proposal of a regional and inter-regional standard.				
GREPECAS/18 C/18	MERGING OF PROJECTS F1 AND F2 INTO A NEW PROJECT F1	To gain efficiency, Projects F1 and F2 of the GREPECAS Aerodromes and Ground Aids Programme (AGA) will be merged into a single Project F called "Safety implementation and aerodrome certification project "		Secretariat	Merged Project F	Note was taken.	Completed
GREPECAS/18 C/19	AERODROME CERTIFICATION PLAN	In order to better support and assist CAR and SAM States/aerodromes with the aerodrome certification process, the CAR/SAM States/Territories should send a 3-year plan to the respective ICAO Regional Office for the certification of their aerodromes, taking into account their contribution to the total of the Region	States had taken note and are coordinating with ICAO Regional Office	States	3-year plans	Note was taken.	Completed
GREPECAS/18 D/20	MODIFICATION OF THE GREPECAS PROCEDURAL HANDBOOK	That, in order to reflect the rotation procedure for the GREPECAS and RASG-PA Secretariats, the Meeting decided to: a) modify the GREPECAS Procedural Handbook as follows: "9.2.1 The GREPECAS Secretariat will be provided by ICAO (NACC or SAM Regional Director). The senior ICAO Regional Director will assume the GREPECAS Secretariat." "9.2.2 The Regional Director acting as GREPECAS Secretary may not serve simultaneously as Secretary of the Regional Aviation Safety Group – Pan America (RASG-PA), whose duties shall be assumed by the Regional Director of the other Region."	Informed through State Letter ref. E.OSG - NACC73143 dated 2 May 2018	Secretariat	GREPECAS Procedural Handbook modified	Note was taken.	Completed

Conc/Dec and Strategic Objective[1]	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up and Remarks	Responsibility	Deliverable	Action by the ANC	Status and Reporting/ Completion Date
		Note: Existing paragraph 9.2.1 to be renumbered as 9.2.3.; b) charge the Secretariat with coordinating as needed for these changes to be reflected in the RASG-PA ToRs; and c) conduct additional reviews and changes as needed for updating the handbook.					
GREPECAS/18 C/21	SUPPORT TO GTE AND CARSAMMA ACTIVITIES TO IMPROVE THE ANALYSIS OF INFORMATION ON DEVIATIONS IN RVSM AIRSPACE	That, following actions be carried out in order to improve the analysis of information on deviations in RVSM airspace: a) States/international organisations and CARSAMMA, in coordination with ICAO Regional Offices, carry out activities to improve the reception and processing of information on deviations in RVSM airspace; b) CARSAMMA and the GTE exchange information and closely coordinate with the implementation groups coordinated by ICAO Regional Offices, in order to strengthen implementation activities that will help reduce LHD occurrences in CAR/SAM FIRs; c) States/international organisations, in coordination with CARSAMMA and ICAO Regional Offices, take the necessary measures to avoid the operation of non-RVSM aircraft, and coordinate with the relevant parties for proper flight plan completion for the operation of State aircraft in RVSM airspace; and d) GTE submit the plans for the aforementioned activities and their status of implementation at the PPRC/5 meeting.	Still valid; it is still in progress. Specific actions have been performed to reduce the LHD in the most critical aspects. The first focus has been on the TCPs of the FIRs Curaçao and Santo Domingo, obtaining the RADAR data sharing and the shout lines implementation. It is expected that these measures will eliminate the LHD. For the SAM Region, following up this conclusion, both offices have developed bilateral and	a) States/international organisations and CARSAMMA b) CARSAMMA c) States/Intl.Org. d) GTE	a) Improved reception and processing of information b) Reduction of LHD occurrences c) operation of non-RVSM aircraft avoided d) Submitted plans.	Note was taken.	Valid

Conc/Dec and Strategic Objective[1]	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up and Remarks	Responsibility	Deliverable	Action by the ANC	Status and Reporting/ Completion Date
			multilateral activities to address at the FIRs frontiers in specific areas where a high number of LHD events take place, and each Office has identified and prioritized, within their own area of responsibility, the main "hot spot" that must be dealt with under this strategy; up until this moment, the SAM Office has hosted meetings between FIRs in Cordova in Argentina and Antofagasta in Chile, and another meeting between the FIR in Antofagasta and the FIR Lima.				
GREPECAS/18 C/22	APPROVAL OF THE AMENDMENT TO CARSAMMA TERMS OF REFERENCE AND OF THE GUIDANCE MANUAL FOR	That, taking into account that safety in CAR/SAM airspace is a priority for ICAO, the States/international organisations, CARSAMMA, and all stakeholders: a) approve the amendment to the Terms of Reference (ToRs) to include the processing of lateral and longitudinal deviations within the scope	Completed in GREPECAS/18	States/international organisations, CARSAMMA, and all stakeholders	a) Approved amendments b) Approved Guidance Manual c) Support from Brazil		Completed

Conc/Dec and Strategic Objective[1]	Title of Conclusion/Decision	Text of Conclusion/Decision	Follow-up and Remarks	Responsibility	Deliverable	Action by the ANC	Status and Reporting/ Completion Date
	POINTS OF CONTACT (POC)	of CARSAMMA. To this end, CARSAMMA shall prepare a project to be submitted to the GTE/18 meeting for the inclusion of the safety assessment of horizontal deviations, including the method of analysis, the collision risk model to be used, the establishment of a target level of safety, and the guidance material to be used by points of contact (POC); b) approve the Guidance Manual for Points of Contact (POCs) accredited to CARSAMMA; and c) request Brazil/DECEA to provide the necessary support to allow CARSAMMA fulfil its new responsibilities derived from the amendment of the TORs.					

APPENDIX B
GREPECAS IMPROVEMENT PROJECT

Design of the Methodology for Follow-up and Systematized Performance Measurement of the Implementation and the Impact on the NACC-SAM Region States

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Executive Summary

The CAR-SAM Planning and Implementation Regional Group (GREPECAS) was established by the ICAO Council in 1990 in accordance with the Recommendation of the Second CAR/SAM Regional Air Navigation Meeting of 1989.

In recent years, a stagnation has been noticed in the achievement of regional goals due to the lack of a follow-up methodology for actions set forth in the different GREPECAS programmes and projects, emerging from the different Regional Performance Objectives (RPOs) of the Regional Performance-Based Air Navigation Implementation Plan (RPBANIP), which in turn is the result of the alignment with the Global Air Navigation Plan (GANP); this has caused a drop in the implementation level of the States, as it is increasingly difficult to keep up with the actions, and also because clear deliverables and responsibilities have not been established.

In the recently concluded GREPECAS meeting held in May of this year, in Punta Cana, Dominican Republic, a new Chairpersonship of the Group was selected, with the consequent change of Secretariat; which has entailed the normal analysis of the situation, which allows incorporating the necessary changes, triggering the reactivation of the activities, and achievement of the goals set.

For these reasons, it is logical to understand the commitment assumed by the GREPECAS Chairpersonship with the efficiency, the professionalism, and compliance with the standards.

In this regard, one of the main compliance tools that GREPECAS takes into account consists of the implementation of a methodology that allows an efficient management of its duties, in order to follow-up on the obligations undertaken with the States.

In this regard, we have found a disproportion in the analysis of the existing results, since the final benefits of the obligations undertaken have not been measured, because it indicates, first of all, that 90% of them are related to implementation. That is, they refer to whether the implementation is carried out or not, measuring the efficacy instead of measuring the effectiveness or the subsequent benefits of the same. The rest of the implementation efforts measure compliance with the regulations, where compliance alone achieves the objective, there is therefore no follow-up or impact to be measured.

This makes the need clear for establishing the difference between efficacy or implementation indicators and the indicators of results or effectiveness on the understanding that the benefit implied by the investment of resources required of a State or at least a greater balance in the matrix of obligations undertaken must be proven.

This is so because, in some cases, these acquired obligations may involve large investments that could become a heavy burden for the State; hence it is advisable not only to think about implementing, but to create strategic actions in a win-win ratio, that allow the necessary regulatory compliance, technological progress or of infrastructure required and the development or improvement of the operational safety that supports it, because these elements have been selected as the development pillars of the region.

It is with this intention that, in this project, a methodology is conceived that for implementing strategic planning to determine the necessary follow-up and measure their impact on the States.

INTRODUCTION

The CAR-SAM Planning and Implementation Regional Group (GREPECAS) was established by the ICAO Council in 1990 in accordance with the Recommendation of the Second CAR/SAM Regional Air Navigation Meeting of 1989.

In recent years, a stagnation has been noticed in the meeting regional goals due to the lack of a methodology for follow-up to the actions set forth in the different GREPECAS programmes and projects, emerging from the different Regional Performance Objectives (RPOs) of the Regional Performance-Based Air Navigation Implementation Plan (RPBANIP), which in turn is the result of the alignment with the Global Air Navigation Plan (GANP); this has caused a drop in the implementation level of the States, as it is increasingly difficult to keep up with the actions, and also because clear deliverables and responsibilities have not been established.

In the recently concluded GREPECAS meeting held in May of this year, in Punta Cana, Dominican Republic, a new Chairpersonship of the Group was selected, with the consequent change of Secretariat; which has entailed the normal analysis of the situation, which allows for incorporating the necessary changes, triggering reactivation of the activities, and achievement of the goals set.

For these reasons, it is logical to understand the commitment taken on by the GREPECAS Chairpersonship to efficiency, professionalism, and compliance with the regulations.

In this regard, one of the main tools for fulfilling the duties carried out by GREPECAS, taking into account that its results do not depend directly on its actions, but rather on the States, consists of creating processes and procedures that allow it to effectively manage its duties, hence the proposal to create a methodology with the purpose of following up on the obligations taken on through the States.

In this regard, we have found a disproportion in the analysis of the existing results, since the final benefits of the obligations undertaken have not been measured, because it indicates, first of all, that 90% of them are related to implementation. That is, they refer to whether the implementation is carried out or not, measuring the efficacy instead of measuring the effectiveness or the subsequent benefits of the same. The rest of the implementation efforts measure compliance with the regulations, where compliance alone achieves the objective, therefore, there is no follow-up or impact to be measured.

This makes the need clear of establishing the difference between efficacy or implementation indicators and the indicators of results or effectiveness on the understanding that the benefit implied by the investment of resources required of a State or at least a greater balance in the matrix of obligations undertaken must be proven.

This is so because, in some cases, these acquired obligations may involve large investments that could become a heavy burden for the State; hence it is advisable not only to think about implementing, but to create strategic actions in a win-win ratio, that allow the necessary regulatory compliance, technological progress or infrastructure required and the development or improvement of the operational safety that supports it, because these elements have been selected as the development pillars of the region.

A brief overview of the programmes and projects will be the starting point for differentiating between the implementation obligations and the measuring of the impact of implementation on achievement of the regional objectives, having at the end a process, that becomes a clear and simple methodology for the effective management of the performance of the implementations and the measurement of the impact on the operational safety of the GREPECAS Member States.

I- THE PROBLEM.

I.1 Presentation of the Problem.

In recent years, GREPECAS has defined a considerable number of Programmes / Projects, whose results have not been adequately followed up on, nor has their usefulness been measured, or their impact on the strategic objectives of the Organisation.

We have also seen, that a large part of the Programmes / Projects have to do with compliance, that is, to comply with a regulatory requirement and have evidence of the process instead of establishing the effectiveness that adds value to the strategic plans outlined by the International Civil Aviation Organization (ICAO) as established by the principles that give the Group its purpose.

The implementation activities of an initiative are frequently observed without taking the organizational objectives into account, which are often included in the project without contributing another service, to which they are bound.

Even though the Group has organically assigned the follow-up or coordination of the Programmes to the Regional Officers of each area and they follow the activities described in the RPOs, there is no effective protocol for identifying emerging needs and to adequately classify this tool, in addition to not having an effective measurement methodology, as well as the information and follow-up that would allow for quantifying the results obtained.

This situation raises certain doubts whose answers we will try to find in the execution of this project. These are: Have the objectives of the Programmes and Projects been achieved? How is the need of one or another determined? What follow-up is given to them? When should they be updated or closed?

It is as important for the areas to be identified that need to be essentially developed with these Programmes and Projects; as to establish effective methods that clearly show the benefits they contribute to for the achievement of the goals set.
This project has been conducted in three phases:

• In the first, the concepts that support the central topic are clarified, establishing the current situation and the effects on the results.
• The second phase consists of an analysis of the status of the Group's current situation regarding the handling of the issue, as well as a brief diagnosis.
• In the third phase, an action plan is prepared to define the methodology, and the guidelines for the systematized measurement are given, where the indicators that allow measuring the efficiency of the final product are defined.

I.2 Objectives.
I.2.1 General Objective.

Provide the Group with a systematized tool that allows it to clearly identify the necessary Programmes and Projects and to measure their impact on regional objectives.

I.2.2 Specific Objectives.

a) Analyse existing Programmes and Projects
b) Identify those that respond to regional objectives
c) Design a methodology that allows for measuring the impact of the Programmes, verifying fulfilment of the Programme's objectives and benefits obtained.

I.3 Justification.

Since its creation, mankind has had to find ways to be more competitive every day. The need to reinvent itself is as old as its origins, which allows it to survive in the most hostile environments. Thus, it continues throughout the centuries seeking, at times to resist the strongest, and at others to be the strongest.

That need persists, because over the years it has to resort to that strategy to make its way of life more efficient, even with the evolution thus far observed, and even more so with the development of the digital age.

After holding GREPECAS 18, in May 2018, from which a new Chairpersonship and change of Secretariat emerged, the integration into the process of the Group's modernization was taken on, from which arose the need arose that provides the drive required to reposition itself in a prime position in the development of civil aviation in the Region, since it has always characterized itself as being a support to the States in an efficient and reliable management system. Hence, when reviewing its agenda of compliance with the regulations that govern it, it implements a self-assessment seeking to develop an action plan to integrate all the opportunities that allow it to assimilate a permanent continuous improvement scheme, in accordance with the dynamics of international civil aviation.

Also following the provisions of the First Global Forum of PIRGs and RASGs, held in Montreal in December 2017, which concluded, among other points and in line with the Council, that "The terms of reference for PIRGs and RASGs must be reviewed and updated in order to be current with the developments, including the Resolutions of the Assembly, the NCLB initiative of the ICAO, and the new versions of the GANP and GASP" and that "the PIRGs and the RASGs have the flexibility to apply the structure of the organization and the most effective and efficient meeting modalities that best adapt to the characteristics of the implementation work programs of each region, maintaining alignment with the Global Plans and the Council's mandate".

In order to achieve its objectives, it resorts to the established guidelines and regulations, which is why in recent years it has carried out a considerable number of regional implementation Programmes and Projects in order to make its work more efficient.

Once the implementations carried out during the study period and their contribution to the goals established have been identified, those necessary could be determined and adequately channelled to achieve the regional objectives.

This will make it easier to prepare a protocol that allows for identifying fundamental development points in the integration of the States.

Mechanisms of identification of responsibilities by areas involved can be established by adhering to an adequate communication and information system in accordance with the one established in the Region.

By creating win-win situations, areas that may not be identified for development can be developed, thus managing to promote decision-making in collaboration with stakeholders, even obtaining support, without it being an economic burden for each State.

At the same time, with and an adequate follow-up and measurement process, the usefulness, impact, and efficiency of those situations can be evaluated, allowing GREPECAS to obtain better results from the programmes and projects it carries out, aimed at fulfilling regional objectives.

I.4 Risks.

In preparing this project, no potential risks were observed. The only risk identified in the organization, for the implementation of this project, is resistance to change, a common element in new practices and easily addressed with the usual change management exercises, training, and teamwork.

However, the possibility exists of encountering barriers to its implementation at the Regional Offices, once an increase in the use of their resources for implementation, significant changes to processes or lack of expert staff therein have been identified.

I.5 Delimitation.

Implementing the follow-up methodology to the performance of the programmes and projects identified in the Region; and evaluating its impact on the results obtained by the Planning and Implementation Regional Group (GREPECAS) during the next three (4) years. [sic]

II- FRAME OF REFERENCE.

II.1 Theoretical Basis.

During the GREPECAS16 meeting, the per project implementation model was chosen to carry out the implementation efforts determined in the region; defining in the structure of the Group, the creation of programmes in the different air navigation areas, coordinated by each Regional Officer expert in the matter, who will in turn manage the different projects necessary to achieve the general objective.

We have considered **the programmes** as the integration of a set of projects that allows achieving common objective. The programme may cover different aspects that separately seem to be unrelated, while being used to achieve a common good they are considered strategic elements or areas of importance for the achievement of the objectives by two or more parties.

The programme always entails the common attainment of these parties, since it does not mean de imposition of one or the other; but, on the contrary, it has to do with agreement, harmony, finding what brings both together.

Instead, **the project** refers to a set of activities that requires the effort of professionals in the matter for it to be established.

The project, although it implies an achievement in itself, can be carried out with the purpose of advancing common objectives in the context of a programme and to ensure common interests.

Some meanings found, which help establish our theoretical basis are:

- **Programme**
  m. Previous statement of what is intended to be done.
  m. Orderly project of activities.
  m. Orderly series of operations necessary to carry out a project.
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- **Project**
  m. Intention or thought to carry something out.
  m. First scheme or plan of any work that is sometimes prepared as a test before giving it a final form.
  Royal Spanish Academy © All rights reserved

- **Alliance**. (Of becoming allies).
  1. f. Action of two or more nations, governments or persons becoming allies. 2. f. Covenant or convention. 3. f. Connection or kinship contracted through marriage.4. f. Marriage or engagement ring. 5. f. Union of things that concur for the same purpose.
  Royal Spanish Academy © All rights reserved

- **Strategy.** (From Latin strategĭa, and this from Greek στρατηγία).
  1. f. Art of directing military operations
  2. 2. f. Art, plan to direct a subject.
  3. 3. f. Math. In an adjustable process, set of rules that ensure an optimal decision at all times.
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- **Strategic**. (From Latin strategĭcus, and this from Greek στρατηγικός).
  1. adj. Pertaining or related to the strategy.
  2. adj. That possesses the art of strategy. U. a. a. n.
  3. adj. Said of a place, of a position, of an attitude, etc.: Of decisive importance to carry out something. *Royal Spanish Academy © All rights reserved*

- **Stakeholders**
  The Stakeholders are defined as those groups that are directly or indirectly affected by the carrying out of a business activity, and they, therefore, also have the capacity to directly or indirectly affect the carrying out of said activity (*Freeman, 1983*) For example: IATA, CANSO, FAA, IFALPA.

III- METHODOLOGY.
III. 1 Methodology Applied.

- The method used is non-experimental analysis, where the data have already been presented before the researcher that carries out the research.

The intention is to make an objective analysis of the data and define the procedure to be followed to achieve the objectives.

The questions chosen to identify the appropriate follow-up process for the programmes and projects, were the following:

1) What criteria should be taken into account to determine the programmes and projects needed in the region?
2) What is the ideal protocol for allowing coordination and exchange of information between the parties?
3) How would you identify the deliverables and responsibilities of each project?
4) What should we measure to obtain the impact of the programmes and projects?

IV-. Proposed Action Plan
IV-.1 Initial Considerations.

GREPECAS is the guiding and coordinating body for all activities conducted by the ICAO concerning the air navigation system for the CAR and SAM Regions but does not assume the authority vested in other ICAO bodies, except where such bodies specifically delegate their authority. The activities of GREPECAS shall be subject to review by the ICAO Council.

GREPECAS is composed of all States providing air navigation services in the CAR/SAM Regions. However, a group of States may choose to have common representation.

After a review of the Terms of Reference, functions, and responsibilities of a PIRG and under the mandate defined by the ICAO Council, the Chairpersonship of the GREPECAS has identified the following improvement remarks for the consideration of the Group:

IV-.2 Description of the Proposed Plan.

In general, we have identified as main improvement:

- ❖ The creation of a proactive process to identify the regional programmes and projects, which would lead us to identify measurement, follow-up, and control in order to achieve the goals and strategic objectives and their impact on the States of the Region.

If we consider that a process already exists that would only be subject to modification, this change would allow us to obtain the following results:

- Identify internal needs of new programmes and projects.
- Make a differentiation in the treatment or follow-up between programmes and the projects.
- Implement management indicators that measure the operational impact of each one.
- Implement management indicators that measure the impact on or contribution to the regional strategic objectives.
- Implement control actions according to the result of the measurements.

Taking the identified improvements into consideration, the steps for the concretization of the same will be:

- Identify the needs of the Group. Through any desired method:
  - SWOT Analysis
  - PEST Analysis
  - PESTE Analysis

- Define the objectives. Considering that they address different needs, previously identified in the step above, such as:
  - Achievement of strategic objectives
  - Improving services and infrastructure
  - Reduction of costs
  - Increase of the Operational Safety of the Region.

- Identify the need of a Programme or Project. According to the result expected of the same or the area to be benefitted from its achievement:
  - Compliance with regulations
  - Technological improvements
  - Administrative improvements

- Identify and select possible partners:
  - Based on the information
  - Based on the needs of the region.

- Implement
- Follow-up on and measure results

V-. EXPECTED RESULTS.

Once concluded, implemented, and carried out, the following results are expected from this project:

a) Strengthen the Region through the programmes and projects.
b) Differentiate between strategic programmes and projects, to provide appropriate treatment and follow-up and to better take advantage of the resulting benefits.
c) Provide a methodology to evaluate the results of the programmes and projects accorded, in order to get a sense of the achievements obtained.
d) Provide a methodology to evaluate the impact on the region of the programmes and projects accorded.
e) Provide objectivity and accuracy to the diagnosis of said evaluations.

VI-. IMPLEMENTATION PLAN.

Taking advantage of the structure of the programmes/projects and existing resources, the implementation of this project will result in a simple process.

Based on documents, records and the IT platform existing at ICAO, the implementation plan consists of the following steps:

1) Training the staff that will be carrying out the new process at its different levels, in each of the Regional Offices.
2) Applying the Methodology to the existing programmes and projects.
3) Measuring the impact of the modification on the programmes and projects.

VI-.1 Human Resources.

External human resources may be required for the implementation of this project, although through the PPRC and Secretariat it has an organic structure and sufficient staff.

VI-.2 Material Resources.

In order to implement this project, it would be necessary to use a process set-up that allows for smoothly and uniformly following the steps needed to devise, specify, and follow up on the programmes and projects.

A process management system and computer platform are needed for managing the processes derived from implementation. No further material resources are necessary.

VI-.3 Financial Resources.

For the implementation of this project, costs related to the training of staff responsible for its execution are required.

Considering that there is a computer infrastructure available and there are mechanisms for virtual training of staff, it can be included in the budget for these purposes, without meaning a greater expense for GREPECAS.

However, it will be necessary to identify the needs of face-to-face meetings and transfer of technical staff to the different countries of the region, when necessary.

- **BUDGETARY FORMULATION**

VI-.4 Timeline.

By capturing the activities identified in a work schedule, the duration of the tasks can be visualized from the outset, once the staff designated for implementing the working methodology have been identified. As the following table shows:

ACTIVITY	1st mo.	2nd mo.	3rd mo.
Staff training			
Application of the Methodology to the existing programmes and projects			
Impact modification evaluation			

II-. FINAL CONCLUSIONS.

The advance of new administrative management in modern companies leads us to a constant search for tools in keeping with the new times.

The phrase "*One swallow does not summer make*," would seem to be the proverbial preamble that to survive in this out-of-control world, it is necessary to combine efforts, whereby each individual takes their specialty and contributes it to the system, in order to gain competitive advantage and opportunities.

This reality becomes evident when reviewing this proposal, given that, despite the special characteristics of the chosen group, such as the CAR SAM Planning and Execution Group (GREPECAS), it essential to incorporate allies in order to achieve common objectives.

The objective established from the outset, to provide the Group with a systematized tool that allows for timely monitoring of programs and projects; and that allows for measuring the impact of strategic implementation efforts on regional objectives, is brought to fruition with the submission of this improvement plan, which we hope will be accepted for future implementation.

Bibliography.

- Royal Spanish Academy
- Hernández, Fernández and Baptista (1998), Metodología de la Investigación (Research Methodology).

CAR/SAM REGIONAL PLANNING AND IMPLEMENTATION GROUP (GREPECAS)

2018-2022 WORKING PLAN

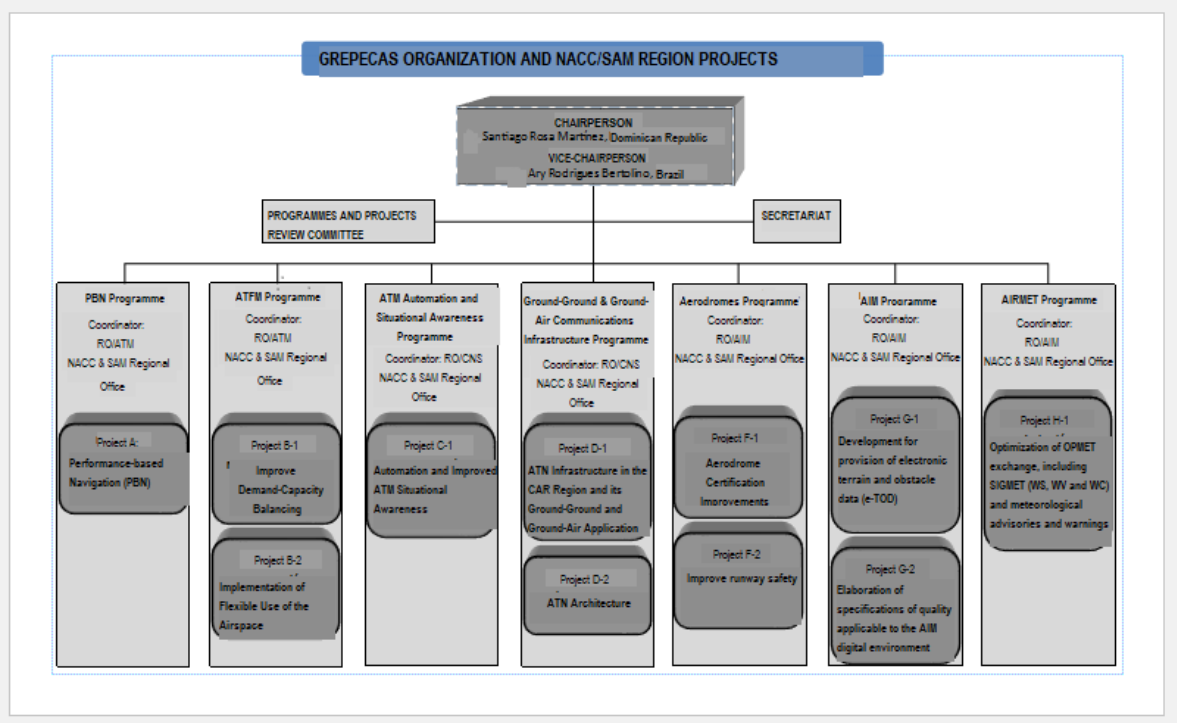
BACKGROUND

- The CAR/SAM Planning and Implementation Regional Group (GREPECAS) was established by the ICAO Council in 1990.
- It is an organisation aligned with the objectives, methodology and current budget constraints of ICAO and oriented to measurable results, under a project-based work methodology; transforming the AERMET, AGA/AOP, AIM and CNS/ATM subgroups and their respective Task Groups, into programmes and projects.

PROGRAMMES AND PROJECTS REVIEW COMMITTEE (PPRC)

- The PPRC is the accountable authority that reviews the progress of the programmes and projects.
- It is comprised of the GREPECAS Chairperson, Vice-chairperson, Secretary and Co-secretary, and 16 Member States: Argentina, Bolivia, Brazil, Chile, Colombia, Cuba, Dominican Republic, Haiti, Honduras, Jamaica, Mexico, Panama, Paraguay, Trinidad and Tobago, the United States, and Venezuela.

GREPECAS Organisation and CAR & SAM Region Projects



PROGRAMME	NACC COORDINATOR	NACC COORDINATOR	PROJECT	NACC RAPPORTEUR	SAM RAPPORTEUR
PBN Programme	Eddian Méndez RO/ATM NACC Regional Office		**A. Performance-based Navigation (PBN)**		
ATFM Programme	Eddian Méndez RO/ATM NACC Regional Office		**B-1. Improve Demand-Capacity Balancing**		
			B-2. Implementation of Flexible Use of the Airspace		
ATM Automation and Situational Awareness Programme	Mayda Ávila, RO/CNS NACC Regional Office		**C-1. Automation and Improved ATM Situational Awareness**		
Ground-Ground & Ground-Air Communications Infrastructure Programme	Mayda Ávila, RO/CNS NACC Regional Office		**D-1. ATN Infrastructure in the CAR Region and its Ground-Ground and Ground-Air Application**		
			D-2. ATN Architecture		
Aerodrome Programme	Jaime Calderón RO/AGA NACC Regional Office		**F-1. Aerodrome Certification Improvements**		
			F-2. Improve Runway Safety		
AIM Programme	Raúl Martínez RO/AIM NACC Regional Office		**G-1. Provision of electronic terrain and obstacle data (e-TOD)**		
			G-2. Elaboration of specifications of quality applicable to the AIM digital environment		
AIRMET Programme	Luis Sánchez RO/MET NACC Regional Office		**H-1. Optimization of OPMET exchange, including SIGMET (WS, WV and WC) and meteorological advisories and warnings**		

2018-2022 STRATEGIC PLAN

MISSION:

- Support the States in complying with the Regional Air Navigation Plan, in accordance with ICAO Global Standards and Recommended Practices and requisites, in order to comply with GREPECAS terms of reference, prioritizing safety to mitigate deficiencies.

VISION:

- Maintain leadership and joint work among the Regional Offices, in order that it be reflected in the good performance of the Working Groups for the benefit of the States and the main actors of the Civil Aviation system.

VALUES:

- Efficiency
- Professionalism
- Compliance with Standards
- Commitment

GENERAL OBJECTIVE:

Design a Methodology for Follow-up and Systematized Performance Measurement of the Implementations and the Impact on the NACC-SAM Region States

STRATEGIC AXES:

1) Improve management through measurement and control processes, so as to achieve results.
2) Link GREPECAS programmes and projects to objectives and ICAO strategic initiatives.
3) Improve the impact of air navigation implementation efforts on the safety of States.

	General Objective	Specific objective
1	1) Improve management through measurement and control processes, to achieve results.	Submit GREPECAS Work Plan aligned to the corresponding period, but also to the next 2019-2021 ICAO triennium and its Strategic Objectives and Global Goals.

- **OPERATIONAL ACTION LINE 1:**

Apply of Strategic Planning and Project Management Methodology.

STRATEGIC SWOT:

STRENGTHS	Plan structured in accordance with global objectives	• 85% of States have made capacity calculations to plan for ATFM implementation • 72.9% for SID / STAR / PBN implementation * • 111 out of 254 international airports (AOP Table) in the CAR / SAM Region are certified * • 18 States successfully implemented AMHS and 6 are in process for implementation * • 16 AMHS interconnects • 4 FIR in operational phase of ADSC and CPDLC and 3 FIR in preoperative phase • 12 CAR / SAM States are implementing QMS / AIM, most of them certified * • 12 CAR / SAM States that are implementing and certifying QMS / MET Regional aerodrome certification projects, SAR organization, eTOD, QMS (AIM and MET) and ANS performance are underway under the CAR / SAM Plan * (*) Values to be validated and confirmed.

WEAKNESSES	Projects without significant improvements in implementation on the part of some States	• Lack of effective implementation of some States. • Long-standing air navigation deficiencies (AGA / ATM / SAR / CNS / MET / AIM). • High failure rate or errors in flight plans found in some States. • Difficulties integrating communication systems in order to administer AIDC and other surveillance facilities between adjacent FIRs.

OPPORTUNITIES	Provide effective follow-up and increase implementation of Projects in the Region.	• Opportunities for improvement in the effective implementation of the CAR / SAM regional ANP through development and implementation of national air navigation plans focused on ASBU modules prioritized by ICAO (namely, PBN, CDO, CCO FICE, D-ATM (AIM) and AMET). • Improve level of implementation for AIDC, ADS-B and CPDLC. • Improve understanding of ATFM and SWIM concepts and identify PBN benefits. • Implement agreed strategy in order to address deficiencies related to: aeronautical cartography, eTOD, QMS, data interoperability, etc. • Streamline aerodrome certification.

STRATEGIC LINKAGE

- OPERATIONAL ACTION LINE 1:

Apply of Strategic Planning and Project Management Methodology.

	Specific objective	Goal
1	Submit GREPECAS Work Plan aligned to the corresponding period, but also to the next 2019-2021 ICAO triennium and its Strategic Objectives and Global Goals.	• Increase by 20% per year percentage of effective implementation of projects proposed at the Working Groups, by 2020.

ACTIVITIES

Actions to be carried out in order to achieve specific objectives:

A) Evaluate the correspondence of existing programmes and projects to current decisions and conclusions of the GREPECAS and RASG-PA plenaries.
B) Analyse status and verify deviation in implementation.
C) Identify adjustments necessary for achieving established objectives.

	GREPECAS/RASG-PA CURRENT DECISIONS AND CONCLUSIONS
1	Decision 18/11 CARTOGRAPHY STRATEGY DEFICIENCY
2	Conclusion 18/16 SHORT-TERM IMPLEMENTATION BY THE STATES OF AIDC
3	Conclusion 18/17 MEASURES FOR REDUCING FLIGHT PLAN ERRORS
4	Conclusion 18/19 AERODROME CERTIFICATION PLAN
5	Other decisions (if relevant)
6	CONCLUSION RASG-PA ESC / 30/4 PROJECT MANAGEMENT APPROACH FOR RASG-PA: RASG-PA and GREPECAS will analyse available options to implement Project Management Techniques in the RASG-PA and GREPECAS work programme.

	General Objective		Specific Objective
2	Link GREPECAS programmes and projects to objectives and ICAO strategic initiatives.	1	Identify contributions of GREPECAS projects to the needs of the NACC SAM Member States. That is, the Region's deficiencies in implementation, as part of the NCLB initiative.

- **OPERATIONAL ACTION LINE 2:**

Support NCLB and NGAP initiatives

STRATEGIC SWOT

STRENGTHS	• Greater integration of NACC & SAM Regional Offices with plan expansion and joint activities.
THREATS	• Lack of resources and expert availability to support project activities.
WEAKNESSES	• Lack of effective regional and inter-State cooperation: Integration vs. Sovereignty
OPPORTUNITIES	• Increase active participation of States in ICAO regional meetings (including GREPECAS and RASG-PA and related programmes / projects) • Improve coordination between States • Need to increase resources in order to help and support States

STRATEGIC LINKAGE

- OPERATIONAL ACTION LINE 2:

Support NCLB and NGAP initiatives

	Specific objective	Goal
1	Identify contributions of GREPECAS projects to the needs of the NACC SAM Member States. That is, the Region's deficiencies in implementation, as part of the NCLB initiative.	Link the needs of the NACC-SAM Member States with implementation projects of the Region, contributing 20% to the initiative by 2022 through Human Resources training.

- **ACTIVITIES:**

Actions to be carried out in order to achieve specific objectives:

a) Identify States in the Region with greatest deficiencies
b) Identify States with the least progress on implementation of the projects.
c) Establish the relationship between performance
d) Identify and manage opportunities through the NCLB in order to support the States in the necessary implementations.
e) Identify and manage opportunities through the NGAP in order to support the States in the necessary implementations.

	GREPECAS/RASG-PA CURRENT DECISIONS AND CONCLUSIONS
1	DECISION RASG-PA ESC / 28/2 REVIEW OF CORRESPONDING REGIONAL SAFETY OBJECTIVES: In order to update the corresponding regional safety objectives while taking into account the new GASP 2020/2022, the PA-RAST is to review and analyse the information provided with respect to the Safety Goals; and report any findings and recommendations regarding the updated regional safety objectives and new GASP global security objectives to the RASG-PA ESC / 29 Meeting.
2	DECISION RASG-PA ESC / 30/2 IDENTIFICATION OF SAFETY IMPROVEMENT AREAS TO SUPPORT ANS IN RESOLUTION / MITIGATION MEASURES: In order to find solutions and mitigate actions related to the participation of ANS in order to improve safety issues, the PA-RAST is to identify safety improvement areas; and is to notify those areas to the ICAO Regional Offices for ANS implementation support as necessary. Secretariat reported on proposal to conduct a Training Workshop on Upset Prevention and Recovery Training (UPRT) in Sao Paulo, Brazil, from June 5 to 6, 2018, in order to rate aircraft operations inspectors in CAR / SAM Region States, so that they can begin implementation of UPRT in their respective States.

	General objective		**Specific objective**
3	Improve the impact of air navigation implementation on the safety of States.	1	Foster involvement of Civil Aviation Authorities of all Member States with ICAO Headquarters and ANC.
		2	Close Coordination between GREPECAS - RASG-PA: Link the Global Air Navigation and Safety Plans reflected in the implementation projects of both groups.

OPERATIONAL ACTION LINE 3:
Strengthen alliances and foster normative compliance

STRATEGIC SWOT

STRENGTHS	• Greater integration of NACC & SAM Regional Offices with plan expansion and joint activities.
THREATS	• Application of ICAO policies to airport fares and air navigation services contained in Doc. 9082. • Lack of resources and expert availability to support project activities.
WEAKNESSES	• Need to increase resources in order to help and support States.
OPPORTUNITIES	• Increase State responses to State Letters. • Increase active participation of States in ICAO regional meetings (including GREPECAS and RASG-PA and related programmes / projects). • Improve coordination between States. • Improve coordination between stakeholders and ICAO.

STRATEGIC LINKAGE

- **OPERATIONAL ACTION LINE 3:**

Strengthen alliances and foster normative compliance

	Specific objective	Goal
1	Foster involvement of Civil Aviation Authorities of all Member States with ICAO Headquarters and ANC.	• Establish a 90% effective working methodology that guarantees continuity of work and compliance with goals of the period and the future.
2	Close Coordination between GREPECAS - RASG-PA: Link the Global Air Navigation and Safety Plans reflected in the implementation projects of both groups.	• Establish a program of exchange of good practices among the States, based on the objectives of the GANP and GASP, through the implementation projects of GREPECAS and RASG-PA.

- **ACTIVITIES:**

Actions to be carried out in order to achieve specific objectives:

a) Review decisions and conclusions of the RASG-PA in order to identify links with those of GREPECAS.
b) Coordinate information exchange between both groups.
c) Identify common points for joint work
d) Measure the impact of GREPECAS implementations on the safety of States, through the RASG-PA.

	GREPECAS/RASG-PA CURRENT DECISIONS AND CONCLUSIONS
1	Decision 18/09 AD HOC GROUP TO ANALYSE GREPECAS - IMPROVEMENTS TO RASG-PA COORDINATION
2	Conclusion 18/13 IMPLEMENTATION OF OPERATIONAL SAFETY MANAGEMENT.
3	Conclusion 18/14 IMPROVEMENTS TO SOUTH ATLANTIC GROUP STRUCTURE (SAT).
4	Conclusion 18/21 SUPPORT FOR GTE AND CARSAMMA ACTIVITIES TO IMPROVE INFORMATION ANALYSIS ON DETOURS IN RVSM AIRSPACE.
5	DECISION RASG-PA ESC / 28/4 REVISION OF RASG-PA COMMUNICATION PLAN: First draft of RASG PA communication plan prepared and AD HOC analysed the document. Full plan to be approved at ESC 31 in 2018.
6	CONCLUSION RASG-PA-ESC / 29/1 IMPROVEMENT OF OPERATIONAL SAFETY DATA ANALYSIS BY GREPECAS AND RASG-PA: The Secretariat shall coordinate with MAC PA-RAST Group and GREPECAS GTE In order to ensure review of the data analysis job being conducted by each of them, identifying synergies and strengthening work programme and outcomes.
7	CONCLUSION RASG-PA / ESC / 29/3 DATA COLLECTION IMPROVEMENT: Initiative focused on Central American and Asia-Pacific regions to identify and address questions related to the collection, analysis, protection and use of operational safety information.
8	FLIGHT DATA (FDAP) IN NACC AND SAM REGIONS: The States take note of the results of the CBA carried out by the RASG-PA FDAP AD HOC group for the implementation of FDAP in airplanes over 5,700 kg; States and RSOOs encourage operators to review the CBA document so that they may decide on their own implementation; The States and the RSOO analyse the benefits of aviation safety if an amendment to the aviation regulations is incorporated to request FDAP on airplanes that exceed the 5,700 maximum take-off weight (MTOW); and RASG-PA request that ICAO NCA to take note of the results of the CBA document and consider an amendment to Annex 6 Part I, FDAP Recommendation 3.3.1 and Standard 3.3.2 of Section 3.3.
9	CONCLUSION RASG-PA-ESC / 29/2 FLIGHT DATA MONITORING PROGRAMME (FDMP) / IMPLEMENTATION OF FLIGHT DATA ANALYSIS PROGRAM IN NACC AND SAM REGIONS
10	CONCLUSION RASG-PA ESC 29/4 PA-RAST DELIVERABLES Make RASG-PA PA-RAST available and visible, prepare information packets on PA-RAST DIP achievements for State awareness, as well as DCA Meetings and Safety Directors' Meetings; The Secretariat publishes all PA-RAST deliverables and DIP information on the RASG-PA website.
11	CONCLUSION RASG-PA / ESC 29/05 FEEDBACK ON IMPLEMENTATION OF GLOBAL AVIATION SAFETY PLAN (GASP) AND RASG-PA: In order to follow a customer-oriented and performance-based approach, the Secretariat is to conduct a survey on the level of satisfaction and performance results; and, in consultation with ESC members, develop an action plan based on the results of the survey; and present the results of the survey and the action plan to the RASG-PA members prior to June 30, 2018 and inform the ICAO ANC.
12	CONCLUSION RASG-PA ESC / 30/3 SHARING OF SAFETY DATA ANALYSIS RESULTS IN ORDER TO IMPLEMENT SAFETY IMPROVEMENTS: PA-RAST to show results of the FDX in the different regional meetings of the ANS Implementation Group in the NACC and SAM Regions.
13	CONCLUSION RASG-PA ESC / 30/5 REFERENCE ANALYSIS FOR RASG-PA IN ORDER TO IMPROVE PERFORMANCE AND COORDINATION WITH GREPECAS:

	GREPECAS/RASG-PA CURRENT DECISIONS AND CONCLUSIONS
	ICAO NACC and SAM Regional Offices use the results of the survey and other media to conduct a baseline analysis for RASG-PA; and evaluate / propose a process to improve this coordination between RASG-PA and GREPECAS.
14	CONCLUSION RASG-PA ESC / 30/6 IMPROVEMENT AND EXPANSION OF RASG-PA DATA SHARING PROCESS: Improve and expand the RASG-PA data exchange process; have PA-RAST develop a plan to share and store appropriate safety data with the ICAO Regional Office in order to develop safety-based improvement / implement safety actions based on risk in the region; ACI-LAC and CANSO seek to share their security data in order to improve analysis and accuracy of the data.
15	CONCLUSION RASG-PA ESC / 30/8 PA-RAST LODGING OF 2019 RASG-PA PLENARY SESSION: The Tenth RASG-PA Plenary Session is scheduled for 2019.

- **PRIORITIES:**
  Establish priorities of outlined goals based on the scheme shown below:

PRIORITIES	
U Priority	Requirement urgently needed for Air Navigation safety.
A Priority	Requirement needed for Air Navigation safety.
B Priority	Requirement needed for Air Navigation regularity and efficiency.

Goals	Priority	Remarks
Goal 1) Increase by 20% per year percentage of effective implementation of projects proposed at the Working Groups, by 2020.		
Goal 2) Link the needs of the NACC-SAM Member States with implementation projects of the Region, contributing 15% to the initiative by 2021 through Human Resources training.		
Goal 3) Establish a 90% effective working methodology that guarantees continuity of work and compliance with goals of the period and the future.		
Goal 4) Establish a program of exchange of good practices among the States, based on the objectives of the GANP and GASP, through the implementation projects of GREPECAS and RASG-PA.		

- **RISK ASSESSMENT:**

An assessment of the risks inherent to the improvement project has been carried out, taking into account the criteria set forth below:

Probability classification criteria		
Classification	**Criterion**	**Past events**
Low	Negligible probability of occurrence	Has not occurred in the last year
Medium	Possibility of occurrence exists	Has occurred between 1-10 times in the last year.
High	Possibility that it occur several times	Has occurred more than 10 times in the last year.

Impact classification criteria	
Classification	**Criterion**
Low	Minor; would only affect 1 programme or project
Medium	Moderate; would affect 2-4 programmes or projects
High	Major; would affect 5-10 programmes or projects

Risk Acceptability Criteria		
Classification	**Criterion**	**Range**
Low (1)	Additional actions are not necessary, only monitoring is required, to evaluate the possibility that the level of risk does not change.	1-3
Medium (2)	Medium-term actions are required, efforts must be made to reduce the level of risk, mitigation measures must be implemented in a given period of time	4-6
High (3)	Immediate action required, if possible, activity should not be continued, until severity level is reduced to an acceptable level.	7-9

SEVERITY LEVEL		
RATING	**VALUE**	**LEVEL**
9	**3**	**HIGH**
6	**2**	**MEDIUM**
4	**2**	**MEDIUM**
3	**1**	**LOW**
2	**1**	**LOW**
1	**1**	**LOW**

Risk Classification Matrix				
PROBABILITY	**3 - HIGH**	Low (3)	Medium (6)	High (9)
	2 - MEDIUM	Low (2)	Medium (4)	Medium (6)
	1- LOW	Low (1)	Low (2)	Low (3)
		Low (1)	**Medium (2)**	**High (3)**
		ACT IMP		

	Risk Identification and Assessment		
Activity	**Risks**	**Risk Justification**	**Cause**
Reception of Information	Difficulty in obtaining information.	- Lack of familiarity with contact points or lack of records	
Information Verification	Difficulty identifying issues that warrant immediate attention.	- Report or papers are not properly substantiated.	
New methodology implementation	Resistance to change on the part of coordinators, rapporteurs, and PoCs	In the comfort zone	
New methodology implementation	Lack of experts to carry out implementations or support for the States	No one appointed in the States to follow up on implementation	

Risk Analysis / Assessment						
Risk Factors		Risk Assessment				
		Rating		Severity Level		
Impact	Probability	Impact	Probability	Rating	Value	Level
Medium	Medium	2	2	4	2	**Medium**
Medium	Medium	2	2	4	2	**Medium**
Medium	Medium	2	1	2	1	**Low**
Medium	Low	2	1	2	1	**Low**

Risk Management Measures and Controls		
Controls	**Responsible**	**Date**
State Letter requesting PoC appointment or coordination with rapporteurs/coordinators	Secretariat/PPRC	
Orientation campaigns for coordinators, rapporteurs and PoCs Coordination with coordinators, rapporteurs and PoCs to improve communication. Raise staff awareness in order to support coordinators, rapporteurs and PoCs. Raise awareness of the importance of the confidentiality of safety information. Awareness campaign on the protection that IDAC gives to confidential reports, in order that those who make voluntary reports can identify ways to contact the IDAC.	PPRC/Secretariat	

ANNUAL OPERATING PLAN

GREPECAS
CAR / SAM Regional Planning and Implementation Group

DRAFT PROJECT

The use of this document is only for project proposal prior upper management approval. It provides the high level Project requirements, as well as a high level description of the project outcomes.

1. PROJECT IDENTIFICATION	
Project Title	*Implement an Automated Management System for GREPECAS 2019-2022 (AMS)*

2. PURPOSE OR JUSTIFICATION TO CARRY OUT THIS PROJECT

Describe the problem/needs/opportunity that led to the proposal.

In recent years GREPECAS has defined a considerable number of Programs / Projects, which have not been adequately monitored to obtain the expected results, nor has the utility of these been measured, nor the impact they have on the strategic objectives of the Organization.

We have also seen that a large part of the Programs / Projects are of compliance, that is, to comply with some regulatory requirement and provide evidence of the process instead of establishing the effectiveness that adds value to the strategic plans drawn up by the International Civil Aviation Organization (ICAO) as established by the principles of this entity.

The implementation activities of some initiative are frequently observed, without being taken into account the organizational objectives, which are often included in the project without providing another service, to which they are committed.

Even though the Group has organically assigned the follow-up or coordination of the Programs to the Regional Officers of each area and follows the activities described in the RPOs (Regional Performance Objectives), a protocol is lacking effective to identify emerging needs and classify this tool adequately, in addition to not having an effective measurement methodology, as well as information and monitoring to quantify the results achieved.

This situation raises some doubts whose answers we will try to find in the development of this project. These are:

- Are the projects established by the States aligned to the regional strategic projects and these in turn to the strategic objectives of the organization and these in turn to the strategic plans drawn up by the ICAO?
- Have the objectives of the Programs and Projects been fulfilled?

- How is the need of one or the other determined?
- What follow-up is given to them?
- At what time should the project be updated or closed?

So important is that the areas that are required to be developed essentially with those Programs and Projects are identified; as well as establishing effective methods that clearly show the benefits to which they contribute to reach the established goals.

This Project is to be developed in three main phases:

- In the first phase, the concepts underlying the central theme are clarified, establishing the current situation and the effects on the results.
- The second phase consists of an analysis of the status of the current situation of the Group in the handling of the issue, as well as a brief diagnosis
- In the third phase, an action plan is drawn up to define the methodology, and the guidelines for the systematized measurement are given, where the indicators that allow measuring the efficiency of the final product are defined.

3. PROJECT DESCRIPTION

Write a brief description of the project.

In general, the main improvements have been identified as:

The creation of an automated proactive management system to follow up regional programs and projects in a timely and effective manner, which is what would take us to obtain the necessary measurement, follow-up and control to achieve strategic goals and objectives and the desired impact on the States of the Region.

If we consider that there is already a process that would only be subject to modification, this change will allow us to obtain the following results:

- Identify internal needs of new programs and projects.
- Differentiate in the treatment or follow-up between programs and projects.
- Implement management and performance indicators that measure the operational impact of each one.
- Implement management indicators that measure the impact or contribution to the regional strategic objectives.
- Implement control actions according to the result of the measurements.
- Decision making in a timely manner due to changes or deviations or realign according to emerging situations.
- Automated mechanism for monitoring and control of programs and projects.

Taking into consideration the identified improvements, the steps for the concretization of the same will be:

- Identify the Stakeholders and Group's needs and requirements. Through any of the following methods:
  - SWOT Analysis
  - PEST Analysis
  - PESTEL Analysis

- Define the objectives. Considering that they can obey to cover different needs, previously identified in the previous step, such as:
  - Increase the level of implementation of the States
  - Achievement of strategic objectives
  - Improvement in services and infrastructure
  - Lower Costs
  - Increase in the level of Safety for the Region.

- Identify the need for a Program or Project. According to the expected result of the same or the area to benefit from its achievement:
  - Compliance with the SARPs
  - Technological improvements
  - Administrative improvements

- Identify and select possible and potential partners
  - Based on the information.
  - Based on the needs of the region.

- Implement.

- Follow up and measure the results.

4. MEASURABLE OBJETIVES OF THE PROJECT AND ACCEPTANCE CRITERIA

Describe the conditions that must be met to accept the deliverables

Within the expected results of this project, once completed and implemented, are:

- Strengthen the Region through the programs and projects, increasing by 20% the base line of implementation of the States by 2022.
  - Establish the protocols, processes and procedures necessary to carry out the necessary diagnostics and measurements that provide objectivity and rigor to the Management System.
  - Establish a methodology for evaluating the impact in the region of the agreed programs and projects.
    - Establish the contribution of the programs and projects to the strategic objectives, to give the appropriate treatment and follow-up and to take better advantage of the resulting benefits.
    - Establish a methodology for evaluating the results of the agreed programs and projects, in order to feel the achievements obtained.

5. PROJECT REQUIREMENTS AND DELIVERABLES

Describe the main needs of the Stakeholder in order to fulfil the objective of the project and the main deliverables

Implement an Automated System for the Management of programs and projects that comply with the objectives and goals set by the CAR / SAM Regional Planning and Execution Group.

DELIVERABLES:

- Technological platform under international standards of Management of Planning, Programs and Projects
- Balanced Score Card and management Dashboard.
- Training of the personnel that will be executing the new processes and procedures in their different levels, in each one of the Regional Offices.
- Application of the Methodology to existing programs and projects.
- Support documentation (Records, Manual, Procedures, Instructions, among others)
- Monitoring and control mechanisms and the corresponding output reports.
- Measuring the impact an contribution of programs and projects.

GOALS	DELIVERABLES
Apply Methodology of Strategic Planning and Project Management	Increase by 20% per year the percentage of effective implementation of the projects proposed in the Working Groups, by 2020.
	Identify the contributions of the GREPECAS projects to the needs of the NACC/SAM Member States, that is, the implementation deficiencies of the Region, as part of the NCLB initiative.
Support initiatives NCLB y NGAP	Link the needs of the NACC-SAM Member States with the implementation projects of the Region, contributing 20% to the initiative by 2022, through Human Resources training
Improve the impact of air navigation implementations on the safety of States.	Encourage the involvement of the Civil Aviation Authorities of all the Member States with the ICAO Headquarters and the ANC.
	Close coordination between GREPECAS - RASG-PA: Link the Global Air Navigation and Safety Plans reflected in the implementation projects of both groups.
Strengthen partnerships and encourage regulatory compliance	Establish an effective work methodology at 90%, which guarantees the continuity of the work and compliance with the goals of the period and future ones.
	Establish a program of exchange of good practices among the States, based on the objectives of the GANP and GASP, through the implementation projects of GREPECAS and RASG-PA
Apply an effective Monitoring and Tracking System	Establish a monitoring and monitoring system for strategic planning through established programs and projects, under a cutting-edge technological platform.

6. STRATEGIC ALIGNMENT OF THE PROJECT
Indicate the relationship of this project with strategic institutional planning: strategy, general and specific objective to which this project contributes
This proposal responds to the following strategic objectives of the International Civil Aviation Organization, ICAO. **Strategic Objective 1:** Improve the Safety of Global Civil Aviation. **Strategic Objective 2:** Increase the capacity and improve the efficiency of the global civil aviation system.

7. HIGH LEVEL RISKS
Indicate the main risk factors that may affect the achievement of the objective of this project.
✈ *Resistance to change by the Regional Offices.* ✈ *Significant changes in current processes.* ✈ *Insufficient structure for implementation and follow-up, in the Regional Offices, in Planning and Management of Programs and Projects* ✈ *Limitation of allocation and availability of Resources.*

8. SUMMARY OF CHRONOGRAM AND MILESTONES

Detail the Events or Important moments of the project and the estimated execution dates
Example: Project launch, Test, Start-up, etc.

MILESTONE	EXECUTION DATE
Opening Meeting	By 3rd Quarter 2019
Training for the SAM group	By 4th Quarter 2019
Training for the NACC group	By 4th Quarter 2019
Design Methodology	By 3rd Quarter 2019
Automated platform for monitoring implemented	By 3rd Quarter 2019
Presentation of the First Follow-up Report	By 1st Quarter of 2020
Presentation of Project Results Report	To be determined by 2020 during 19th GREPECAS meeting

9. COST-BENEFIT ANALYSIS (BUDGET)

To determine the suitability of this investment, indicate your estimated budget and present the projection of short-term benefits, whether qualitative or quantitative. (Please, attach support documents, if applicable).

✈ **Human Resources.**

For the implementation of this project, human resources, expert in the subject are required, in the topics related to the proposal, to form a high performance team that would be giving advice to the staff of the regional offices on the topics to be developed within the draft.

✈ **Material Resources.**

For the implementation of this project it would be necessary to make use of a process scheme that allows to follow, in a homogeneous and harmonized way, the necessary steps to develop, concretize and follow up the programs and projects. It is necessary a process management system and a computer platform that allows you to manage the processes derived from the implementation, no additional material resources are necessary.

✈ **Financial Resources.**

For the implementation of this project, costs related to the training of the personnel responsible for its execution

are required. Additionally, costs related to the transfer of the team to the different regional offices or States, if applicable, for training, meetings, etc.

Considering that there is a computer infrastructure available and there are mechanisms for staff training virtually, it can be included in the budget for these purposes, without implying a greater expense for GREPECAS.

However, it will be necessary to identify the needs of face-to-face meetings and transfer of technical personnel to the different countries of the region, when necessary, equipment acquisitions or staff incentives.

- Budgetary formulation by object of expenditure.

10. STAKEHOLDERS

Identify the main people or organizations that are directly or indirectly involved in the project.

Stakeholder	Relationship with the project	Internal or External to the Institution	Expectation or Need	Strategic to follow: (Interest: High / Low; Influence: Low / High — Keep satisfied; Request Collaboration; Monitored; Keep Informed)	Team Member to apply strategy	How/When to execute strategy
CRPP GREPECAS	**Sponsor**	**Internal**	**Compliance with ICAO guidelines and GREPECAS functions**	**Request collaboration**	**GREPECAS President**	**According to the schedule of activities and at the request of the stakeholders**
CAR / SAM States	**Beneficiaries**	**Internal**	**Guarantee in the provision of services and improvement of work tools**	**Keep Satisfied**	**GREPECAS Secretary**	**According to the schedule of activities and at the request of the stakeholders**
International Civil Aviation Organization (ICAO)	**Beneficiary**	**External**	**Link GREPECAS programs and projects to the objectives and strategic initiatives of ICAO**	**Keep Informed**	**Secretary GREPECAS**	**According to the schedule of activities and at the request of the stakeholders**
Regional Offices NAC/SAM	**Beneficiary**	**External**	**Identify and manage the opportunities through the NCLB to**	**Request Collaboration**	**GREPECAS Secretary**	**According to the schedule of activities and at the request**

10. STAKEHOLDERS						
			support the States in the implementations as well as, identify and manage opportunities through the NGAP to support the States in the implementations.			**of the stakeholders**

11. DESIGNATION OF THE PROJECT LEADER	
Name:	Santiago Rosa Martinez
Title:	GREPECAS President
Responsibility:	Coordination and monitoring of the activities carried out by the project team
Level of authority:	Total, in collaboration with the Directors of the NACC / SAM Regional Offices

12. RESPONSIBLE FOR THE PROJECT PROPOSAL			
Date	***Name***	***Title/Area***	***Signature***
	Santiago Rosa Martinez	**GREPECAS President/ Deputy Director General of IDAC**	

13. APPROVAL OF THE DRAFT PROJECT			
Date	***Name***	***Title/Area***	***Signature***
	GREPECAS States	**PPRC**	

APPENDIX C

PROJECT IMPLEMENTATION OF PERFORMANCE BASED NAVIGATION (PBN)
PROYECTO IMPLANTACIÓN DE LA NAVEGACION BASADA EN LA PERFORMANCE (PBN)

CAR Region / Región CAR	**PROJECT DESCRIPTION / DESCRIPCION DEL PROYECTO (DP)**	**DP N° A1**	
Programme / Programa	**Project Title / Titulo del Proyecto**	**Start / Fecha inicio**	**End / Fecha término**
Performance Based Navigation /Navegación basada en la performance (PBN) Programme Coordinator / Coordinador del Programma: Eddian Mendez)	*Performance Based Navigation / Navegación Basada en la Performance (PBN)* Project Coordinator / Coordinador Proyecto: Riaaz Mohamed (Trinidad and Tobago) Experts / Expertos contribuyentes: Jorge Centella Artola (Cuba) Alexi Manuel Batista Ruiz (Dominican Republic) Scott Leis (United States) César Turcios (COCESNA) Marco Vidal(IATA)	2008	2017 2019 (new date /nueva fecha)
Objective /Objetivo	Support the implementation of the ATS route structure in terminal areas (SID/STAR RNAV) and en-route (RNAV) optimization Project, as well as the implementation of RNP approach procedures according to regional performance objectives of the Performance-based Air Navigation Implementation Plan for NAM/CAR (RPBANIP NAM/CAR) Regions. / Apoyar la implementación del proyecto de optimización de la estructura de rutas ATS en las áreas terminales (SID/STAR RNAV) y espacio aéreo en ruta (RNAV), así como la implantación de aproximaciones RNP en base a los Objetivos regionales de performance del Plan de Regional de Implementación de Navegación Aérea Basada en la Performance para las Regiones NAM/CAR (RPBANIP NAM/CAR)		
Scope /Alcance	Progressive implementation of PBN and use of GNSS according to the goals of Assembly Resolution A37-11 and the PBN Airspace Concept for the CAR Region. / Implantación progresiva de la PBN y uso del GNSS acorde a las metas de la Resolución de la Asamblea A37-11 y el Concepto de Espacio Aéreo PBN para la Región CAR.		

CAR Region / Región CAR	**PROJECT DESCRIPTION / DESCRIPCION DEL PROYECTO (DP)**	**DP N° A1**
Metrics / Métricas	• Percentage of instrument runway with an Approach procedure with vertical guidance (APV), (BARO-VNAV and/or augmented GNSS) either as the primary approach or as a back-up for precision approaches; • Percentage of international aerodromes with implanted SID/STAR RNAV, RNP and continuous descent and climb operations (CDO/CCO); • Estimated fuel saved with operational improvements. • Porcentaje de pistas por instrumentos con un Procedimiento de aproximación con guía vertical (APV), (BARO-VNAV y/o aumentación GNSS) ya sea como aproximación primaria o como apoyo para aproximaciones de precisión; • Porcentaje de aeropuertos internacionales con SID/STAR RNAV, RNP y operaciones de descenso y ascenso continuo (CDO/CCO) implantados; • Ahorros estimados de combustible debidos a mejoras operacionales.	
Strategy / Estrategia	The implementation of activities will be coordinated between Project members, the Project Coordinator and the Programme Coordinator. The Programme Coordinator will coordinate with the Project Coordinator requirements of other projects and NAM/CAR implementation working groups. States will develop their respective national programmes of implementation of routes and approach procedures according to PBN Airspace Concept in the CAR Region. Experts nominated by States, Territories and International Organizations will be incorporated to develop tasks as required. / La ejecución de las actividades será coordinada entre miembros del proyecto, el coordinador del proyecto y el Coordinador del Programa. El Coordinador del Programa coordinará con el Coordinador del Proyecto los requerimientos de otros proyectos y Grupos de Trabajo de implementación NAM/CAR. Los Estados elaborarán sus respectivos programas nacionales de implantación de rutas y procedimientos de aproximación acorde al Concepto de Espacio Aéreo PBN de la Región CAR. Se incorporarán expertos nominados por los Estados, Territorios y Organizaciones Internacionales para desarrollar las tareas, según se requiera.	
Goals / Metas	• Implement RNAV/RNP routes and RNP approach procedures according to Assembly Resolution A37-11 in 2016: • Implement a PBN Airspace Redesign Project (CDOs, CCOs, SIDs, STARs, RNAV/RNP route and RNP approach procedures) in 8 FIRs by December 2019 (new date): • Implementar rutas RNAV/RNP y procedimientos de aproximación RNP de acuerdo a la Resolución de la Asamblea A37-11, en diciembre de 2016; • Implementar un Proyecto de Rediseño de Espacio Aéreo PBN (CDO, CCO, SID, STAR, rutas RNAV/RNP y procedimientos de aproximación RNP) en 8 FIR en diciembre de 2019 (nueva fecha)	

CAR Region / Región CAR	**PROJECT DESCRIPTION / DESCRIPCION DEL PROYECTO (DP)**	**DP N° A1**
Justification/ Justificación	The Assembly Resolution A37-11 on performance-based navigation (PBN) global goals, urged States to implement RNAV and RNP ATS routes and instrument approach procedures in accordance with the ICAO Performance-based Navigation (PBN) Manual, Doc 9613, and requested the PIRGs to include in their work programme the review of status of implementation of PBN by States and report annually to ICAO any deficiencies that may occur. In addition, NAM/CAR States adopted a regional performance framework on the basis of the regional performance objectives (RPO) of the performance based air navigation implementation plan (RPB-ANIP) for NAM/CAR Regions and the Global ATM Operational Concept. The framework includes the implementation of a set of performance metrics to facilitate comparative analysis of operational and economic regional development, such as capacity and efficiency of gate-to-gate flight operations, and the protection of the environment in the planning, implementation and operation processes of the ATM system. / La Resolución A37-11 de la Asamblea sobre metas mundiales de Navegación basada en performance (PBN), instó a los Estados a implantar rutas ATS RNAV y RNP, así como procedimientos de aproximación por instrumentos de acuerdo al Manual de la OACI sobre Navegación Basada en la Performance (PBN), Doc 9613, solicitando a los PIRG incluir en sus programas de trabajo la revisión del estado de implantación de PBN por los Estados e informar anualmente a la OACI sobre cualquier deficiencia que pudiera ocurrir. Además, los Estados NAM/CAR adoptaron un marco regional de performance con base en los Objetivos regionales de performance (RPO) del plan de implantación de navegación aérea basada en performance (RPB-ANIP) para las Regiones NAM/CAR y el Concepto Operacional ATM Global. El marco de referencia incluye la implantación de un conjunto de métricas de performance para facilitar el análisis comparativo operacional y económico del desarrollo regional, tales como la capacidad y eficiencia de operaciones aéreas puerta a puerta y la protección del medio ambiente en los procesos de planificación, implantación y operación del sistema ATM.	
Related Projects / Proyectos relacionados	• Enhance demand and capacity balancing; • Flexible use of airspace; • Improve ATM situational awareness; • Mejorar el equilibrio entre la demanda y capacidad; • Uso flexible del espacio aéreo; • Mejorar la conciencia situacional ATM;	

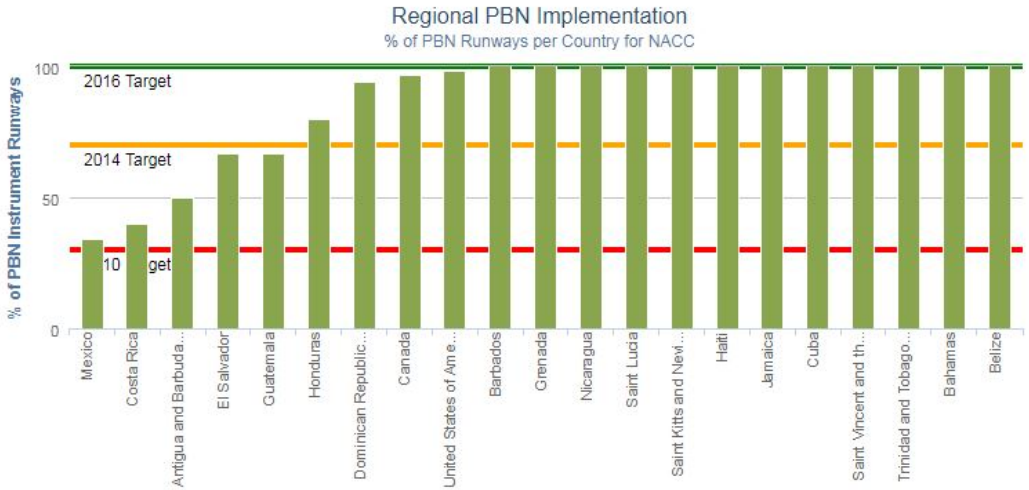
Resultados entregables del Proyecto	Relación con el RPB-ANIP NAM/CAR	Responsable	Estado de Implantación*	Fecha entrega	Comentarios
Implement PBN Airspace Redesign Project for CAR Region	RPO 1	States, Territories, International Organizations / Estados, Territorios, Organizaciones Internacionales		Dec - 2019 (new date / Dic 2019 nueva fecha)	-Up-to-date the regional PBN Airspace concept -States to develop and implement a PBN Airspace Redesign Project for oceanic, continental and terminal areas in accordance with the ICAO Doc 9613 and Doc 9992, as needed / Mitigating measures: approved MCAAP project to address this deliverable -Actualizar el Concepto de Espacio Aéreo PBN regional -Los Estados implementan un Proyecto de Rediseño de Espacio Aéreo acorde a los Doc 9613 y 9992 de la OACI, según sea necesario. Acciones de mitigación: Proyecto MCAAP aprobado para atender este entregable
Optimize the ATS route structure in the upper continental and oceanic airspace. / Optimizar la estructura de rutas ATS en el espacio aéreo superior continental y oceánico	RPO 1	States, Territories, International Organizations / Estados, Territorios, Organizaciones Internacionales		Dec 2016 Completed / Completado	RNAV 5 Routes implemented in the upper airspace. On-going revision of 8 ATS routes / States to send proposals to ICAO NACC Regional Office by 30 June 2016 Rutas RNAV 5 implantadas en el espacio aéreo superior. Revisión de 8 rutas ATS en progreso Los Estados enviarán sus propuestas a la Oficina Regional NACC de la OACI a más tardar el 30 de junio de 2016
	RPO 1	States,			On-going revision of TMAs

Resultados entregables del Proyecto	Relación con el RPB-ANIP NAM/CAR	Responsable	Estado de Implantación*	Fecha entrega	Comentarios
Implement SIDs/STARS, CDO and CCO in terminal areas based on RNAV/1-2 and RNP1 navigation specifications. / Implementar SIDs/STARS, CDO y CCO en áreas terminales en base a especificaciones de navegación RNAV/1-2 y RNP1		Territories, International Organizations / Estados, Territorios, Organizaciones Internacionales		Dec 2019 / Dic2019	- Revisión de las TMA en progreso
Design and implement PBN APV approach procedures in accordance with Assembly Resolution A37-11 (BARO-VNAV), / Diseñar e implementar procedimientos de aproximación PBN APV (BARO-VNAV) según la Resolución de la Asamblea A37-11	RPO 1	States, Territories, International Organizations / Estados, Territorios, Organizaciones Internacionales		Dec 2019 / Dic 2019	-RNP approach procedures implemented that represent 85.4% of the global target/ -Procedimientos de aproximación RNP implementados que representan el 85.4% de la meta global.

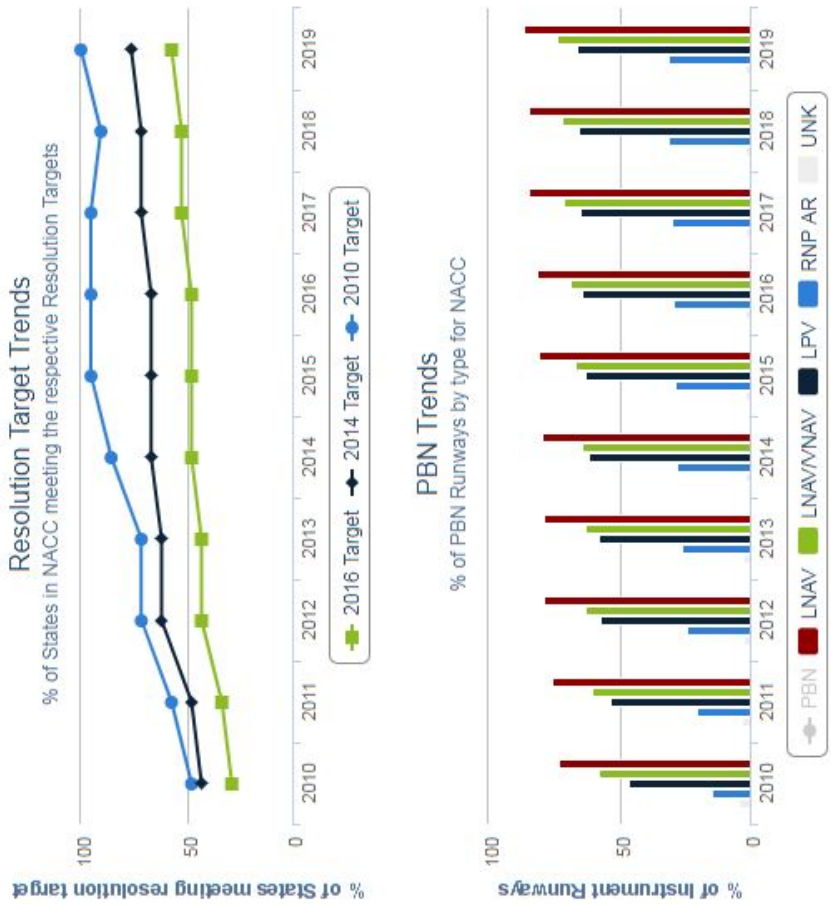
Resultados entregables del Proyecto	Relación con el RPB-ANIP NAM/CAR	Responsable	Estado de Implantación*	Fecha entrega	Comentarios
Analysis of regional feasibility for SBAS (WAAS/SACSA) implementation. / Estudio de factibilidad regional de la implantación del SBAS (WAAS / SACCSA)	RPO 1	Alfredo Mondragón assisted by / asistido por SACCSA and/y WAAS		Completed / Finalizada	-Mexico is testing 5 WAAS stations for domestic use. WAAS requirements will be regionally reviewed in the medium term. -Feasibility of regional application, technical aspects, operational benefits, associated costs, for an SBAS (WAAS/SACSA) implementation. Implications for airborne equipment (new or avionics update) and other relevant aspects. / -México tiene a prueba 5 estaciones WAAS para uso nacional. Los requisitos WAAS serán regionalmente revisados en el mediano plazo. -Factibilidad de la aplicación regional, los aspectos técnicos, los beneficios operacionales, los costos asociados, de la implantación del SBAS (WAAS / SACCSA), así como las implicaciones para los equipos de a bordo (nuevas o actualización de aviónicas) y otros aspectos pertinentes
Practical guidance for the implementation of GBAS Systems/ Guía práctica para la implementación de sistemas GBAS.	RPO 1	ANI/WG		Not a PBN Task / No es una tarea PBN	- Regional agreement to organize GNSS workshop in 2016 -Acuerdo regional para organizar un Taller GNSS en 2016
Required Resources / Recursos necesarios	CAR Regional PBN Airspace Redesign Project, which includes PBN technical assistance programme to States / Proyecto regional de Rediseño de Espacio Aéreo PBN CAR que incluye programa de asistencia técnica PBN a los Estados				

Grey / Gris: *Task not started / Tarea no iniciada;*

Green / Verde: *Activity underway as scheduled / Actividad en progreso de acuerdo con el cronograma;*
Yellow / Amarillo: *Activity started with some delay but expected to be completed on time / Actividad iniciada con cierto retardo pero estaría llegando a tiempo en su implantación;*
RED / ROJO: ***IT HAS NOT BEEN POSIBLE TO IMPLEMENT THIS ACTIVITY AS SCHEDULED; MITIGATING MEASURES ARE REQUIRED / NO SE HA LOGRADO LA IMPLANTACIÓN DE LA ACTIVIDAD EN EL LAPSO DE TIEMPO ESTIMADO SE REQUIERE ADOPTAR MEDIDAS MITIGATORIAS.***



States in NACC	PBN Runway Ends	Intr. Runway Ends	PBN Runway Ends (%)
21	1020	1126	90.6%


Resolution Target Trends
% of States in NACC meeting the respective Resolution Targets
% of States meeting resolution target
100
50
0
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2016 Target
2014 Target
2010 Target
PBN Trends
% of PBN Runways by type for NACC
% of Instrument Runways
PBN
LNAV
LNAV/VNAV
LPV
RNP AR
UNK

PROJECT A1 FOR THE SAM REGION – PBN OPERATIONAL IMPLEMENTATION

SAM Region	**PROJECT DESCRIPTION (PD)**	PD N° A1	
Programme	**Project Title**	**Start**	**End**
SAM airspace optimisation *(Programme coordinator: ATM RO Fernando Hermoza Hübner)*	PBN operational implementation *Project coordinator:* *Julio Cesar de Souza Pereira (IATA)*	2011	2019
Objective	Support the optimisation of the SAM airspace structure through the optimisation of the ATS route structure in terminal airspace (RNAV/RNP SIDs/STARs) and en-route (RNAV/RNP), as well as the implementation of PBN approaches in accordance with ICAO Assembly Resolution A37-11, with a view to attaining the goals set forth in the Declaration of Bogota.		
Scope	The implementation project contemplates the optimisation of the SAM airspace through PBN implementation and the application of the flexible use of airspace (FUA) concept, as well as phased optimisation of the ATS route network of the Region.		
Metrics	• Reduction of CO_2 emissions per each route optimisation version, in tonnes. • Percentage of international airports with RNAV and/or RNP SIDs/STARs implemented. • Percentage of international airports with continuous descent and climb operations implemented. • Number of RNAV/RNP routes implemented, realigned and/or eliminated. • Percentage of thresholds with APV approaches at international airports.		
Strategy	Project activities will be coordinated among Project members, the Project coordinator and the Programme coordinator through SAM/IG meetings, ATS route optimisation (ATS/RO) meetings and other events deemed necessary (PBN workshops, hiring of experts, etc.). The Project coordinator will coordinate with the Programme coordinator the incorporation of additional experts if so required by the tasks and work to be performed. Likewise, States must review their respective national PBN implementation programmes to ensure they are compatible with the SAM PBN project. Activities to review, implement, modify or eliminate routes in the SAM Region have been scheduled in order to continue optimising the ATS route structure.		

Goals	• Implementation of Version 3 of the PBN-based ATS route network in order to respond to current airspace user requirements by the end of 2017. • Achievement of the goals set forth in the Declaration of Bogota. • PBN-based redesign of 30% of the main SAM TMAs by 2016, 50% by 2018. • Development of Version 4 of the PBN-based ATS route network and design of PBN-based TMAs. • Optimisation of longitudinal separation.
Rationale	The 37th ICAO General Assembly formulated Resolution A37-11 (*Performance-based navigation global goals*) in which it took note that the Planning and Implementation Regional Groups (PIRG) had completed regional PBN implementation plans and urged States to implement RNAV and RNP air traffic service (ATS) routes and approach procedures in accordance with ICAO PBN concept laid down in the Performance-based navigation (PBN) manual (Doc 9613), and resolved that States should complete a PBN implementation plan as a matter of urgency to achieve: 1) implementation of RNAV and RNP operations (where required) for en-route and terminal areas according to established timelines and intermediate milestones; 2) implementation of approach procedures with vertical guidance (APV) (Baro-VNAV and/or augmented GNSS), including LNAV-only minima, for all instrument runway ends, either as the primary approach or as a back-up for precision approaches by 2016, with intermediate milestones as follows: 30% by 2010 and 70% by 2014; and 3) implementation of straight-in LNAV-only procedures, as an exception to 2) above, for instrument runways at aerodromes where there is no local altimeter setting available and where there are no aircraft suitably equipped for APV operations with a maximum certified take-off mass of 5 700 kg or more. Furthermore, the Global air navigation plan (GANP), Chapter 2 (implementation) defines performance-based navigation as its main priority. The GANP specifies that "*the introduction of PBN met the expectations of all the aviation community. Current implementation plans should help provide additional benefits, but they are still subject to the availability of proper training, the provision of specialised support by the States, continuing maintenance and development of international standards and recommended practices (SARPs) and closer coordination between States and aviation stakeholders.*" Accordingly, this project provides specialised support and close coordination between States and other stakeholders to ensure harmonised PBN implementation in all the corresponding flight phases: en-route, TMA and approach.
Related projects	• Flexible use of airspace • Automation • Air navigation systems in support of PBN

Project deliverables	Relationship with the regional performance-based plan	Responsible party	Status of implementation*	Date of delivery	Comments
Implementation of Version 1 of the ATS route network based on RNAV, with the required PBN values to respond to the current requirements of airspace users.	B0-FRTO	Alexandre Luiz Dutra Bastos		October 2010 FINALISED	
Implementation of RNAV5 in the SAM Region	B0-FRTO	Alexandre Luiz Dutra Bastos		October 2011 FINALISED	
Action plan for the implementation of Version 2 of the ATS route network optimisation programme	B0-FRTO	Alexandre Luiz Dutra Bastos		ATSRO/3 FINALISED	

Traffic data to understand airspace traffic flows	B0-FRTO	ICAO coordinator		SAM/IG/6 FINALISED	
Navigation capacity of the fleet	PFF SAM ATM 01	Alexandre Luiz Dutra Bastos		SAM/IG/9 FINALISED	
List of gateways of the main SAM TMAs	PFF SAM ATM 02	Alexandre Luiz Dutra Bastos		SAM/IG/9	Assistance was provided to States for the redesign of their TMAs in order to expedite PBN implementation, by training their experts in airspace planning. Several States are delayed in their projects.
Letters of agreement and contingency with adjacent States	PFF SAM ATM 01	Alexandre Luiz Dutra Bastos		SAM/IG/10 FINALISED	
Detailed study of the SAM ATS route network with a view to developing Version 2 of the route network	B0-FRTO	Alexandre Luiz Dutra Bastos		April 2012 FINALISED	
Risk analysis for the implementation of Version 2 of the ATSRO programme	B0-FRTO	External consultants		SAM/IG/10 FINALISED	
SAM Route Network Optimisation					
Planning of Version 3 - Stage 1	B0-FRTO	External consultants		SAM/IG/14 FINALISED	
Implementation Version 3 - Stage 1 - Flow 1 (Argentina -Chile - Paraguay)	B0-FRTO	States SAM Regional Office		April 2015 FINALISED	

Implementation Version 3 - Stage 1 - Flow 2 (Argentina –Brazil - Uruguay)	B0-FRTO	States SAM Regional Office		March 2017 FINALISED	The optimisation of this traffic flow is delayed.
Implementation Version 3 - Stage 1 - Flow 3 (Panama - CENAMER - Caribbean)	B0-FRTO	States SAM Regional Office		March 2017 FINALISED	Coordination started with CAR States. The optimisation of this traffic flow is delayed. Panama will start the TMA and FIR airspace optimisation process. Improvements between Panama – Jamaica were coordinated at ATSRO/8.
Implementation Version 3 - Stage 1 - Flow 3 (Brazil -Guyana – French Guiana - Suriname - Venezuela - Caribe)	B0-FRTO	States SAM Regional Office		October 2016 FINALISED	The optimisation of the main flows has been coordinated.
Airspace concept Version 3 – Stage 2	B0-FRTO	States SAM Regional Office		ATSRO/7 FINALISED	The validated PBN airspace concept of the main SAM TMAs was agreed upon
Implementation Version 3 – Stage 2	B0-FRTO	States SAM Regional Office		November 2017 FINALISED	In October 2016. Routes not directly related to TMA re-structuring were implemented. The remaining initiatives were transferred to Version 4.
Development of the PBN route structure operational concept (ATS routes, SIDs, STARs) for the period 2017-2019	B0-FRTO	States SAM Regional Office		November 2016 FINALISED	Hiring of experts and invitation to States to contribute with human resources. The CONOPS has been presented at the SAM/IG/19 and ATSRO/8 meetings

Regional strategy and work programme for the implementation of the flexible use of airspace through a phased approach, starting with an increasingly dynamic sharing of reserved airspace.	B0-FRTO	States SAM Regional Office		2013-2018	The flexible use of airspace is being enhanced through route optimisation.
Reduction of conventional longitudinal separation from 80 to 40 NM for GNSS-equipped aircraft.	B0-FRTO	States SAM Regional Office		2016-2017	Significant progress has been made in this task, which is expected for completion on time. Some States like Venezuela depend on action taken by adjacent CAR States. A regional workshop was held in November 2017, where activities were designed to consolidate implementation.
Reduction of conventional longitudinal separation from 40 to 20 NM for GNSS-equipped aircraft.	B0-FRTO	States SAM Regional Office		2017-2019	A proposal of Action Plan for the implementation of 20-NM separation minima was agreed at the regional workshop held in November 2017. Brazil started applying this minimum ONLY for aircraft ENTERING its FIRs, on continental airspace.
Reduction of conventional longitudinal separation from 20 to 10 NM for scenarios in which ATS surveillance systems are used that cover the boundaries of the FIRs under consideration.	B0-FRTO	States SAM Regional Office		~~2019~~ 2020 - 2021	
PBN TMA					
Updating of action plans. PBN implementation in the main TMAs	PFF SAM ATM 02	States		May 2017 FINALISED	. Conclusion SAM/IG/14-6. 100% of States have updated their action plans.

Updating of the status of implementation of PBN SIDs/STARs	PFF SAM ATM 02	States		September 2017	Yearly update prior to 30 June and prior to 31 December, in accordance with Conclusion SAM/IG/14-4. Tables were updated at the ATSRO/08 meeting. No information is available for French Guiana.
Updating of Table AOP-1	PFF SAM ATM 02	States		TBD	Conclusion SAM/IG/15-3.
Approach					
Updating of the status of implementation of APV IAC	PFF SAM ATM 03 B0 APTA	States		30 June 2019	Yearly update prior to 30 June and prior to 31 December, in accordance with Conclusion SAM/IG/14-4. Implementation of RNP APCH procedures with Baro-VNAV vertical guidance or RNP AR APCH must be reported. Tables were updated at the ATSRO/8 meeting. No information is available for French Guiana.
Meetings/Workshops					
SAM/IG/07	PFF SAM ATM	States SAM Regional Office		May 2011 FINALISED	SAM PBN implementation group
SAM/IG/08	PFF SAM ATM	States SAM Regional Office		October 2011 FINALISED	SAM PBN implementation group
SAM/IG/09	PFF SAM ATM	States SAM Regional Office		Mayo 2012 FINALISED	SAM PBN implementation group

SAM/IG/10	PFF SAM ATM	States SAM Regional Office		October 2012 FINALISED	SAM PBN implementation group
SAM/IG/11	PFF SAM ATM	States SAM Regional Office		May 2013 FINALISED	SAM PBN implementation group
SAM/IG/12	PFF SAM ATM	States SAM Regional Office		October 2013 FINALISED	SAM PBN implementation group
SAM/IG/13	PFF SAM ATM	States SAM Regional Office		Mayo 2014 FINALISED	SAM PBN implementation group
SAM/IG/14	PFF SAM ATM	States SAM Regional Office		October 2014 FINALISED	SAM PBN implementation group
SAM/IG/15	PFF SAM ATM	States SAM Regional Office		May 2015 FINALISED	SAM PBN implementation group
SAM/IG/16	PFF SAM ATM	States SAM Regional Office		October 2015 FINALISED	SAM PBN implementation group
SAM/IG/17	PFF SAM ATM	States SAM Regional Office		May 2016 FINALISED	SAM PBN implementation group
SAM/IG/18	PFF SAM ATM	States SAM Regional Office		October 2016 FINALISED	SAM PBN implementation group
SAM/IG/19	PFF SAM ATM	States SAM Regional Office		May 2017 FINALISED	SAM PBN implementation group
SAM/IG/20	PFF SAM ATM	States SAM Regional Office		October 2017 FINALISED	SAM PBN implementation group

SAM/IG/21	PFF SAM ATM	States SAM Regional Office		May 2018 FINALISED	SAM PBN implementation group
SAM/IG/22	PFF SAM ATM	States SAM Regional Office		November 2018 FINALISED	SAM PBN implementation group
SAM/IG/23	PFF SAM ATM	States SAM Regional Office		May 2019 FINALISED	SAM PBN implementation group
ATSRO/03	PFF SAM ATM 03	States SAM Regional Office		July 2011 FINALISED	SAM route network optimisation
ATSRO/04	PFF SAM ATM 03	States SAM Regional Office		July 2012 FINALISED	SAM route network optimisation
ATSRO/05	PFF SAM ATM 03	States SAM Regional Office		July 2013 FINALISED	SAM route network optimisation
ATSRO/06	PFF SAM ATM 03	States SAM Regional Office		October 2014 FINALISED	SAM route network optimisation
ATSRO/07	PFF SAM ATM 03	States SAM Regional Office		October 2015 FINALISED	SAM route network optimisation
ATSRO/08	PFF SAM ATM 03	States SAM Regional Office		September 2017 FINALISED	- Held on 11-15 September 2017. Implementation of Version 4 of the route network was begun.
ATSRO/09	PFF SAM ATM 03	States SAM Regional Office		July 2018 FINALISED	SAM route network optimisation
ATSRO/10	PFF SAM ATM 03	States SAM Regional Office		June 2019 FINALISED	SAM route network optimisation

Hiring of experts for consolidation of Version 4 of the SAM ATS route network	PFF SAM ATM 03	States SAM Regional Office		June 2017 FINALISED	- Two experts from the Region were hired. The Route Network Version 4 deliverable was developed with 91 route improvement initiatives.
Hiring of experts for consolidation of Version 5 of the SAM ATS route network	PFF SAM ATM 03	States SAM Regional Office		February 2019 FINALISED	SAM route network optimisation
Workshop on PBN airspace planning	B0 APTA B0 CCO B0 CDO	States SAM Regional Office		March 2013 FINALISED	Initial training in the PBN airspace planning process.
PBN/1 workshop	B0 APTA B0 CCO B0 CDO	States SAM Regional Office		May 2014 FINALISED	Objective: Preliminary PBN training and design of the Asunción and Bogota TMAs.
PBN/2 workshop	B0 APTA B0 CCO B0 CDO	States SAM Regional Office		September 2014 FINALISED	Objective: Preliminary PBN design of the main South American TMAs.
PBN/3 workshop	B0 APTA B0 CCO B0 CDO	States SAM Regional Office		March 2015 FINALISED	Objective: Validation of the preliminary PBN design of the main South American TMAs.
PBN/4 workshop	B0 APTA B0 CCO B0 CDO	States SAM Regional Office		September 2015 FINALISED	Objective: Guide PBN implementation at the main South American TMAs.
PBN/IMP/1 workshop	B0 APTA B0 CCO B0 CDO	States SAM Regional Office		April 2016 FINALISED	Review the status of implementation in States whose implementation date was the first semester of 2016.
PBN/IMP/2 workshop and related PANS-OPS activities	B0 APTA B0 CCO B0 CDO	States SAM Regional Office		September 2016 FINALISED	Review the status of implementation in States whose implementation date is the second half of 2016 and carry out the related PANS-OPS activities.

Others					
Updating and submission of the National PBN implementation plan to the Regional Office	B0 APTA B0 CCO B0 CDO	States		SAM/IG/15	93% of States have completed the task. French Guiana is still pending. Headquarters has requested the delivery of the national PBN implementation plans.
Resources needed	Designation of experts for completion of some of the deliverables.				

*

Grey ***Task not started yet***
Green ***Activity being implemented as scheduled***
Yellow ***Activity started with some delay, but will be implemented on time***
Red ***Activity not implemented on time; mitigation measures are required***

PROJECT A2 – AIR NAVIGATION SYSTEMS IN SUPPORT OF PBN

SAM Region	PROJECT DESCRIPTION (DP)	DP N° A2	
Programme	**Project Title**	**Start**	**End**
PBN (*Programme coordinator: ATM RO Fernando Hermoza)*	Air navigation systems in support of PBN *Project coordinator:* *Julio César de Souza Pereira Pereira (IATA)* *Experts contributing to the Project: Alessander Santoro, Andre Jansen, Fabio Augusto Andrade (Brazil), Paulo Vila, Tomas Macedo (Peru) and SAM/IG SAM PBN Group*	January 2011	December 2018
Objective	Develop guides, conduct analyses and implement services in support of PBN implementation in the SAM Region.		
Scope	Support to PBN implementation in the SAM Region, initially consisting of: • Practical guide for the implementation of GBAS systems. • Analysis of DME/DME coverage to support PBN procedures. • Implementation of a RAIM availability prediction service.		
Metrics	• Drafting of a practical guide for the implementation of a GBAS system. • DME/DME coverage in the SAM Region. • Availability of a RAIM availability prediction service. • % States providing the RAIM availability service.		
Strategy	• All activities will be conducted by experts designated by SAM States and organisations participating in the project entitled "*Air navigation systems in support of PBN*", under the management of the project coordinator and the supervision of the programme coordinator. Communications among project members, and between the project coordinator and the programme coordinator shall be done through teleconferences and the Internet. Likewise, the programme coordinator, the project coordinator and the contributing experts can meet at the SAM/IG implementation meetings. • Once the studies have been completed, the results will be sent to the ICAO programme coordinator as a final consolidated document, and to the GREPECAS PPRC for analysis, review and approval.		
Goals	Guide for the implementation of a GBAS system, by October 2012. (Revision November 2016). • Assessment of DME/DME coverage to support PBN procedures, by May 2011. • RAIM availability prediction service in the SAM Region implemented by September 2014. • 11 SAM States with RAIM availability prediction service available by February 2014. • 3 SAM States and one territory with the service available by the end of 2014.		

Rationale	• The implementation of PBN procedures for approach, terminal and en-route operations requires the implementation of air navigation systems, services and infrastructure studies, such as the proper installation of DME to support the DME/DME navigation required in the event of failure of the GNSS system, the RAIM availability prediction service to enable the user to know what is RAIM availability for en-route, terminal and approach operations, and the implementation of GBAS systems to support precision landing procedures. • This project contributes to the implementation of SAM PFF CNS 03, ATM 01, ATM 02, and ATM 03 of the *SAM Performance-based navigation system implementation plan (SAM PBIP).*
Related projects	• Implementation of PBN operational aspects.

Project deliverables	**Relationship with the performance-based regional plan and ASBU block 0 modules**	**Responsible party**	**Status of implementation**	**Delivery date**	**Comments**
Develop a practical guide for the implementation of the GBAS system					
Review of practical guide for the implementation of GBAS systems	SAM PFF CNS 03 ANRF B0-APTA (65)	Alessander Santoro (Brazil)		December 2018	The practical guide for the implementation of GBAS systems was presented for review at SAM/IG/8 meeting. It was circulated to all States of the Region for review and final version was presented at SAM/IG/11 meeting. In order to measure the real impact, joint work was undertaken using the SLS-4000 station and other 110 GPS L1 and L2 stations installed in Brazil. Data was collected over a period of maximum solar activity, although it was the lowest in the last 100 years. From the data obtained, Brazil concluded that so far, the SLS-4000 station may not be used in full for CAT I operations in low latitude regions. Accordingly, ICEA (*Instituto de Control del Espacio Aéreo*) will continue research in cooperation with the FAA and the supplier (Honeywell), seeking to develop a risk model capable of withstanding ionosphere behaviour in low latitudes.

Project deliverables	Relationship with the performance-based regional plan and ASBU block 0 modules	Responsible party	Status of implementation	Delivery date	Comments
					As of December 2017, the SLS-4000 station does not meet ICAO's integrity and availability requirements. Brazil continues research in collaboration with universities and Honeywell, seeking to develop a risk model applicable to the SAM Region. A review of the practical guide for the implementation of the GBAS system will follow after completing the development of a risk model capable of withstanding ionosphere behaviour at low latitudes. This is to be completed by the last quarter of 2018. SAMIG/23 meeting, may 2019, updated the information
Analyse DME/DME and GNSS infrastructure and coverage needed to support PBN implementation					
Analysis of the DME/DME and GNSS infrastructure required to support PBN implementation in the SAM Region	SAM PFF CNS/03 SAM PFF ATM/01 ATM/02 ATM/03 ANRF B0-APTA(65) B0-FRTO(10), B0-CDO(05) and B0-CCO(20)	Fabio Augusto Andrade and Andre Jansen (Brazil) Paulo Vila and Tomás Macedo (Peru)		Coverage study to support RNAV-5 completed (SAM/IG/8, October 2011)	A *DME/DME coverage study* was presented and reviewed at the SAM/IG/7 meeting (Lima, Peru, 23-27 May 2011). The coverage study was conducted using the EMACS tool and the results were delivered in a KMZ file clearly showing DME/DME coverage over the geographical map of the SAM Region, using *Google Earth*. The study only supports the RNAV-5 procedure.
Development of guidance on the use and availability of GNSS performance forecast/validation tools.					

Project deliverables	Relationship with the performance-based regional plan and ASBU block 0 modules	Responsible party	Status of implementation	Delivery date	Comments
Implementation of a RAIM availability prediction service	SAMPFF CNS/03 SAM PFF ATM/01 ATM/02 ATM/03 ANRF B0-APTA (65), B0-FRTO(10) B0-CDO(05) and B0-CCO(20)	Project coordinator SAM/IG PBN Group		November 2014	Two web-based remote courses were conducted on 15 and 16 September 2014, one in English and the other in Spanish, mainly including explanation of the tools contained in the SAM RAIM availability prediction service website (SATDIS), the code assignment procedure, data import and export, and the query and failure resolution procedure. The course was attended by all focal points nominated by the States, as well as by other participants designated by the States. All focal points received from the service provider the respective user name and password to access SATDIS as administrators. The SATDIS website in three languages (Spanish, Portuguese and English), became operational on 17 September 2014. The SATDIS FSAT was conducted on 18 November 2014. The RAIM availability prediction service is operating since 16 November 2014. NOTE.- FIRST SEMESTER 2019, A BID PROCESS IS BEING PREPARED FOR MAINTAIN SATDIS TOOL AVAILABLE.
Monitor activities for the implementation of air navigation systems in support of PBN		ICAO		January 2011 - December 2018	

Project deliverables	Relationship with the performance-based regional plan and ASBU block 0 modules	Responsible party	Status of implementation	Delivery date	Comments
Resources needed	Implementation of the RAIM availability prediction service.				

Grey *– Task not started*
Green *– Activity underway as scheduled*
Yellow *– Activity started with some delay but expected to be completed on time*
Red *– I has not been possible to implement this activity as scheduled; mitigating measures are required*

APPENDIX D
IMPROVE DEMAND AND CAPACITY BALANCING (DCB) /
MEJORAR EL EQUILIBRIO ENTRE LA DEMANDA Y LA CAPACIDAD (DCB)

CAR Region / Región CAR	**PROJECT DESCRIPTION / DESCRIPCION DEL PROYECTO (DP)**	**DP N° B1**	
Programme / Programa	**Title of the Project / Título del Proyecto**	**Start / Fecha inicio**	**End / Fecha término**
Improve demand and capacity balancing (DCB) / Mejorar el equilibrio entre demanda y capacidad (DCB) (Programme Coordinator / Coordinador del Programa: Eddian Méndez)	*Improve demand and capacity balancing (DCB) /* *Mejorar el equilibrio entre demanda y capacidad (DCB)* Project Coordinator / Coordinador del Proyecto: Greg Byus (United States / Estados Unidos) Jorge Centella / Ricardo Martínez (Cuba) Deano Ledford (Jamaica) Curtis Fraser (Trinidad and Tobago) Kapri Kupper (CANSO) Fernando Soto (COCESNA)	2008	*2019*
Objective / Objetivo	Support the ATFM implementation based on the regional performance objectives of the Performance-based Air Navigation Implementation Plan for NAM/CAR Regions (RPBANIP NAM/CAR). / Apoyar la implementación ATFM con base en los objetivos regionales de performance del Plan de Implementación basada en la Performance para las Regiones NAM/CAR (RPBANIP NAM/CAR).		
Scope / Alcance	Progressive implementation of the ATFM service in CAR Region to ensure demand and capacity balancing (DCB). / Implantación progresiva del servicio ATFM en la Región CAR para asegurar un equilibrio entre demanda y capacidad (DCB).		
Metrics / Métricas	• % of States with coordination ATFM procedures implemented / % de Estados con procedimientos de coordinación ATFM implementados. • % of States with Flow Management Unit (FMU) or Flow Management Position (FMP) implemented. / % de Estados con dependencias de Organización de la afluencia (FMU) o puestos de gestión de la afluencia (FMP) implementadas.		
Strategy / Estrategia	The implementation activities will be coordinated between Project members, the Project Coordinator and the Programme Coordinator. The Programme Coordinator will coordinate with the Project Coordinator requirements of other projects and NAM/CAR implementation working groups. Experts nominated by States, Territories and International Organizations will be incorporated, as required. / La ejecución de las actividades será coordinada entre miembros del Proyecto, el Coordinador del Proyecto y el Coordinador del Programa. El coordinador del Programa coordinará con el Coordinador del Proyecto los requerimientos de otros proyectos y Grupos de Trabajo de Implementación NAM/CAR. Se incorporarán expertos nominados por los Estados, Territorios y Organizaciones Internacional, según sea requerido.		

Targets / Metas	• 60% of CAR States with ATFM units or Flow Management Position by December 2014. /on-going 60% de Estados de la Región CAR con unidades ATFM o puestos de gestión de afluencia implementados en Diciembre de 2014 /En progreso • 90% of CAR States with ATFM procedures implemented by December 2016. / on-going 90% de Estados de la región CAR con procedimientos ATFM implementados en Diciembre de 2016 / En progreso
Justification / Justificación	GREPECAS supported the ATFM implementation to ensure an optimun traffic flow when demand exceeds or is expected to exceed the available capacity of the ATS system. / El GREPECAS apoyó la implantación de la ATFM para garantizar una afluencia óptima de tránsito aéreo durante períodos en los cuales la demanda excede o se espera exceda la capacidad disponible del sistema ATS.
Related Projects / Proyectos relacionados	• PBN Implementation. / Implementar la Navegación Basada en la Performance (PBN). • Flexible use of airspace. Uso flexible del espacio aéreo. • Improve ATM Situacional Awareness. / Mejorar la Conciencia Situacional ATM.

Project deliverables / Resultados entregables del Proyecto	Relationship with RPB-ANIP NAM/CAR / Relación con el RPB-ANIP NAM/CAR	Responsible / Responsable	Status of implementation / Estado de Implantación*	Delivery date / Fecha entrega	Remarks / Comentarios
Define common elements of ATM situational awareness between FMUs; ▪ common traffic displays, ▪ common weather displays (Internet), ▪ communications (teleconferences, web), and ▪ regular teleconference /messages methodology advisories /Definir los elementos comunes de conciencia situacional ATM; ▪ visualización común de tránsito, ▪ visualización común de condiciones meteorológicas (Internet), ▪ comunicaciones (conferencias telefónicas, web), y ▪ metodología de asesorías regulares mediante conferencias telefónicas	RPOs 1, 2, 3, 9	States, Territories, International Organizations / Estados, Territorios, Organizaciones Internacionales		Dec 2019 / Dic 2019	Regional teleconferences are carried out on weekly basis through agreed methodology. Additional situational awareness requirements will be defined in the short term. / Se llevan a cabo teleconferencias regionales semanalmente con la metodología acordada. Requisitos adicionales de conciencia situacional ATM serán definidos en el corto plazo.

Project deliverables / Resultados entregables del Proyecto	Relationship with RPB-ANIP NAM/CAR / Relación con el RPB-ANIP NAM/CAR	Responsible / Responsable	Status of implementation / Estado de Implantación*	Delivery date / Fecha entrega	Remarks / Comentarios
Develop an ATFM proposal for amendment (PFA) to regional supplementary procedures (Doc 7030) . / Desarrollar una propuesta de enmienda (PFA) a los procedimientos suplementarios regionales (Doc 7030)	RPOs 2, 3	States, Territories, International Organizations / Estados, Territorios, Organizaciones Internacionales		Completed / Completada	ATFM CONOPS presented for approval / CONOPS ATFM presentado para aprobación
Develop operational agreements between ATFM units for interregional demand/capacity balancing. / Desarrollar acuerdos operacionales entre unidades ATFM para equilibrar la demanda/capacidad interregional.	RPOs 3	States, Territories, International Organizations / Estados, Territorios, Organizaciones Internacionales		Dec 2019 / Dic 2019	Develop a model of ATFM LOAs based on the ICAO Doc 9971 that includes a Model of ATFM LOA. / Desarrollar un modelo de LOA basado en el Doc 9971 de la OACI que incluya un modelo de LOA ATFM.
Required Resources / Recursos necesarios	CAR Regional Project with the participation of States to support ATFM training aspects. / Proyecto regional CAR con la participación de los Estados para apoyar los asuntos de instrucción ATFM.				

Grey / Gris: *Task not started / Tarea no iniciada;*
Green / Verde: *Activity underway as scheduled / Actividad en progreso de acuerdo con el cronograma;*
Yellow / Amarillo: *Activity started with some delay but expected to be completed on time / Actividad iniciada con cierto retardo pero estaría llegando a tiempo en su implantación;*
Red / Rojo: *It has not been posible to implement this activity as scheduled; mitigating measures are required / No se ha logrado la implantación de la actividad en el lapso de tiempo estimado se requiere adoptar medidas mitigatorias.*

IMPLEMENTATION OF FLEXIBLE USE OF AIRSPACE (FUA)
/IMPLEMENTACIÓN DEL USO FLEXIBLE DEL ESPACIO AÉREO (FUA)

CAR Region / Región CAR	**PROJECT DESCRIPTION / DESCRIPCION DEL PROYECTO (DP)**	**DP N° B2**	
Programme Programa	**Title of the Project / Titulo del Proyecto**	**Start / Fecha inicio**	**End / Fecha término**
Implementation of flexible use of airspace (FUA) / Implementación del uso flexible del espacio aéreo (FUA) (Programme Coordinator Coordinador del Programa: Eddian Méndez)	*Implementation of flexible use of airspace (FUA) / Implementación del uso flexible del espacio aéreo (FUA)* Project Coordinator / Coordinador del Proyecto: Greg Byus (United States / Estados Unidos) Jorge Centella / Ricardo Martínez (Cuba) Deano Ledford (Jamaica) Curtis Fraser (Trinidad and Tobago) Kapri Kupper (CANSO) Fernando Soto (COCESNA)	2008	2019
Objective / Objetivo	Support the implementation for the optimization, balance and equity in the use of airspace between different users and achieve a better civil/military coordination and cooperation, reinforcing air safety based on regional performance objectives of the Performance based Implementation Plan for NAM/CAR Regions (NAM/CAR RPBANIP) / Apoyar la implementación para la optimización, el equilibrio y la equidad en el uso del espacio aéreo entre los diferentes usuarios y lograr una mejor coordinación y cooperación civil/militar reforzando la seguridad operacional, en base a los objetivos regionales de performance del Plan de Implementación basada en la Performance para las Regiones NAM/CAR (RPBANIP NAM/CAR)		
Scope / Alcance	Development of guides for the implementation of flexible use of airspace (FUA) / Elaboración de guías para la implantación del Uso flexible del espacio aéreo (FUA)		
Metrics / Métricas	• % of States with civil/military coordination Committees / % de Estados con Comités de Coordinación Civil/Militar • % of reduction in number of permanent reserved airspace / % de reducción del número de espacios aéreos reservados de carácter permanente • Reduction in number of permanent reserved airspace / Reducción del número de espacios aéreos reservados de carácter permanente		
Strategy / Estrategia	The implementation of activities will be coordinated between members of the Project, the Project Coordinator and the Programme Coordinator. The Programme Coordinator will coordinate with the project coordinator the requirements of other projects and NAM/CAR implementation working groups. Experts nominated by States, Territories and International Organizations will be incorporated to develop tasks as required / La ejecución de las actividades será coordinada entre miembros del Proyecto, el Coordinador del Proyecto y el Coordinador del Programa. El Coordinador del Programa coordinará con el Coordinador del Proyecto los requerimientos de otros proyectos y Grupos de Trabajo de Implementación NAM/CAR. Se incorporarán expertos nominados por los Estados, Territorios y Organizaciones Internacionales para desarrollar las tareas, según se requiera		

Goals / Metas	• 80% of CAR Region States having implemented civil/military Coordination Committees for the flexible use of airspace (FUA) /Completed • 80% de los Estados de la Región CAR con Comités de Coordinación Civil/Militar implantados para el Uso flexible del espacio aéreo (FUA) /Completado
Justification / Justificación	GREPECAS supported the implementation of flexible use of airspace (FUA) for the optimization of ATS airspace and air traffic flow management (ATFM) efficiency / El GREPECAS apoyó la implantación del uso flexible del espacio aéreo (FUA) para optimizar la eficiencia del espacio aéreo ATS y la gestión de la afluencia del tránsito aéreo (ATFM).
Related Projects / Proyectos relacionados	• Implement PBN / Implementar la PBN • Improve balance between demand and capacity / Mejorar el equilibrio entre la demanda y capacidad • Improve ATM situational awarenes / Mejorar la Conciencia Situacional ATM

Project deliverables / Entregables del Proyecto	Relationship with RPB-ANIP / Relación con el RPB-ANIP NAM/CAR	Responsible / Responsable	Status of implementation / Estado de Implantación*	Delivery date / Fecha entrega	Remarks / Comentarios
Conduct a regional review of special use of airspace / Llevar a cabo una revisión regional del espacio aéreo de uso especial.	RPOs 1, 2, 3	PBN TF		Dec 2019 / Dec 2019	Revision of the special use of airspace will be carried out in 2019 / La revisión del espacio aéreo de uso especial se llevara a cabo en 2019
Required Resources / Recursos necesarios	CAR Regional Project with the participation of States to support civil-military coordination for the flexible use of airspace (FUA) / Proyecto regional CAR con la participación de los Estados para apoyar la coordinación civil-militar para el uso flexible del espacio aéreo (FUA)				

Grey / Gris: *Task not started / Tarea no iniciada;*
Green / Verde: *Activity underway as scheduled / Actividad en progreso de acuerdo con el cronograma;*
Yellow / Amarillo: *Activity started with some delay but expected to be completed on time / Actividad iniciada con cierto retardo pero estaría llegando a tiempo en su implantación;*
Red / Rojo: *It has not been posible to implement this activity as scheduled; mitigating measures are required / No se ha logrado la implantación de la actividad en el lapso de tiempo estimado se requiere adoptar medidas mitigatorias.*

PROJECT B1 – IMPROVE DEMAND-CAPACITY BALANCING

SAM Region	**PROJECT DESCRIPTION (DP)**	DP N° B1	
Programme	**Project Title**	**Start**	**End**
Air traffic flow management (ATFM) *(Programme coordinator: ATM RO Fernando Hermoza Hubner)*	*Improve demand-capacity balancing* *Project coordinator: Nicolas Borovich (Argentina)*	2012	2022
Objective	Avoid overloading the ATC and airport systems, strengthening safety, taking into consideration the reduction in the number of delays caused by meteorological and traffic conditions, thus reducing fuel consumption and contaminating emissions. Likewise, improve prediction and management of surplus demand for services in ATC sectors and aerodromes.		
Scope	The scope of this project establishes that ATFM implementation should start with airport and airspace monitoring in order to identify significant increases in ground delays and in-flight holding, as well as bottlenecks (ATC sector, runway, apron, and airport facilities). Furthermore, capacity calculation and air traffic demand analysis are important elements to improve demand/capacity balancing.		
Metrics	• % States that have calculated runway and ATC sector capacity • % States that have implemented ATFM in flow management units (FMUs) or flow management positions (FMPs)		
Strategy	Project activities define ATFM implementation in the SAM Region through an airspace demand and capacity analysis, taking into account that States that are in the process of implementation shall coordinate with the ATM community to define the actions required for ATFM implementation. The infrastructure and the database, as well as the policy, standards, and procedures, are important components for the execution of this Project.		
Goals	• SAM States with experts trained in runway and airspace capacity (ATC sector) calculation • ATFM performance oversight plan • CAR/SAM inter-regional coordination		

Rationale	GREPECAS considered that early ATFM implementation should ensure optimum air traffic flow to or through certain areas during periods in which demand exceeded or was expected to exceed the available capacity of the ATC system. Therefore, the ATFM system should reduce aircraft delays, both in flight as well as on the ground, and avoid system overload.
Related projects	• Automation.

Project deliverables	Relationship with the performance-based regional plan (PFF)	Responsible party	Status of implementation*	Delivery date	Comments
Assess the progress made in the ATFM implementation work programme	B0-NOPS	Programme coordinator		2016	On-going task
Calculation of airspace (ATC sector) capacity	B0-NOPS	Juarez Franklin Gouveia		SAM/IG/9	Brazil and Colombia submitted their studies.
List of airspace sectors that have periods in which demand exceeds the existing capacity, including, if necessary, simulations by the States	B0-NOPS	Juarez Franklin Gouveia		SAM/IG/9 SAM/IG/10	Brazil and Colombia submitted their studies.
List of operational factors affecting demand and airspace capacity for the optimisation of existing capacity, including simulations, if necessary.	B0-NOPS	Juarez Franklin Gouveia		SAM/IG/9	Brazil and Colombia submitted their studies. Brazil, Paraguay, and Peru presented data at the SAM/IG/11 meeting.
Definition of the common elements of situational awareness	B0-NOPS	Paulo Vila		2012	The States that exchange information are: Chile, Colombia, Paraguay, and Venezuela.
Training of personnel in strategic ATFM airspace measures	B0-NOPS	Project RLA/06/901		2019	In 2010, an ATFM/CDM course was conducted in Brazil with the participation of several States. In March 2009, a course on runway and ATC sector capacity calculation was conducted in Brazil. In 2012, a course for instructors on runway and ATC sector capacity calculations was conducted in Lima.

					An ATFM seminar has been scheduled for June 2018 to address the proper implementation of ATFM measures.
List of factors affecting the implementation decision	B0-NOPS	Programme coordinator		2010	The following causes were identified at the SAM/IG/11 meeting: - States that do not have the requirement or the need to implement ATFM; - Budgetary and organisational reasons; - Lack of personnel specifically devoted to ATFM activities; - The personnel responsible for ATFM are involved in other functions.
Updating of runway capacity calculations	B0-NOPS	Programme coordinator		2019	85% of States have updated runway capacity calculations. Guyana and Suriname are still lacking capacity calculations.
Updating of airspace (ATC sector) capacity calculations	B0-NOPS	Programme coordinator		2019	6 States of the Region have performed ATC sector capacity calculations prior to implementation, 5 have not performed the activity, and information is still to be received from 3 States.

Airspace monitoring processes Traffic demand analysis processes Standards on FMU/FMP procedures Implementation of preliminary ATFM measures Implementation of TMIs ATFM messaging Coordination of special events Civil/military exemptions and coordination	B0-NOPS	CGNA course Project RLA/06/901		November 2014 FINALISED	Completed on time
Replication of ATFM courses at national level	B0-NOPS	States		15/05/2015 FINALISED	The States replicated ATFM courses at national level.
ATFM measures during the Rio 2016 Olympic and Paralympic Games in Brazil	B0-NOPS	Brazil		13/05/2016 FINALISED	Details of the AIC of Brazil can be found in: http://publicacoes.decea.gov.br/?i=publicacao&id=4339
Status of implementation of ATFM	B0-NOPS	Programme coordinator		31/10/2016	By May 2017,71 % of the States had implemented ATFM.
CONOPS ATFM CAR SAM updated and approved by GREPECAS	B0-NOPS	Programme coordinator		July 2019	SAMIG/23 (June 2019) reviewed the draft. Presented for CRPP approval
Resources needed	Designation of experts for the execution of some of the deliverables.				

*

Grey **Task not started**
Green **Activity underway as scheduled**
Yellow **Activity started with some delay but expected to be completed on time**
Red **It has not been possible to implement this activity as scheduled; mitigation measures are required**

APPENDIX E

SAM Region	**PROJECT DESCRIPTION (PD)**	**PD N° D2**	
Programme	**Project Title**	**Starting Date**	**Ending Date**
Ground-ground and Air-ground Telecommunications Infrastructure (*Programme Coordinator: Onofrio Smarrelli)*	ATN Ground-ground and Air-ground Applications in the SAM Region *Project Coordinator: Jorge Merino (Peru)* *Contributing experts: Fabian Romero (Argentina), Murilo Loureiro (Brazil), Jorge Garcia (Peru), Pedro Patrián (Chile)*	May 2010	December 2019
Objective	Develop the implementation of ATN ground-ground and air-ground applications in the SAM Region		
Scope	Implementation of SAM ATN ground-ground and air-ground applications, including, at least: • Operational integration of international AMHS connections in the SAM Region • Operational integration of international AIDC connections in the SAM Region • Guidelines for the implementation of ground-air data in the SAM Region • Guideline for the implementation of AIDC		
Metrics	• Number of AMHS interconnections as stated in the Declaration of Bogota • Drafting of following guidelines: Guideline for the implementation of AIDC / Guideline for the implementation of ground-air data links in terminal, approach and aerodrome areas / DCL, DATIS and DVOLMET / CPDLC service through VDL in the SAM Region		
Strategy	• All tasks will be conducted by experts nominated by States and organizations of the SAM Region members of the project *ATN Ground-ground and Air-ground Applications in the SAM Region, and States of the SAM Region,* under management of the project coordinator, in coordination with the programme coordinator. Communications among Project members, as well as between the Project coordinator and programme coordinator, shall be carried out through teleconferences and the Internet. In addition, the programme coordinator, together with the project coordinator and the contributing experts, can convene at SAM/IG implementation meetings • Once studies are completed, the results will be submitted to the ICAO programme coordinator as a final consolidated document for its analysis, review, approval and presentation at the GREPECAS PPRC		
Goals	• Complete the migration towards the implementation of AMHS interconnection through IP protocol by December 2019 • Complete the drafting of guideline material for the implementation of AIDC; for the installation of ground/air data links in terminal, approach and aerodrome areas; DCL, DATS and DVOLMET; CPDLC service through VDL in the SAM Region by December 2013.		
Justification	• The implementation of ground-ground and air-ground data communications infrastructure will contribute to the reduction of air traffic control incidents, increasing the capacity of the transition of information with regard to the currently analogue based applications • This project contributes to the implementation of the ASBU modules B0 FICE, B0 TBO, B0 AMET and B0 DATM and SAM PFF SAM CNS 01, CNS 02, ATM 05, ATM 06, MET 03, MET 04, AIM 02 and ANRF B0 FICE, B0 TBO, B0 AMET and B0 DATM of the *Air Navigation System Performance-Based Implementation Plan for the SAM Region (SAM PBIP)*		

Related Projects	• Automation (systems interconnection) • ATFM • Improve ATM Situational Awareness

Project Deliverables	Relationship with Performance Based Regional Plan (PFF)	Responsible	Status of Implementation[1]	Delivery Date	Remarks
Review of the regional strategy for the implementation of ground-ground and air-ground applications in the SAM Region	PFF SAM CNS 01 CNS 02 ANRF B0 FICE and ANRF B0 TBO	Omar Gouarnalusse (Argentina)		June 2012	An initial review of the strategy was presented at SAM/IG/8 meeting (Lima, Peru, 10-14 October 2011). In July 2012, the Project Coordinator presented a preliminary version of the Guide, which was reviewed by the Programme Coordinator and presented at SAM/IG/10 implementation meeting for its review and approval
Guideline for the use of AIDC with the aim of reducing coordination errors	PFF SAM CNS 01 ATM 06 and ANRF B0 FICE	Javier Vittor (Argentina) Ruben Guillermo Silva (Argentina)		April 2013	**Completed** The guideline was finalized and presented at SAM/IG/11 meeting (13-17 October 2013) and circulated to SAM States for review.
Guideline for the implementation ground-air data links in the SAM Region	PFF SAM CNS 02 ATM 06 and ANRF B0 TBO	Andrés Jansen (Brazil)		October 2013	**Completed** The finalized guideline was presented and approved at SAM/IG/12 meeting

[1] ***Gray**: Activity has not started*
***Green**: Activity has or will deliver planned milestone as scheduled*
***Yellow**: Activity is behind schedule on milestone, but still within acceptable parameters to deliver milestone on time*
***Red**: Activity has failed to deliver milestone on time, mitigation measures need to be identified and implemented*

Project Deliverables	Relationship with Performance Based Regional Plan (PFF)	Responsible	Status of Implementation[1]	Delivery Date	Remarks
Operational integration of AMHS among States	SAM CNS 01 SAM ATM 05 SAM ATM 06 SAM MET 03 SAM MET 04 SAM AIM 02 ANRF B0 FICE ANRF B0 AMET ANRF B0 DATM	States / Project Coordinator / Programme Coordinator		December 2019	Of all the AMHS installed in the Region, the following are interconnected in AMHS (P1 Protocol) Argentina-Brazil (pre-operational), Argentina-Paraguay (operational), Argentina-Peru (pre-operational), Argentina-Uruguay (pre-operational),Colombia-Peru (operational), Ecuador-Peru (operational), Brazil-Peru (operational), Brazil-Spain (operational), Chile-Peru (operational), Brazil-Colombia (operational), Venezuela-Colombia (operational), Venezuela-Peru (operational), Venezuela-Brazil (operational). Further information on Appendix A of this working paper
Monitor the implementation of ATN ground-ground and air-ground applications activities in the SAM Region		ICAO		March 2010-December 2019	
Resources necessary	Implementation of AIDC operational integration by the States of the Region				

DRAFT VERSION PROJECT FILE

PROGRAMME C: ATM AUTOMATION AND IMPROVED ATM SITUATIONAL AWARENESS IN THE CAR REGION
PROGRAMME D: ATN AND ITS APPLICATIONS GROUND-GROUND AND AIR-GROUND OF THE ATN

CAR/SAM Region	PROJECT DESCRIPTION (PD)		PD N° C/D	
Programme	**Title of the Project**		**Starting date**	**Ending Date**
ATM AUTOMATION AND ATM SITUATIONAL AWARENESS (ICAO programme coordinator: Mayda Avila)	**ATM AUTOMATION AND IMPROVED ATM SITUATIONAL AWARENESS IN THE CAR REGION** **Projects C and D**		July 2019	June 2022
	Project coordinators:	Carlos M. Jiménez (Cuba) Fernando Casso (Dominican Republic) Dulce Roses (United States)		
	Experts supporting the project:	Jenny Lee/COCESNA (Honduras) Dan Evans/FAA (United States) Doug Arbuckle/FAA (United States) Alejandro Rodriguez/FAA (United States) Emmanuel Jacques/ (Haiti) Layla Rodriguez Vidal/ (Cuba) Reybin Sanabria/ COCESNA (Honduras) Roger Perez/ COCESNA (Honduras) Moises Cukier/ COCESNA (Honduras)		

Objectives	The objective of the Project is boosting the regional automation implementation and the surveillance systems implementation in all the CAR region to support reaching the three regional objectives: 1. Reduction of aircraft longitudinal separation (efficiency) 2. Boost the integration of the regional aeronautical information 3. Reduction of CO2 emissions
Scope	The scope of the Project for 2019 and 2020 includes: 1. Support the AIDC and NAM/IDC connections implementation through follow-up, missions to the States that are in start-up process and through lessons learnt of States that with more expertise. 2. Reduction of the impact that the flight plan errors may cause in the automatization and safety through the implementation of new analysis mechanisms, defined ty the AIDC/FPL Task Force. 3. Promote that CAR States finish their surveillance data sharing process 4. To present, at the end of this stage, alternatives to the Sates to provide surveillance data in oceanic and continental areas without radar coverage. 5. To support the PBN implementation process.

CAR/SAM Region	PROJECT DESCRIPTION (PD)	PD N° C/D	
Programme	Title of the Project	Starting date	Ending Date
Metrics	1. 10% increase in the automatized channels implementation 2. Finishing the data sharing implementations among all the States by 2022 3. 100% of alternative surveillance coverage documentation in the areas that today do not have coverage (already developed) 4. CNS plan to support the PBN implementation (already developed)		
Goals	With this Project it is expected supporting the States with the operational enhancements implementation that result from the ATM systems implementation: • NAM/CAR RPBANIP ASBU-ASUR Objectives • NAM/CAR RPBANIP ASBU-SNET Objectives • NAM/CAR RPBANIP ASBU-FICE AIDC Objectives • Enhance ATM Situational awareness		
Strategy	• The Project will be carried out under the ANI/WG Task Forces activities: 1. AIDC/FPL with errors Task Force (AIDC/TF); https://www.icao.int/NACC/Pages/regional-group-AIDC.aspx 2. Surveillance Task Force (SURV/TF): https://www.icao.int/NACC/Pages/regional-group-ADSB.aspx 3. MEVA/TMG Task Force: https://www.icao.int/NACC/Pages/nacc-regionalgroups-meva.aspx		
Justification	The CAR regional have implemented 55% of automatized facilities, 60% radar coverage in overlapped areas of 11 CAR Sates and new CNS infrastructure in 10 CAR States, these advantages in the communications, navigation and surveillance infrastructure implementation must be used to promote operational objectives for a regional benefit. In this regard, this Project will support reaching the three CAR strategic objectives - reduction of aircraft longitudinal separation (efficiency), boost the integration of the regional aeronautical information, and reduction of CO2 emissions, that will be developed by the ANI/WG implementation group and its new implementation structure that carries out its activities though specialized Task Forces.		
Related projects	Updated GREPECAS C and D Projects		

Pending Plan Activities

Project deliverables	Relation with the Regional Performance Objectives (RPO) and ASBU B0 modules	Responsible	Implementation Status	Date	Comments
Flight plan rejection message automation implementation for the region	NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO RPO 4	Dan Evans/FAA Cuba COCESNA		December 2019	According with the TF AIDC activities
Monitoring the AIDC implementation plan in each State with the capacity to use this facility	NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO RPO 4	Jenny Lee COCESNA Fernando Casso Dominican Republic		Valid	Pending 45% of implementation
Guidance for the ADS-B operational implementation and data sharing	NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO-ACDM- FICE RPO 4 and 6	Carlos Jimenez		August 2019	ADS-B implementation CONOPS under development. The final version will be presented in the ADS-B in august 2019.
To promote that the States start radar data sharing	NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO-ACDM- FICE RPO 4 and 6	Carlos Jimenez Cuba		Valid	Pending 40% of implementation
Necessary resources	• Experts designation in deliverables execution • Implement required facilities to allow the interconnection of automatized systems in accordance with the stablished dates in the MoU elaborated and signed accordingly				
New Proposed Activities AIDC Task Force					
Promote Mechanisms for air plan errors reduction					
Update of the information of the Aeronautical Heads of Offices by State to send flight plans.	NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO RPO 4	AIDC/TF		June 2020	
Implementation of flight plan errors analysis (10 per month) and propose solutions.	NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO RPO 4	AIDC/TF		June 2020	
Update of the AMHS Systems administrators list	RPO 4 del NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO	AIDC/TF States		June 2020	

Project deliverables	**Relation with the Regional Performance Objectives (RPO) and ASBU B0 modules**	**Responsible**	**Implementation Status**	**Date**	**Comments**
Promote a regional mechanism to assure the correct updating of the AMHS Address database.	NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO RPO 4	AIDC/TF States		June 2020	
Review of AIP information of the States, update valid information	NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO RPO	AIDC/TF AIM/TF States		June 2020	
Assure that the mechanisms update the aircraft databases in the different control centres.	NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO RPO 4	AIDC/TF		June 2020	
Support the AIDC and NAM/ICD protocols implementation in Costa Rica, Curacao, Belize and Jamaica	NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO RPO 4	AIDC/TF States		June 2020	
SURVEILLANCE GROUP					
Collect statistics of ADS-B trials	NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO-ACDM-FICE RPO 4 and 6	Cuba, Jamaica, México, Trinidad and Tobago and COCESNA		December 2019	
CONOPS review and update	NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO-ACDM-FICE RPO 4 and 6	CONOPS Ad Hoc Group		August 2019	
Support the surveillance data sharing implementation	NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO-ACDM-FICE RPO 4 and 6	Cuba, Jamaica, México		June 2020	
Elaborate a guide for the plan of surveillance systems acquisition	NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO-ACDM-FICE RPO 4 and 6	Cuba		January 2020	
Elaborate a feasibility document for the use of Satellite ADS-B	NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO-ACDM-FICE RPO 4 and 6	Dominican Republic, Curacao and COCESNA		January 2020	

Project deliverables	**Relation with the Regional Performance Objectives (RPO) and ASBU B0 modules**	**Responsible**	**Implementation Status**	**Date**	**Comments**
Support the operational implementation process kick-off of the new surveillance systems (ADS-B, ADS-C,CPDLC, MLAT and WAM)	NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO-ACDM-FICE RPO 4 and 6	SURV TF		June 2020	Provide updated information
Support the process for the publication of ADS-B regulations	NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO-ACDM-FICE RPO 4 and 6	SURV TF		October 2019	
Achieve a 100% coverage of the surveillance required by the PBN in each FIR of the region	NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO-ACDM-FICE RPO 4 and 6	SURV TV		June 2022	Provide updated information up to june 2020
MEVA/TMG					
Development of the MEVA IV Phase	NAM/CAR ACDM-FICE RPO 4, 5, 6, 7 and 8	MEVA/TMG Members	June 2020		Provide implementation status
XML trial development on the AMHS	NAM/CAR ACDM-FICE RPO 4, 5, 6, 7 and 8	Cuba United States COCESNA	December 2019		
Development of an aeronautical frequencies protection process	NAM/CAR ACDM-FICE RPO 4, 5, 6, 7 and 8	Haiti MEVA members	June 2020		Provide implementation status

EXECUTION (2018-2019)

CAR REGION PROJECTS C

CAR Region	PROJECT DESCRIPTION	DP N° C	
Programme	**Title of the Project**	**Start**	**End**
AUTOMATION AND ATM SITUATIONAL AWARENESS (ICAO programme coordinator: Mayda Ávila)	**AUTOMATION AND IMPROVED ATM SITUATIONAL AWARENESS IN THE CAR REGION** Project Coordinator: Carlos M. Jimenez (Cuba) Fernando Casso Dulce Roses Experts contributing to the project: Carlos Miguel Jimenez, Jorge Centella (Cuba) Julio Cesar Mejia (Dominican Republic) Dulce Roses (United States) Jenny Lee (COCESNA) ANI/WG	October 2011	June 2019
Objectives	Based on the NAM/CAR Regional Performance-Based Air Navigation Implementation Plan (RPBANIP) regional performance objectives: 1. Support NAM/CAR States with implementation of automated systems and interconnection at a regional level. 2. Support the implementation of Situational Awareness improvements at CAR Region ATS units.		
Scope	The scope of the project foresees the assessment and identification of the main levels of automation, production of guidelines for the use of existing capabilities, proposed improvements to automation levels to enhance operations and safety, development of studies and guidelines for automation and operational use of capabilities to reach these situational awareness improvements, supporting the implementation of different applications, such as: common display of traffic, common display of meteorological conditions, and communications in general.		
Metrics	• Number of States/ANSPs participating in regional automation tests • Number of States/ANSPs implementing ATC automation functionalities between systems • Complete proposals and guidance material for the reduction of operational errors with before and after effective date of implementation guides for the CAR/NAM Region • Number of States/ANSPs reporting a reduction of incidents resulting from implementing improvements in electronic ground and air alerts • Number of States/ANSPs conducting ADS-B data using the guides developed		

CAR Region	PROJECT DESCRIPTION	DP N° C	
Programme	**Title of the Project**	**Start**	**End**
Goals	With this Project is expected to support States with the operational improvement implementation resulting from the implementation of ATM systems: • NAM/CAR RPBANIP ASBU-ASUR • NAM/CAR RPBANIP ASBU-SNET • NAM/CAR RPBANIP ASBU-FICE AIDC Target • Improvement of the ATM Situational Awareness		
Strategy	• The Project activities execution will be coordinated among the project members, the project coordinator, and the programme coordinator, mainly through teleconferences and meetings held from time to time in accordance with the activities work programme. • The project coordinator will coordinate, as necessary, with the Programme Coordinator, the requirements for other projects and information from the NAM/CAR implementation Working Groups. Additional experts have been included according to the tasks and specialised works.		
Justification	With the emergence of new technologies in ATM automated systems, as well as the standardization of communication protocols, data exchange in ATS units is actually viable in different ways. Available protocols in the systems such as OLDI and AIDC allow ATS units to establish automated coordination, improving operational reliability and procedural effectiveness. Likewise, the standardization in processing surveillance data in ASTERIX format allows easy radar data exchange between FIRs. These automated exchanges will result in a significant reduction of ATS incident rates and operational errors. Improving situational awareness facilitates coordination, improves efficiency and safety, and ensures that the different members of the ATM community have the same information when adopting decisions collaboratively.		
Related projects	This project is related with Programme D Project (ATN and its ground-ground and air-ground applications)		

Project Deliverables	Relationship with the regional performance-Objectives (RPO) and ASBU B0 modules	Responsible Party	Status of Implementation	Date of Delivery	Comments
Level of automation existing in the CAR Region	RPO 4 and 6 of NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO-ACDM-FICE	ICAO - Carlos Jimenez, Cuba		Completed	
Guidance material and considerations for the drafting of automation agreements/ Sample of MoU for automation between States	RPO 4 and 6 of NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO-ACDM-FICE	Carlos Jiménez, Cuba		Completed	Several MOU proposals are available.
Proposals or guidelines for improving the operation and performance of flight plan data processing system, and automatic exchange of ATS messages	RPO 4 of NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO	Jenny Lee COCESNA Fernando Casso Dominican Republic		Completed	According with the AIDC TF activities
Implementation of the errors regional plan of the flight plan	RPO 4 of the NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO	Fernando Casso – Dominican Republic		Completed	According with the AIDC TF activities
Implementation of the standardization of the rejects message of the flight plan for the Region	RPO 4 of the NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO	Dan Evans/FAA		December 2019	According with the AIDC TF activities
Proposals and guidance on the use and benefits of additional/advanced automation support tools to increase aeronautical information sharing	RPO 4 of the NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO	Dulce Roses/FAA		Canceled	New date for June 2018 is proposed due to lack of responses
Monitor the implementation of ATM automation and surveillance data exchange – Progress Report	RPO 4 of NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO	Fernando Casso – Dominican Republic		Completed	An AIDC implementation regional plan has been developed as part of the ATM automation.

Project Deliverables	Relationship with the regional performance-Objectives (RPO) and ASBU B0 modules	Responsible Party	Status of Implementation	Date of Delivery	Comments
Monitor that the AIDC implementation plan in each State has the capacity to use this facility.	RPO 4 of the NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO	Jenny Lee COCESNA Fernando Casso Dominican Republic		December 2018	Jenny Lee for Central America Fernando Casso for the Caribbean
Guidelines for the operational implementation of ADS-B and data exchange	RPO 4 and 6 of NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO-ACDM-FICE	Carlos Jimenez – Cuba		August 2019	CONOPS of ADS-B implementation under development. The ADS-B CONOPS initial draft is available
Guidance on the use of AIDC to reduce coordination errors	RPO 4 and 6 of NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO-ACDM-FICE	Fernando Casso – Dominican Republic		Completed	Date adjusted to the AIDC TF
Encourage States to share radar data	RPO 4 and 6 del NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO-ACDM-FICE	Carlos Jimenez – Cuba		In progress 67% Implemented	According to the working program of the Surveillance Group of the NAM/CAR region.
Resources needed	• Designation of experts for the execution of the deliverables • Implement required facilities that allow interconnection of automated systems according to the established dates in the elaborated and signed MoU, respectively.				

EXECUTION (2018-2019)

PROJECT ON THE ATN INFRASTRUCTURE IN THE CAR REGION AND ITS GROUND-GROUND AND GROUND-AIR APPLICATIONS

CAR Region	**PROJECT DESCRIPTION (DP)**		**DP N° D**	
Programme	**Project Title**		**Starting Date**	**Ending Date**
Ground-ground and air-ground communications infrastructure (ICAO programme coordinator: Mayda Avila)	ATN infrastructure in the CAR Region and its ground-ground and ground-air applications Project coordinator: Experts contributing to the project:	Dulce Roses (United States) Carlos Jimenez (Cuba) Fernando Casso (Dominican Republic) Roger Perez (COCESNA) Veronica Ramdath/ Randy Gomes (Trinidad and Tobago) ANI/WG MEVA TMG	March 2010	June 2019
Objective	Support the implementation of the ATN network in the CAR Region and its ground-ground and air-ground applications, based on the regional performance objectives of the NAM/CAR performance-based implementation plan (NAM/CAR RPBANIP) and the CAR/SAM ANP CNS Tables 1Ba, 1Bb, and 1Bc.			
Scope	The project scope includes: • an analysis of the existing capacity for CAR networks for ATN implementation • an assessment and definition of technical improvements and/or requirements for ATN implementation • guidelines and recommendations to expedite the implementation of ground-ground (AIDC, AMHS) and air-ground applications, taking into account Doc GOLD			
Metrics	• Percentage of implementation of ATN architecture and routers • Number of AMHS/AIDC applications implemented in the CAR Region • Number of completed guidelines planned for ATN and its applications.			
Strategy	• Project activities were coordinated and will be coordinated through communications amongst the project members, the project coordinator and the programme coordinator, mainly via teleconferences and eventual meetings held during events according to the activities programme, as was the case of the different meetings of the working groups for the implementation in the CAR Region. • The project Coordinator will coordinate with the programme Coordinator, requirements from other projects and information from the NAM/CAR implementation working groups. Additional experts will be incorporated as required for specialized tasks. • The deliverables of this project will be sent to the programme Coordinator for its application in the NAM/CAR implementation groups.			
Goals	With this Project it is expected to support the following implementation goals of the NAM/CAR Regions: NAM/CAR RPBANIP and ASBU-FICE.			
Justification	Support implementation proposing core documentation so States can use it as a reference for the transition, testing, and ATN interconnection and to expedite ATN applications implementation according to the operation benefits expected.			

Related projects	This project is related to the projects of Programme C (Situational Awareness)

Project Deliverables	**Relation with The Regional Plan performance-based (PFF)**	**Responsible**	**Status of Implementation**[1]	**Date of delivery**	**Comments**
Performance assessment of the MEVA II REDDIG interconnection	RPO 6 of NAM/CAR RPBANIP/ ACDM- FICE	Project D		Completed	2014-2015 Successful performance conducted in the MEVA III-REDDIG II Meeting (Aruba 25-26 May 2015)
Technical study of CAR networks for ATN implementation	RPO 6 of NAM/CAR RPBANIP/ ACDM- FICE	Project D		Completed	
Assessment of preliminary test results to determine the required bandwidth for the ATN network in the CAR and SAM Regions	RPO 6 of NAM/CAR RPBANIP/ ACDM- FICE	Project D		Completed	
Study for the configuration of an IP backbone network	RPO 4,5, 6, 7 and 8 of NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO-ACDM-FICE-DAIM-AMET	Dom. Rep/ COCESNA		Completed	IPv4 Version 1.1 Addressing scheme was proposed for the CAR Region..
Plan for the transition of ATN and its applications in the CAR Region	RPO 4,5, 6, 7 and 8 of NAM/CAR RPBANIP/ RSEQ-SURF-ASUR-SNET-TBO-ACDM-FICE-DAIM-AMET	United States/COCESNA		Completed	

[1] *Grey* *Task not started yet*
Green *Activity being implemented as scheduled*
Yellow *Activity started with some delay, but expected to be implemented on time*
Red *Activity not implemented on time; mitigation measures are required*

Project Deliverables	Relation with The Regional Plan performance-based (PFF)	Responsible	Status of Implementation[1]	Date of delivery	Comments
AMHS addressing plan	RPO 6 of NAM/CAR RPBANIP/ ACDM- FICE	States/ Territories/ International Organisations		Completed	
Plan for the implementation of ATN ground-ground applications (AMHS)		United States/Dom. Rep/ Cuba/ Trinidad and Tobago		Completed	The CAR Regional AMHS Implementation Matrix was updated. With the new MEVA III Network, it is expected the implementation of 2 AMHS circuits for 2015 and two more are being tested.
Plan for the implementation of ATN ground-ground applications (AIDC)	RPO 6 of NAM/CAR RPBANIP/ ACDM- FICE	United States/COCESNA/ Cuba/ Trinidad and Tobago		Completed	The Regional NAM/CAR Regional AIDC Implementation Plan was updated. An Action Plan template for implementation using the NAM ICD was developed. A comparison of ICD was made as requested by Conclusion GREPECAS 17/9. Evaluation of interfaces for NAM ICD Class II and III to be included in AIDC Regional Plan implementation.
Assessment and recommendations guide for the ATN applications ground-air implementation according to Doc GOLD	RPO 6 of NAM/CAR RPBANIP/ ACDM- FICE	United States/COCESNA/ Trinidad and Tobago		Completed	The CDPLC/ADS-C service was implemented in 2017 in the CA FIR, and in PIARCO it is necessary to update the software of the Trinidad and Tobago Control Centre..
Plan for the transition of ATN ground-air applications	RPO 6 of NAM/CAR RPBANIP/ ACDM- FICE	Project D		Completed	

Project Deliverables	Relation with The Regional Plan performance-based (PFF)	Responsible	Status of Implementation[1]	Date of delivery	Comments
Project Deliverables	**Relation with The Regional Plan performance-based (PFF)**	**Responsible**	**Status of Implementation[2]**	**Date of delivery**	**Comments**
Assessment of AMHS infrastructure for MET XML	RPO 6 of NAM/CAR RPBANIP/ ACDM- FICE	United States, Dominican Republic, ICAO		December 2019	
Resources needed	Designation of experts and activities execution by the group of experts (WGs).				

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[2] *Grey* *Task not started yet*
Green *Activity being implemented as scheduled*
Yellow *Activity started with some delay, but expected to be implemented on time*
Red *Activity not implemented on time; mitigation measures are required*

APPENDIX F
C1 SAM PROJECT DESCRIPTION

SAM Region	**PROJECT DESCRIPTION (DP)**	**PD N° C1**	
Programme	**Project Title**	**Starting Date**	**Ending Date**
Automation and ATM Situational Awareness *(Programme Coordinator: Onofrio Smarrelli)*	Automation *Project Coordinator: Fabián Romero (Argentina)* *Contributing experts: Omar Gouarnalusse (Argentina), Ruben Silva (Argentina), Murilo Loureiro (Brazil), Jorge Merino (Peru), Johnny Avila (Peru), Mauricio Ferrer (Colombia) and SAM/IG ATM Automation Group*	May 2008	December 2019
Objective	Support States of the SAM Region in the implementation of automated systems, and in their regional interconnection		
Scope	The scope of the project includes the initial drafting of guidelines, trials for the identification of the automation level required at the Region's ATS units in the short and medium term, and the implementation of automation systems and their interconnection through the VSAT based South American digital network (REDDIG)		
Metrics	• Drafting of the following documents: ✓ Guidance document on automated systems requirements at ATS units (SSS) ✓ Guideline for the implementation of integrated automated systems ✓ Action plan for the interconnection of automated systems ✓ Preliminary interface control document (ICD) between systems for the interconnection of ACCs in the SAM Region ✓ Memorandum of Understanding (MoU) model for the interconnection of automated systems • Interconnection of automated systems between adjacent ACCs in the SAM Region: • Reduction in number of operational errors, including LHD in the SAM Region		
Strategy	• All tasks will be conducted by experts nominated by States and organizations of the SAM Region members of the Project *Automation, industry and SAM States*, under management of the project coordinator, in coordination with the programme coordinator. Communications among project members, as well as between the project coordinator and programme coordinator, shall be carried out through teleconferences. In addition, the programme coordinator, together with the project coordinator and the contributing experts, can convene at SAM/IG implementation meetings • Once studies are completed, the results will be submitted to the ICAO programme coordinator as a final consolidated document for its analysis, review, approval and presentation at the GREPECAS PPRC		

goals	• Initial drafting of 15 MoU for the interconnection of automated systems 6 MoU period 2009-2013 (implemented) 9 MoU period 2013-2019 • Implementation of the interconnection of automated systems Flight plan (AIDC) 15 AIDC interconnections period 2014-2016 (Declaration of Bogota) • Asterix protocol radar data 8 radar data exchanges using Asterix protocol period 2017-2019 1 radar data exchange owner for 2013 (implemented)
Justification	• The CAR/SAM air traffic control centres have had difficulties in duly coordinating air traffic, an important factor contributing in air traffic incidents. The air traffic control automated centres' interconnection will permit a coordinated automated air traffic for the transfer of responsibilities between CAR/SAM adjacent area control centres, thus reducing the risk in aeronautical incidents generated by undue coordination activities and improving, at the same time, the planning phases for an efficient control of flights from/to corresponding Flight Information Regions (FIR). • The interconnection of automated systems would be facilitated, in view of REDDIG II (SAM VSAT regional network with support terrestrial network MPLS), which has the necessary capability to transport automated systems applications • This project contributes towards the implementation of modules B0 FICE, B0 ASUR and B0 SNET of ASBU Block 0 and the PFF SAM CNS 04, ATM 05, ATM 06, ANRF B084 (ASUR), ANRF B025 (FICE) and ANRF B0 102 (SNET) of the *Air Navigation System Performance-Based Implementation Plan for the SAM Region (SAM PBIP)*
Related Projects	• ATFM • Improve ATM Situational Awareness

Project Deliverables	Relationship with Performance Based Regional Plan (PFF) and ASBU Block 0 Modules	Responsible	Status of Implementation[1]	Delivery Date	Remarks
Regional guideline document for the automation level required according to the ATM service provided in airspace and international aerodromes, assessing • operational architecture design, • characteristics and attributes for interoperability, • data bases and software FPL, CPL, CNL, RLA, etc., and • technical requirements.	PFF SAM CNS 04 PFF SAM ATM 05 PFF SAM ATM 06 ANFR B0 ASUR (84) ARFN B0 SNET (102) ANRF BO.FICE(25)	Project Coordinator and ATM Automation Group		Completed June 2011	The System and Subsystem Specifications (SSS) document has been drafted for the identification of automated requirements necessary at ATS units (ACC), and a revision process has been conducted with the support of RLA/06/901 project and SAM/IG ATM Automation Group. Document published in site http://www.icao.int/SAM/Pages/eDocumentsDisplay.aspx?area=CNS

[1] ***Gray**: Activity has not started*
***Green**: Activity has or will deliver planned milestone as scheduled*
***Yellow**: Activity is behind schedule on milestone, but still within acceptable parameters to deliver milestone on time*
***Red**: Activity has failed to deliver milestone on time, mitigation measures need to be identified and implemented*

Project Deliverables	Relationship with Performance Based Regional Plan (PFF) and ASBU Block 0 Modules	Responsible	Status of Implementation[1]	Delivery Date	Remarks
Guideline for the integration of automated systems and corresponding action plan	PFF SAM CNS 04 PFF SAM ATM 05 PFF SAM ATM 06 ARFN B0 ASUR (84) ARFN B0 SNET (102)	Project Coordinator and ATM Automation Group		Completed October Completed May 2012	The following has been drafted: Guideline for the integration of automated systems and revision process. Action plan revision for the integration of automated systems and continuous revision. Both documents drafts with the support of RLA/06/901 project and the SAM/IG ATM Automation Group. Document published in site http://www.icao.int/SAM/Pages/eDocumentsDisplay.aspx?area=CNS
Preliminary interface control document (SICD) between systems for the interconnection of ACCs in the SAM Region	PFF SAM CNS 04 PFF SAM ATM 05 PFF SAM ATM 06 ANRF B0 FICE (25) ANRF B0 ASUR (84)	Programme Coordinator, Project Coordinator and ATM Automation Group		Completed October December	Document ICD drafted. Document elaborated with the support of RLA/98/003 and later, RLA/06/901. Document published in site http://www.icao.int/SAM/Pages/eDocumentsDisplay.aspx?area=CNS The ICD document is under updating process and is expected to be completed by mid-December 2016.

Project Deliverables	Relationship with Performance Based Regional Plan (PFF) and ASBU Block 0 Modules	Responsible	Status of Implementation[1]	Delivery Date	Remarks
Guidelines for elaboration of Memorandum of Understanding (MoU) for the implementation of the automation system interconnection	PFF SAM CNS 04 ANRF B0 FICE (25) B0 ASUR (84)	Project Coordinator and ATM Automation Group		Completed October	A model MoU for the interconnection of automated systems has been developed, with the support of RLA/06/901 project and SAM/IG ATM Automation Group. The MoU model is published in site http://www.icao.int/SAM/Pages/eDocumentsDisplay.aspx?area=CNS
Elaboration of Understanding (MoU) for the interconnection of automated systems	PFF SAM CNS 04 ARNF B0 FICE(25) ANRF B0 ASUR (84)	SAM States		April 2016	Six MoU have been drafted during the 2009-2013 period. Nine MoU would be implemented during the 2013-2019 period. No new MoU have been drafted since 2013 but interconnection tests have been conducted between adjacent ACCs both in pre-operational and operational phases.

Project Deliverables	Relationship with Performance Based Regional Plan (PFF) and ASBU Block 0 Modules	Responsible	Status of Implementation[1]	Delivery Date	Remarks
Interconnection of automated systems between adjacent ACCs	PFF SAM CNS 04 PFF SAM ATM 05 PFF SAM ATM 06 ANRF B0 FICE (25) B0 ASUR (84)	SAM States		December 2019	AIDC interconnections were implemented between: ACC Bogota–ACC Guayaquil (pre-operational) ACC Bogota–ACC Lima (pre-operational) ACC Lima–ACC Bogota (pre-operational) ACC Bogota–ACC Panama (pre-operational) ACC Ezeiza–ACC Cordoba(pre-operational) ACC Lima–ACC Iquique (pre-operational) ACC Cordoba–ACC Iquique (pre-operational) ACC Amazonico–ACC Lima (pre-operational) ACC Asuncion–ACC Resistencia (operational Jul 2016) ACC Curitiba-ACC Recife (operational Jun 2016) ACC Recife-ACC Brasilia (operational Jul 2016) ACC Curitiba-ACC Brasilia (operational Jul 2016) ACC Curitiba-ACC Amazonica (operational Jul 2016) ACC Amazonico-ACC Brasilia (operational Jun 2016) ACC Amazonico-ACC Recife (operational May 2016)

					For the operation of the AIDC, from 2015 to date six AIDC practical courses for controllers have been delivered in Chile, Colombia, Ecuador, Paraguay, Panama and Peru. Around 200 controllers were trained. The practical course in Paraguay was delivered in 2016 and all previous in 2015. A guidance document was developed to mitigate errors in FPL as well as its duplicity/multiplicity (September 2016).
Radar data exchange using Asterix protocol	FFPP SAM CNS04 PFF SAM ATM 05	SAM States	Pending begining	Dec 2019	The implementation of the radar data exchange using Asterix Protocol 62-63 hasn't been possible yet given that the majority radar data processing systems of the Region do not allow the fusion of surveillance systems with such protocols. The implementation of interconnection of radar data using Asterix Protocol 1, 2, 34 and 48 has not been possible since some States do not allow send signal radar with these protocols, therefore the implementation of interconnection was postponed for the period 2017-2019.
Monitor implementation progress of automation activities in the SAM Region		Programme Coordinator and Project Coordinator		May 2008 – December 2019	
Resources necessary	Implement facilities required by SAM States permitting the interconnection of automated systems in accordance with the dates established in the MoUs drafted and signed to this end				

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C2 SAM PROJECT DESCRIPTION

SAM Region	PROJECT DESCRIPTION (PD)	PD N° C2	
Programme	**Project Title**	**Starting Date**	**Ending Date**
ATM Automation and Situational Awareness *(Programme Coordinator: Onofrio Smarrelli*)	Improve ATM Situational Awareness in the SAM Region *Project Coordinator: Paulo Vila (Peru)* *Contributing experts: Murilo Loureiro (Brazil); José Rubira, Marcos Vidal and Jorge Otiniano (Peru); Javier Vittor (Argentina), André Jansen (Brazil) Ivan Salas (Ecuador)*	October 2011	December 2020
Objective	Develop guidelines supporting the implementation of improvements in the situational awareness of ATS units in the South American Region and follow-up to ADB-B implementation		
Scope	Guidelines supporting the implementation of various applications, such as common traffic visualization, common meteorological conditions visualization and communications in general • Analysis of the current surveillance infrastructure and identification of necessary improvements to support en route and terminal airspaces, airspace classification, PBN and ATFM • Implementation of ADS-B, ADS-c and/or MLAT surveillance systems at selected airspaces • Minimum common electronic information and data bases required in support of decision-making process and alert systems towards an interoperable situational awareness among centralized ATFM units • Implement flight plan data process systems (new FPL format) and data communications tools among ACC´s • Implement advanced automation support tools to contribute towards the sharing of aeronautical information • Follow-up to ADB-B implementation		
Metrics	Drafting of following documents: • Regional surveillance strategy for the implementation of systems in support of improvement of situational awareness – revised • Evaluation of the surveillance systems coverage in the SAM Region - completed • Guideline on technical/operational considerations for ADS-B implementation – completed • Guideline on technical/operational considerations for MLAT implementation - completed • Guideline on technical considerations in support of ATFM implementation – completed • Guideline for the presentation of MET products in graphic format – completed • Action plan for ADS-B implementation in the SAM Region • Number of ADS-B stations installed		
Strategy	• All tasks will be conducted by experts nominated by States and organizations of the SAM Region members of the Project *Improve ATM situational awareness in the SAM Region,* under management of the project coordinator. Communications among project members, as well as between the project coordinator and programme coordinator, shall be carried out through teleconferences and the Internet. • Once studies are completed, the results will be submitted to the ICAO programme coordinator as a final consolidated document for its analysis, review, approval and presentation at the GREPECAS PPRC		

Goals	• Regional surveillance strategy for the implementation of systems in support to situational awareness improvement for July 2012 (completed) • Guideline on technical/operational considerations for ADS-B implementation for October 2012 (completed) • Guideline for the drafting of SIGMET in graphic format (December 2013) (completed) • Guideline for technical/operational considerations for MLAT implementation for March 2015 (completed) • Guideline for technical considerations in support of ATFM implementation (By May 2017) • Action plan for ADS-B implementation in the SAM Region (November 2014) (completed) • 60% of continental regional air space superior FLP 245 covered with ADS-B by end 2020
Justification	• Improve situational awareness has been identified as a great support for ATM, contributing in the increase of safety and in flight efficiency • In addition, a close relationship with the other programmes and their respective projects is necessary, with the aim of collecting the operational requirements demanded by the mentioned applications and their respective tentative implementation dates • This project contributes to the implementation of modules B0 ASUR, B0 SURV, B0 NOPS and B0 AMET of the *Air Navigation System Performance-Based Implementation Plan for the SAM Region (SAM PBIP)*
Related Projects	• Air Navigation Systems in Support of PBN • Automation • ATFM • ATN Ground-ground and Air-ground Applications

Project Deliverables	Relationship with Performance Based Regional Plan aligned with ASBU	Responsible	Status of Implementation[2]	Delivery Date	Remarks
Evaluation of surveillance infrastructure and identification of surveillance systems improvements					
Evaluation of surveillance systems coverage in the SAM Region	PFF SAM CNS 04 ANRF B0 ASUR	Paulo Vila (Peru)		Completed October 2012	The evaluation of coverage was carried out in connected to the drafting activities of the Guideline on technical/operational considerations for ADS-B implementation. The results are presented as Appendix A to the Guideline and can be downloaded from site http://www.icao.int/SAM/Pages/eDocumentsDisplay.aspx?area=CNS
Drafting of regional plan for ADS-B and MLAT implementation					
Guideline on technical/ operational considerations for ADS-B implementation	PFF SAM CNS 04 ANRF B0 ASUR	José Rubira (Peru) Marco Vidal (Peru)		Completed October 2012	The Guideline was approved for use in the interested States of the SAM Region, by the Eleventh Workshop/Meeting of the SAM Implementation group (SAM/IG/11) held in Lima from 13 to 17 May 2013 and can be downloaded from the following website http://www.icao.int/SAM/Pages/eDocumentsDisplay.aspx?area=CNS
Guideline on technical/ operational considerations for MLAT implementation	PFF SAM CNS 04 ANRF B0 ASUR	Ivan Salas (Ecuador)		Completed October 2015	The Guideline was presented in the Fifteenth Workshop/Meeting of the SAM Implementation Group (SAM/IG/15) held in Lima from 11 to 15 May 2015 for initial review and was circulated to all SAM Region States. The final approval is foreseen for the Sixteenth Workshop/Meeting of the SAM Implementation Group (SAM/IG/16) to be held in Lima from 19 to 23 October 2015.
Guideline on technical considerations in support of ATFM implementation	PFF SAM ATM 05 B0 NOPS	Murilo Loureiro		May 2017	The preliminary guideline was prepared on early 2016 and is presented for Meeting review.

[2] ***Gray**: Activity has not started*
***Green**: Activity has or will deliver planned milestone as scheduled*
***Yellow**: Activity is behind schedule on milestone, but still within acceptable parameters to deliver milestone on time*
***Red**: Activity has failed to deliver milestone on time, mitigation measures need to be identified and implemented*

Project Deliverables	Relationship with Performance Based Regional Plan aligned with ASBU	Responsible	Status of Implementation[2]	Delivery Date	Remarks
Guideline for the presentation of MET products in graphical format	PFF SAM MET 03 ANRF B0 AMET	Jorge Otiniano (Peru)		Completed October 2014	The document guideline was delivered to the Secretariat (MET) of SAM Region for its review by the corresponding meteorology specialists. The Guideline was review by the OPMET information exchange Meeting of SAM Region (27 – 29 October 2014) and will be used as guideline for the implementation of SIGMET graphic in Argentina, Chile, Ecuador, Paraguay and Peru by the second half of 2015 sponsored by the technical cooperation regional project RLA/06/901.
Action plan for ADS-B implementation in SAM Region	ANRF B0 ASUR	Paulo Vila (Peru)		Completed November 2014	The action plan for the regional implementation of the ADS B was presented an approved in the Fourteenth Workshop/Meeting of the SAM Implementation Group (SAM/IG/14) Lima, Peru, from 10 to 14 November 2014. The document can be downloaded from the following website as part of the final report of the SAM/IG/14 (Appendix C, Agenda Item 7) http://www.icao.int/SAM/Pages/MeetingsDocumentation.aspx?m=2014-SAMIG14
Follow-up to ADS-B implementation in SAM Region States	ANRF B0 ASUR	Paulo Vila (Peru)		December 2020	Status of implementation of ADS-B in the SAM Region is presented in **Appendix D** of this WP
Monitoring activities for the implementation of improvement to the ATM Situational Awareness in the SAM Region		Programme Coordinator and Project Coordinator		October 2011 December 2020	
Resources necessary	Experts in the carrying out of the deliverables				

APPENDIX G

AERODROME SAFETY AND CERTIFICATION IMPLEMENTATION PROJECT – CAR REGION

CAR Region	**PROJECT DESCRIPTION (PD)**	PD N° F1	
Programme	**Project Title**	**Start**	**End**
Aerodromes (Programme Coordinator: Jaime Calderon ICAO AGA RO)	*Aerodrome Safety and Certification Implementation Project* *Project Coordinator: To be determined*	April 2018	July 2020
Objective	Assist States in the CAR Region that have not yet imitated the certification process, in the review of regulations, aerodrome certification related documents, guidance material and operational procedures with the objective to increase the number of aerodromes certified and furthermore increment the runway safety teams promoting the implementation of strategies to reduce the number of accident severity and incidents related with the runway safety in a continuous basis.		
Scope	The scope of the project includes the identification of problems based on the USOAP results in the aerodrome certification process, in order to assess States complying regional targets and develop tailored needs in relation to their requirements and facilitate the initial certification of aerodromes, resolution of reported deficiencies in the GANDD and maintain continuous oversight.		
Metrics	• Number of aerodromes certified per State • % of aerodromes certified per Region • Number of AGA inspectors per State • State EI % in the AGA area • Number of RST established • Number of reported deficiencies in the GANDD		
Strategy	• **High level commitment to certify aerodromes:** Thru GREPECAS decisions, Directors of CAA's are encouraged to submit a plan to certify aerodromes receiving international operations for the next 3 years, in order to facilitate follow-ups and contribute to Regional goal of increasing the number of aerodromes certified. • **Certification of aerodromes:** encompasses 4 main tasks: Provide guidelines/training to aerodrome inspectors, establishment of initial procedure for aerodrome certification and continuous oversight, development of certification manuals and issue of aerodrome certificates. • **Implementation of RST in aerodromes that have not yet implemented:** as part of the airport certification process, formally establish runway safety teams in aerodromes that have not yet implemented RST. Following its initiation the NACC Office will assist in the conformation of these teams and the elaboration of terms of reference based on ICAO supporting documents.		
Goals	• Continue supporting Mexico airport groups for the completion of the certification of the 23 remaining aerodromes based on an annual plan (for 2019 are projected to complete 4 of the 20 certification already initiated) and deemed complete the certification by the end of 2022. The GAP airports group has finished with the certification of its 12 aerodromes under his administration. • Continue assisting States/airports to request, with the continuation of the certification of aerodromes, mainly those who have initiated the process such as: Cuba, Dominican Republic, Costa Rica, Honduras, Guatemala, Belize, Bahamas, Jamaica and the Caribbean of the East and reach 60% by end of 2019. • Preparation of guidelines and checklists additional to those already existing in the NACC web site (e-documents: with examples		

	of manuals of aerodrome, checklist of content of the aerodrome manual, Runway Safety Team - Terms of Reference (ToRs)) as guidance material to assist the States/airports in the certification process.
Rationale	• Based on 2017 statistics of the ICAO USOAP results, 57% of States have not established a process for the certification of aerodromes. • 61% of States do not ensure that aerodrome manuals are reviewed periodically to check their amendment status and that the information contained in the manual remain correct. • 47% of States do not have a procedure in place for subsequent amendments to the aerodrome manual to be reviewed and approved/accepted by aerodrome regulatory authority technical staff. • 47% of States do not ensure that aerodrome operators develop and implement aerodrome maintenance programmes at all aerodromes in the interests of safety, efficiency and regularity of aircraft operations. • 85% of States have not established a process to review the validity of using an aeronautical study or risk assessment to justify an application for an exemption or exception as well as the continuing need. • 81% of States have not established and implemented a mechanism to assess the outcomes of the conduct of risk assessments or aeronautical studies. • 77% of States aerodrome regulatory authorities lack sufficient human resources (including an appropriate mix of technical disciplines given the size and scope of all the aerodrome operations in the State) to carry out its functions and mandate. • Up to May 2019, CAR Regional office has reported that the CAR region has reached 56% of international aerodromes certified.
Related Projects	• TBD

Project Deliverables	Relationship with the regional performance -based plan (PFF)	Responsible	Status of Implementation	Date of Delivery	Comments
Identification of common problems in the States/airports in the Eastern Caribbean based on the missions carried out to 4 States under the SAFE fund project and initiation in 4 countries the certification process of 4 aerodromes out of 10 (eANP).	PFF CAR AGA 02	ICAO NACC	**45%**	3Q-2020	In process
Follow-up on 20 airports that have begun the process of certification in the CAR region jointly with the civil aviation authority (Mexico, Belize, Bahamas, Costa Rica, Honduras and Guatemala, Cuba and Dominican Republic)	PFF CAR AGA 02	ICAO NACC /STATES	**60%**	INITIATED	Started Assessed Honduras in the certification of aerodromes; first aerodrome certified April 2019. Belize is in the process of finalizing the process by the end of 2019
Assistance to States to improve and increase the level of effective implementation in the field of aerodromes.	PFF CAR AGA 02	ICAO NACC /STATES	**60%**	INITIATED	Task has begun and officer in charge of Bahamas and Barbados effective implementation.
Development of templates and provision of guidance material for States to use in the certification process.	PFF CAR AGA 02	ICAO NACC /STATES	**80%**	INITIATED	Guidance materials were uploaded in e-documents of the ICAO NACC web site and are intended to develop additional material.
Follow-up to the implementation of runway safety teams and creation of new teams in those States/airports that still do not have the RST implemented.	PFF CAR AGA 02	ICAO NACC /STATES	**70%**	INITIATED	Follow-up to México, Aruba, Honduras, Costa Rica y Antigua y Barbuda
Resources needed	High level commitment on each participating State. The provision of counterparts in each State, on a Matrix Management approach, to the project. Designation of experts by States (direct assistance) is needed in the execution of some of the deliverables. Access to State regulations, guidance, manuals, procedures, advisory circulars, and other best practices available.				

PROJECT ON AERODROME SAFETY AND CERTIFICATION – SAM REGION

SAM Region	**PROJECT DESCRIPTION (PD)**	PD N° F1	
Programme	**Project Title**	**Start**	**End**
Aerodromes (Programme Coordinator: Fabio Salvatierra ICAO AGA RO)	*Aerodrome Safety and Certification* *Project Coordinator: To be determined*	April 2018	July 2020
Objective	Assist States in the SAM Region to increase the number of certified aerodromes and the establishment of runway safety mechanisms (e.g. Runway Safety Teams) to tackle runway safety related events at designated aerodromes.		
Scope	The scope of the project includes the identification of latent problems or bottlenecks in the aerodrome certification process, in order to better assess States complying regional targets and develop tailored needs in relation to, documentation, processes and procedures, development of guidelines, training, expert advice, best practices, and data and information collection, to enable initial certification of aerodromes and continuous surveillance.		
Metrics	• Number of aerodromes certified per State • % of aerodromes certified per Region • Number of AGA inspectors per State • State EI % in the AGA area • Number of RST established • Number of reported deficiencies in the GANDD		
Strategy	• **High level commitment to certify aerodromes:** Thru GREPECAS decisions, Directors of CAA's are encouraged to present a plan to certify a minimum number of aerodromes per year in the next 3 years, in order to contribute with the Regional goal of increasing aerodromes certified. • **Data and information gathering:** Through a cooperation mechanism (to be defined with States and Industry partners), the Project will carry out a survey to collect data and define the level of maturity of available documentation/procedures to engage initial aerodrome certification. • **Data and information analysis:** after collecting the data, this will allow the Project specialists to make a Gap Analysis and define required solutions (guidelines, documentation, Go Teams, technical cooperation, seminars, workshops, etc.) following the Pareto principle. • **Establish State sub-projects (certification Program (3 year) and Yearly Plans)**: The Project will then establish (with the support of States specialists and under coordination of Programme coordinator) per-State sub-projects with a common methodology so that all State's certification programs may be monitored by the Programme coordinator. These sub-projects will, among other tasks:		

	– Analyze high level commitment and resources available for aerodrome certification (on States and Aerodrome Operators). – Assess State framework and aerodrome certification program to identify potential support from other Contracting State(s), RSOO's, International Organizations or the RO's – Give the State and the Project coordination a tool to measure their improvement and identify possible bottlenecks. • **Initial certification of aerodromes:** consequently, as States implement their program, aerodromes will receive initial certification so that the continuous surveillance phase can begin. This initial certification will be based on current conditions, with exemptions or alternate methods of compliance if applicable. • **Initiate implementation of RST to each designated aerodrome:** as part of the airport certification process, formally establish runway safety teams in each designated aerodrome, following common guidelines based on ICAO supporting documents.
Goals	• Survey on available documentation, procedures and competent staff for aerodrome certification at States. YE2017 • Regional aerodrome manual template for aerodrome certification process. YE2018 • Regional Runway Safety Team guidelines for implementation based on ICAO and industry best practices. YE2019 • Regional minimum Aerodrome SMS requirements to apply for an aerodrome initial certification. YE2018 • Regional "modification of standards" or "safety cases" procedure for aerodrome operators to present requests for exemptions and apply for initial aerodrome certification. YE2019 • 100% of States with State Certification Programme for designated aerodrome. YE2019 • % (*to be defined by SAM Plan*) of international aerodromes with initial certification completed. YE2020 • % (*to be defined by SAM Plan*) States with sufficient and competent aerodrome inspectors or with arrangements and legal mechanisms to delegate to other entities (other States, RSOO's, etc.). YE2020 • % (*to be defined by SAM Plan*) of international aerodromes with established Runway Safety Teams.YE2020
Rationale	• According to ICAO (USOAP CMA Safety Report 2015), almost 60 per cent of contracting States in the world have not fully implemented the requirements for the certification of aerodromes. More than 50 per cent of the States have not established a comprehensive aerodrome certification process, including all the necessary assessments. In addition, almost 60 per cent of the States have not established, in the framework of their certification process, a mechanism based on safety assessments, for reviewing and accepting non compliances with established requirements. • Also, more than 60 per cent of the States do not ensure that their aerodrome operators have established and implemented integrated strategies, including Local Runway Safety Teams (LRSTs), for the prevention of runway incursions and other accidents and incidents at aerodromes. • By February 2018, SAM Regional office has accomplished about 30% of international aerodromes certified.
Related Projects	• TBD

Project Deliverables	Relationship with the regional performance-based plan (PFF)	Responsible	Status of Implementation	Date of Delivery	Comments

Project Deliverables	Relationship with the regional performance-based plan (PFF)	Responsible	Status of Implementation	Date of Delivery	Comments
Survey to States on current national approved regulations/procedures on aerodrome certification, in order to set the baseline documentation needs.	PFF SAM AGA 02	Programme Coordinator	**100%**	2Q-2018	Completed Survey results sent to States were received through official letter LT 10 / 2.1.1-SA247
Collect best practices from States to develop guidance material (templates) and incorporate them to the LAR AGA set	PFF SAM AGA 02	Programme Coordinator	**25%**	2Q2020	Started Under the umbrella of Project RLA99 / 901, the Technical Committee of the SRVSOP is working on an "Aerodrome Manual Model" to facilitate certification, in addition to updating the Manual of the Aerodrome Inspector Manual and other proposed model manuals.
Review the survey's results and prepare a plan, on a Regional and State level to support the identified gaps	PFF SAM AGA 02	Programme Coordinator & SRVSOP TC	**10%**	PPRC/5(2019)	In accordance with the acceptance of the Safety Plan for the SAM Region, the SAM Office together with the SRVSOP are in the process of preparing a detailed Regional Plan.
Prepare methodology (procedure and templates) for States to present their Certification sub-projects	PFF SAM AGA 02	Programme Coordinator	**50%**	PPRC/5 (2019)	For PPRC / 5 a business case of Technical Assistance Project is presented that would use part of the documentation used in past aerodrome certification tests.
Plan for initial certification Go-Teams (with support of SRVSOP and other partners/stakeholders)	PFF SAM AGA 02	Programme Coordinator & SRVSOP TC	**10%**	YE2020	There is a request from one (1) State interested in a Go-Team to be executed between 2019-2020.
Prepare guidance (in Spanish) for the creation of RST's	PFF SAM AGA 02	SRVSOP	**100%**	PPRC/5 (2019)	Based on the ICAO RST Manual, the first edition of the RST Advisory Circular for the SRVSOP was created and published, available at: https://www.srvsop.aero/circulares/ca-aga-153-010-implementacion-de-equipos-de-seguridad-de-pista-rst/

Project Deliverables	Relationship with the regional performance-based plan (PFF)	Responsible	Status of Implementation	Date of Delivery	Comments
Prepare a plan to implement RST's per designated airport	PFF SAM AGA 02	Programme Coordinator	**0%**	PPRC/6 (2020)	Not started
Runway Safety Go-Teams (with support of ICAO HQ, States, ACI and other partners/stakeholders)	PFF SAM AGA 02	Programme Coordinator	**0%**	2020-onwards	Not started
Resources needed	High level commitment on each participating State. The provision of counterparts in each State, on a Matrix Management approach, to the project. Designation of experts by States (direct assistance) is needed in the execution of some of the deliverables. Access to State regulations, guidance, manuals, procedures, advisory circulars, and other best practices available.				

APPENDIX H
CURRENT STATUS OF IMPLEMENTATION IN THE STATES OF THE SAM REGION

- Argentina: 4 airports
- Brazil: 10 airports
- Chile: Add two airports to which I had previously reported (up to SAM/AIM/11)
- Panamá: Has prepared a project for the obstacle survey for two airports
- Uruguay has prepared the Plan, which has been approved by the authorities, and is currently in the process of implementing the plan.
- Suriname has not prepared a plan so far because they do not have an expert for this task. They will carry out training in the month of July after which they prepare the e-TOD implementation plan.
- Paraguay has not prepared a Plan for the implementation of e-TOD. However, it is preparing an agreement with companies that are surveying obstacles in Paraguay in order to have the data that these companies generate from their observations.
- Peru has a binding process for survey the obstacle for Cuzco airport.
- Venezuela reported that it has an obstacle database, but it must be updated

APÉNDICE I

Región SAM	**DESCRIPCION DEL PROYECTO (DP)**	DP N° G1	
Programa	**Título del Proyecto**	**Fecha inicio**	**Fecha término**
AIM (Coordinador OACI del Programa: Jorge Armoa)	Implantación del suministro de datos electrónicos sobre el terreno y obstáculos (e-TOD) (SAM) Coordinador del proyecto: Juan González (Uruguay) Expertos contribuyentes al proyecto: SAM/AIM IG	26/09/11	31/12/19
Objetivo	Apoyar la implementación del suministro de datos e-TOD por los Estados de la Región SAM y brindar guías a los Estados para la adquisición y gestión de un GIS.		
Alcance	El alcance del proyecto contempla la evaluación e identificación de los niveles de implantación asociados al suministro de los datos electrónicos sobre el terreno y los obstáculos. Se contempla la elaboración de un Plan de acción y guías para implantación del e-TOD para apoyar los desarrollos del suministro de datos electrónicos del terreno y los obstáculos para la evolución de modelos digitales del terreno (DTM) para la mejora progresiva de cartas aeronáuticas electrónicas y otros productos similares apoyados con herramientas como los sistemas de información geográfica (GIS).		
Métricas	• Número de Estados con Sistemas GIS o automatizados implantados. • Documento-Guía con Plan de Acción aprobado. • Número de Estados que establecen acuerdos SLA. • Número de principales Aeropuertos Internacionales con Área 2 (e-TOD) relevada		
Estrategia	La ejecución de las actividades del Proyecto será coordinada a través de las comunicaciones entre miembros del proyecto, el Coordinador del Proyecto y el Coordinador del Programa principalmente a través de teleconferencias (aplicación *GoToMeeting)* así como eventuales reuniones que se puedan realizar en eventos oportunos según las actividades del programa de trabajo. El Coordinador del Proyecto coordinará con el Coordinador del Programa la incorporación de expertos adicionales si lo ameritan las tareas y trabajos a realizarse. Los resultados de los trabajos realizados, serán sometidos a consideración y revisión por los expertos de los Estados en forma de documento final de consolidación para su análisis, revisión, aprobación y presentación al CRPP del GREPECAS por el Coordinador del Programa.		
Metas	Elaborar el Documento-Guía con los objetivos del proyecto ETOD. 2012. Definir las especificaciones técnicas y del proyecto ETOD. 2012. Elaborar el documento con las especificaciones técnicas ETOD. 2012. Guía para la adquisición de un sistema de Información geográfica (GIS) 2012. Manual Guía Implantación GIS.2012. Metodologías y herramientas disponibles para relevar el Área 2. 2013 Principales Aeropuertos Internacionales con Área 2 (e-TOD) relevada. 2019		

Justificación	Cumplimiento de los SARPS Anexo 15 y Anexo 4 para facilitar la aplicación de las operaciones aéreas basadas en la performance y avanzar en la Hoja de Ruta de la Transición del AIS a la AIM. Es necesaria una estrecha relación con otros proyectos con el fin de recolectar los requisitos operacionales demandados por las aplicaciones mencionadas y sus respectivas fechas tentativas de implantación.
Proyectos relacionados	Se relaciona con el Proyecto G3 "*Implantación del sistema de gestión de calidad en las dependencias AIM*" en los Estados de la Región SAM.

Entregables del Proyecto	**Relación con el Plan Regional basado en performance (PFF)/ASBU**	**Responsable**	**Estado de Implantación***	**Fecha entrega**	**Comentarios**
Cuestionario de consulta sobre estado de implantación e-TOD.	PFF: SAM AIM/02	Juan González Uruguay		30/11/2011	Completada en fecha.
Generar Informe de Seguimiento.	PFF: SAM AIM/02	Juan González Uruguay		30/04/2012	Completada en fecha.
Elaborar el Documento-Guía con los objetivos del proyecto e-TOD.	PFF: SAM AIM/02	Juan González Uruguay		30/09/2012	Completada en fecha. Entregado 30/09/2012.
Definir las especificaciones técnicas y del proyecto e-TOD.	PFF: SAM AIM/02	Juan González Uruguay		30/09/2012	Completada en fecha. Entregado 30/09/2012.
Elaborar el documento con las especificaciones técnicas e-TOD.	PFF: SAM AIM/02	Juan González Uruguay		30/09/2012	Completada en fecha. Entregado 30/09/2012.
Guía para la adquisición de un sistema de Información geográfica (GIS).	PFF: SAM AIM/01	Juan González Uruguay		09/03/2012	Completada en fecha.
Manual- Guía Implantación GIS.	PFF: SAM AIM/01	Juan González Uruguay		09/03/2012	Completada en fecha.
Presentar a los Estados las diferentes opciones y herramientas disponibles para el relevamiento del Área 2	ASBU:BO30 DATM	Coordinador OACI		26/07/2013	Completada en fecha
Guía para desarrollar un Modelo Digital de Terreno (MDT) o Modelo Digital de Elevación (MDE)	PFF: SAM AIM/02 ASBU:BO30 DATM	Grupo *ad hoc* Reunión SAM/AIM/7		30/03/2015	Completada en fecha

Completar 50% de Estados con implantación de MDT y/o MDE antes de la Reunión SAM/AIM/7	PFF: SAM AIM/02 ASBU:BO30 DATM	Estados		12/11/2016	Completado el 49% en fecha.
Disponibilidad de programas para gestionar la información e-TOD.	PFF: SAM AIM/02 ASBU:BO30 DATM	Estados		12/11/2016	Completado el 49% de los Estados en fecha.
Plan de Acción para datos electrónicos sobre **terreno** en Área 2	PFF: SAM AIM/02 ASBU:BO30 DATM	Estados		12/11/2019	Completado el 49% de los Estados en fecha.
Plan de Acción para datos electrónicos sobre **obstáculos** en Área 2	PFF: SAM AIM/02 ASBU:BO30 DATM	Estados		12/11/2019	Completado el 42% de los Estados en fecha.
Recursos necesarios	Designación de expertos en la ejecución de algunos de los entregables. Mayor compromiso de los estados en apoyar a los coordinadores y expertos que están trabajando.				

APÉNDICE J

Región SAM	**DESCRIPCION DEL PROYECTO (DP)**	DP N° G2	
Programa	**Título del Proyecto**	**Fecha inicio**	**Fecha término**
AIM (Coordinador OACI del Programa: Jorge Armoa Cañete)	G2: Implantación de sistemas de intercambio de información aeronáutica (AIXM) (SAM) Coordinadora del Proyecto: Ing. Karina Calderón Expertos contribuyentes al proyecto: SAM/AIM/IG	01/03/12	30/12/20
Objetivo	Elaborar Plan de Acción que deben implementar los Estados para aplicar el modelo de intercambio de información/datos aeronáuticos.		
Alcance	El alcance del proyecto contempla la evaluación e identificación de los niveles de automatización asociados a la integración del modelo de intercambio de información y datos aeronáuticos en la Región por medio de encuestas, la identificación de los proveedores de bases de datos y el seguimiento sobre el avance de los SARPS en esta materia.		
Métricas	Números de Estados con Plan de Acción implantado para sistemas de intercambio de datos.		
Metas	Completar toda la documentación necesaria para los Estados antes del 31/12/16. Lograr la implantación del AIXM en el 40% de los Estados para el 2018 Lograr la implantación del AIXM en el 75% de los Estados para el 2019.		
Estrategia	La ejecución de las actividades del Proyecto será coordinada a través de las comunicaciones entre miembros del proyecto, el Coordinador del Proyecto y el Coordinador del Programa principalmente a través de teleconferencias (aplicación *GoToMeeting*). Se planifican seminarios/reuniones según las actividades del programa de trabajo. El Coordinador del Proyecto coordinará con el Coordinador del Programa la incorporación de expertos adicionales si lo ameritan las tareas y trabajos a realizarse. Se realizarán las coordinaciones CAR y SAM. Los resultados de los trabajos realizados, serán sometidos a consideración y revisión por los expertos de los Estados en forma de documento final de consolidación para su análisis, revisión, aprobación y presentación al CRPP del GREPECAS por el Coordinador del Programa.		
Justificación	Integrar la información aeronáutica que permita la inter-operación de sistemas ATM manteniendo la seguridad operacional, aplicando los modelos de intercambio de información.		

Proyectos relacionados	Se relaciona con el Proyecto G3 "*Implantación del sistema de gestión de calidad en las dependencias AIM en los Estados de la Región SAM*".

Entregables del Proyecto	**Relación con el Plan Regional basado en performance (PFF)**	**Responsable**	**Estado de Implantación***	**Fecha entrega**	**Comentarios**
Relevamiento de suministro de la IAIP mediante el uso de una tabla.	D-ATM	Coordinador OACI		16/03/12	Completada en fecha durante la Reunión SAM/AIM.
Distribución a los Estados relevamiento IAIP	D-ATM	Coordinador OACI		16/03/12	Completada en fecha durante la Reunión SAM/AIM.
Recolección y actualización	D-ATM	Coordinador OACI		16/03/12	Completada en fecha durante la Reunión SAM/AIM.
Recolección de experiencias en los Estados de la Región SAM AIP electrónico	D-ATM	Coordinador OACI		16/03/12	Completada en fecha durante la Reunión SAM/AIM.
Desarrollar Plan de Acción AIXM	D-ATM	Coordinador OACI		24/04/15	Completada en fecha.
Recopilación de la documentación AIXM	D-ATM	Coordinador OACI		22/05/15	Completada en fecha.
Traducción de la documentación AIXM	D-ATM	OACI		10/07/15	Completada en fecha.
Revisión de la documentación AIXM	D-ATM	Coordinador OACI		21/08/15	Completada en fecha
Validar la documentación	D-ATM	Coordinador OACI		30/11/16	
Elaboración documento describiendo pasos para las pruebas AIXM	D-ATM	Coordinador OACI		Diciembre de 2018	
Realización de las pruebas AIXM	D-ATM	Coordinador OACI		Diciembre de 2019	

Informe de resultado de las pruebas Trasmisión y recepción de datos	D-ATM	Coordinador OACI		19/05/20	
Seminario AIXM	D-ATM	Coordinador OACI		02/10/15	Completada a la fecha
Recursos necesarios	Designación de expertos en la ejecución de algunos de los entregables. Mayor compromiso de los Estados en apoyar a los Coordinadores y expertos que están trabajando.				

**Gris* *Tarea no iniciada*
Verde *Actividad en progreso de acuerdo con el cronograma*
Amarillo *Actividad iniciada con cierto retardo pero estaría llegando a tiempo en su implantación*
Rojo *No se ha logrado la implantación de la actividad en el lapso de tiempo estimado se requiere adoptar medidas mitigatorias*

APÉNDICE K

Región SAM	**DESCRIPCION DEL PROYECTO (DP)**	DP N° G3	
Programa	**Titulo del Proyecto**	**Fecha inicio**	**Fecha término**
AIM (Coordinador OACI del Programa: Jorge Armoa Cañete)	Implantación del sistema de gestión de calidad en las dependencias AIM de los Estados de la Región SAM Coordinador del Proyecto: Oscar Dioses (Perú) Expertos contribuyentes al Proyecto: SAM/AIM IG	03/10/11	01/11/20
Objetivo	Implementar las guías aplicables al sistema de gestión de la calidad en el entorno digital/electrónico del AIM en la Región SAM con base a los Objetivos regionales de performance del Plan de Implementación basada en la Performance para la Región SAM.		
Alcance	El alcance del proyecto contempla la evaluación e identificación de los niveles de implantación asociados a la gestión de la calidad en los servicios AIM de la Región. Elaboración de un Plan de acción y guías para la implantación del QMS en el entorno digital/electrónico del AIM.		
Métricas	Porcentaje de Estados Certificados QMS ISO 9001:2015.		
Metas	50% de Estados con la Norma ISO 9001:2015 implantada en el año 2018 y 75% certificada en el año 2019.		
Estrategia	La ejecución de las actividades del Proyecto será coordinada a través de las comunicaciones entre miembros del proyecto, el Coordinador del Proyecto y el Coordinador del Programa principalmente a través de teleconferencias (aplicación *GoToMeeting*) así como eventuales reuniones que se puedan realizar en eventos oportunos según las actividades del programa de trabajo. El Coordinador del Proyecto coordinará con el Coordinador del Programa la incorporación de expertos adicionales si lo ameritan las tareas y trabajos a realizarse. Los resultados de los trabajos realizados, serán sometidos a consideración y revisión por los expertos de los Estados en forma de documento final de consolidación para su análisis, revisión, aprobación y presentación al CRPP del GREPECAS por el Coordinador del Programa.		
Justificación	El sistema de gestión de calidad en los servicios AIM debe proporcionar a los usuarios la garantía y confianza necesaria de que la Información/Datos aeronáuticos distribuidos satisfacen los requisitos de calidad en cuanto a su exactitud, resolución e integridad. Es necesaria una estrecha relación con otros proyectos con el fin de recolectar los requisitos operacionales demandados por las aplicaciones mencionadas y sus respectivas fechas tentativas de implantación.		
Proyectos relacionados	Se relaciona con los Proyectos G1 “Implantación del suministro de datos electrónicos sobre el terreno y obstáculos e-TOD” y G2 “Implantación de sistemas de intercambio de información aeronáutica (AIXM)”.		

Entregables del Proyecto	Relación con el Plan Regional basado en performance (PFF)	Responsable	Estado de Implantación*	Fecha entrega	Comentarios
Recopilar y tabular la información de los Estados.	PFF: SAM AIM/01	Coordinador OACI		13/12/17	Valida.
Plan de implantación del sistema QMS actualizados a la Norma ISO 9001:2015	PFF: SAM AIM/01	Estados		29/09/17	Válido.
Actualización de Programas de Instrucción AIM	B0 DATM	Estados		30/11/17	Válido
Recopilar Certificaciones y producir Informe sobre estado de Certificaciones ISO 9001:2015 en la Región SAM.	B0 DATM	Coordinador OACI		15/06/20	Brasil, Chile, Panamá, Paraguay, Peru y Uruguay han certificado con la Norma ISO 9001:2015.
Recursos necesarios	Designación de expertos en la ejecución de algunos de los entregables. Mayor compromiso de los Estados en apoyar a los Coordinadores y expertos que están trabajando.				

APPENDIX L

PROJECT FOR THE IMPLEMENTATION OF THE MET INFORMATION QUALITY MANAGEMENT SYSTEM (QMS/MET)

SAM Region	**PROJECT DESCRIPTION (DP)**	**DP N° H3**	
Programme	**Title of the Project**	**Start**	**End**
Aeronautical Meteorology *(Programme coordinator: Jorge Armoa)*	Implementation of the QMS/MET *Project coordinator:* *Baldomero Thomas (Panama)* *Experts contributing to the project:* *César Acosta (Ecuador)* *Jorge Sánchez (Paraguay)* *Hugo Rosado (Peru)* *Ricardo Reyes (Peru)*	January 2016	December 2020
Objective	Assist States in the implementation of the QMS/MET and certification, where applicable, and establish guidelines for the transition to the standard ISO 9001: 2015, aligned to ASBU and projected to the interoperability of meteorological information, in compliance with Annex 3.		
Scope	Establishment and application of a quality management system of meteorological data safety-oriented at each MET unit of all SAM aerodromes listed in CAR/SAM ANP and compliance with the standards and recommended practices of Annex 3 and the CAR/SAM e-ANP, Vol. I and Vol. II.		
Metrics	Number of AOP aerodromes certified under ISO 9001 in force.		
Strategy	All tasks will be carried out by experts nominated by SAM States participating in the project, led by the Project Coordinator and under the supervision of the MET Programme Coordinator through the "GoToMeeting" tool. Upon completion of the tasks, the results will be sent to the MET Programme Coordinator as a final document for submission to, and if necessary approval by, the GREPECAS CRPP through the GREPECAS fast-track procedure. For the purpose of collaborative decision-making, meetings will be held with the areas involved.		
Goals	a) 100% of SAM States have established QMS/MET system in accordance with standard ISO 9001:2008 on 30 June 2016; b) 70% of SAM States apply and certify QMS/MET system in accordance with standard ISO 9001:2015 on 31 December 2017; and c) 100% of SAM States have QMS/MET system certified by an organization in accordance with standard ISO 9001:2015 in June 2019.		
Rationale	More accurate and timely meteorological information will optimise flight path planning and prediction, thus improving ATM safety and efficiency; improved aerodrome reports and forecasts will optimise the use of available aerodrome capacity; and meteorological information will minimise the environmental impact of air traffic. Performance management will be an important part of meteorological information quality assurance.		
Related projects	➢ Automation ➢ Improved ATM situational awareness		

Project Deliverables	Relationship with the regional performance-based plan (PFF)	Responsible Party	Status of[i] Implementation	Date of Delivery	Comments
Guidelines for the transition to Standard ISO 9001:2015	PFF SAM MET 02, 03, and 04	MET programme coordinator and project director		September 2016	The guidelines will facilitate the drafting of ISO 9001: 2015 documentation by MET service provider States.
Survey to States on MET personnel completed	PFF SAM MET 02, 03, and 04	MET programme coordinator and project director		November 2016	One of the main problems facing MET service provider States is the lack of personnel with the qualifications and competencies required by WMO and ICAO. State requirements will be officially communicated to ICAO contracting States.
Prepare the assessment plan of personnel competency, qualifications, professional education and aeronautical meteorology personnel training.				Diciembre 2019	Follow up on the tasks related to this item in order to take note of compliance of Standard 2.1.5 of Annex 3 and to the requirements of WMO Technical Regulations No. 49, Part V and Part VI.
Table of compliance with eANP CAR/SAM, Part VI – MET, Vol I.	PFF SAM MET 02, 03, and 04	MET programme coordinator and project director		June 2016	Close monitoring of compliance with Part MET of Volume I of the e-ANP CAR/SAM.
Report of the MET service risk management workshop	PFF SAM MET 02, 03, and 04	MET programme coordinator and project director		August 2016	June 2016 has been scheduled as a possible date for the development of the workshop seminar on “Risk Analysis”.
Installation and on-site training in SAETAF for the CAR / SAM States that require it.		States that require it		September 2020	Cuba in coordination with WMO and ICAO will provide on-site installation and training to the CAR States at no cost. The States will have to cover the cost of the passage and per diem of the experts according to the norm of the agencies of the United Nations
Update course in Leader Auditor	PFF SAM MET 02, 03, and 04	Project Director		October 2017	An update course for the auditors trained under the standards of ISO 9001:2008 should be developed in order to have the required knowledge in the new standards introduced in version 2015.
Resources needed	Availability for GoTo Meeting teleconferences is required.				

[i] *Grey* *Task not started yet*
Green *Activity being implemented as scheduled*
Yellow *Activity started with some delay, but will be implemented on time*
Red *Activity not implemented on time; mitigation measures are required*

APPENDIX M

Current status of implementation of the NANPs in the CAR region			
State	**NANP Implemented**	**In preparation**	**Comments**
Antigua	X		
Bahamas		X	
Barbados	X		
Belize	X		
Costa Rica	X		
Cuba	X		To be updated on the website
Curacao	X		
Dominican Republic	X		
El Salvador	X		
Grenada		X	
Guatemala	X		
Haiti	X		
Honduras	X		
Jamaica		X	
Mexico	X		
Nicaragua	X		
Saint Kitts and Nevis		X	
Saint Lucia	X		
Saint Vincent and Grenadines	X		
Trinidad and Tobago	X		
COCESNA	X		

APPENDIX N

Current status of implementation of the NANPs in the SAM region			
State	**NANP Implemented**	**In preparation**	**Comments**
Argentina		X	
Brasil	X		
Bolivia	X		
Chile	X		
Colombia	X		
Guyana		X	
Ecuador	X		
Panamá		X	Panama has had a NANP. It has been outdated but a new version will be worked on
Paraguay		X	
Peru		X	Peru is working on the preparation of its National Air Navigation Plan.
Suriname		X	
Uruguay		X	
Venezuela	X		